

UNIVERSITY OF MANITOBA

1.2
pt 1

"IN-SITU CHARACTERIZATION OF MATERIAL PROPERTIES
FOR
THE DESIGN AND EVALUATION OF FLEXIBLE PAVEMENTS."

A Thesis
Presented to the Faculty of Graduate Studies
in Partial Fulfilment of the Requirements for
The Degree of **Doctor of Philosophy**
in
the Department of Civil and Geological Engineering

by

Gani Venkataraman GANAPATHY.

VOL.2: DATA AND RESULTS (CHARTS)

February, 1994.

IN-SITU CHARACTERIZATION OF MATERIAL PROPERTIES FOR THE
THE DESIGN AND EVALUATION OF FLEXIBLE PAVEMENTS

BY

GANI VENKATARAMAN GANAPATHY

A Thesis submitted to the Faculty of Graduate Studies of the University of Manitoba in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

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Results of pressure meter tests: Brandon: Runway 08-26

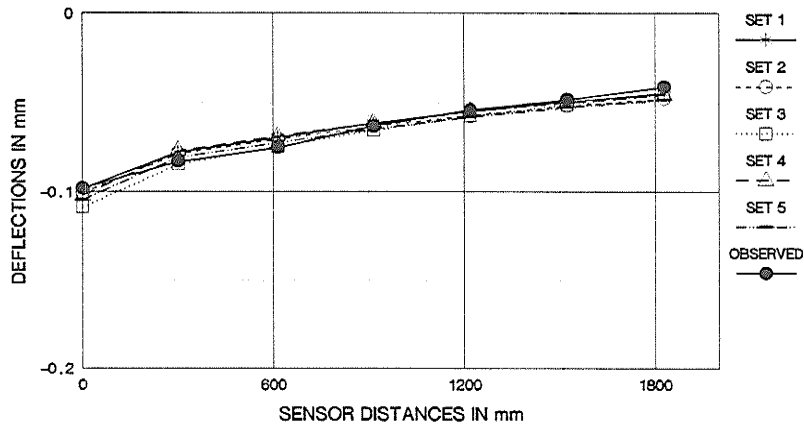
Results of pressure meter tests: St.Andrews: Runway 13-31

Results of pressure meter tests: Regina: Runway 12-30

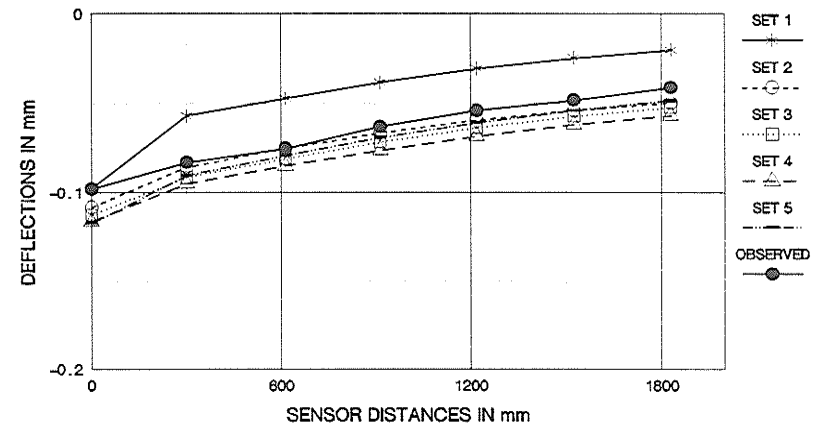
Results of pressure meter tests: Saskatoon: Runway 15-33

Results of pressure meter tests: Thunder Bay: Runway 12-30

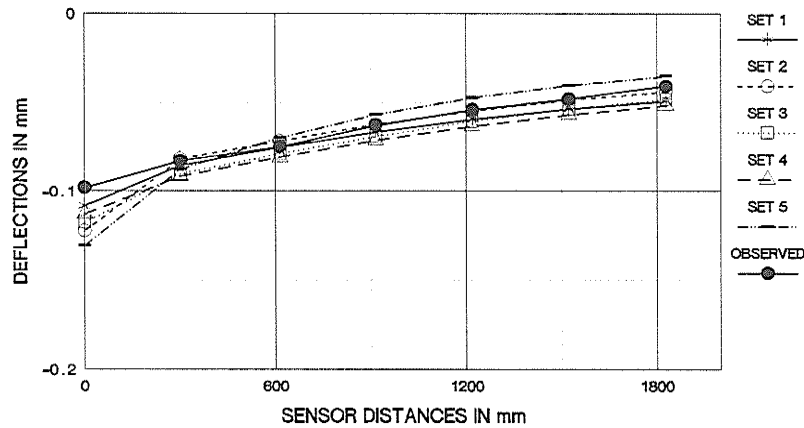
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OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

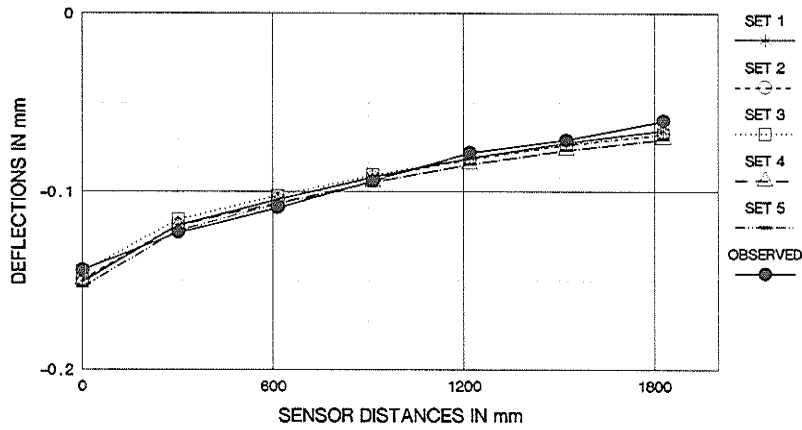


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

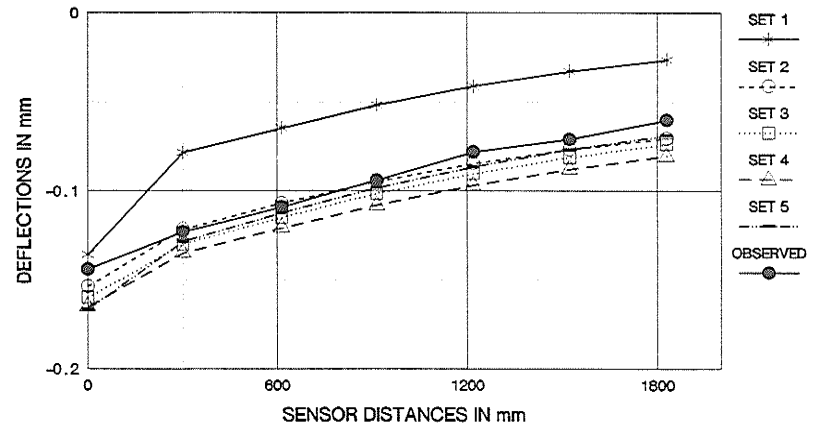
BRANDON: RWY . 08-26: STA . 4 + 950: LOAD 614 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

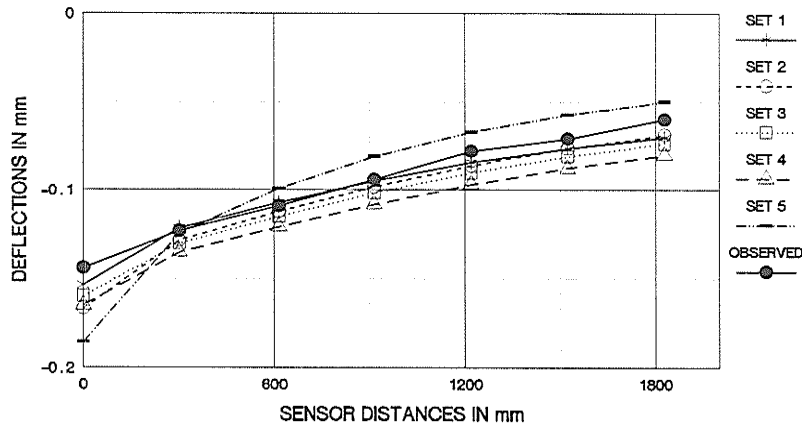
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OPTIMIZING CRITERION: MAXIMUM DEFLECTION



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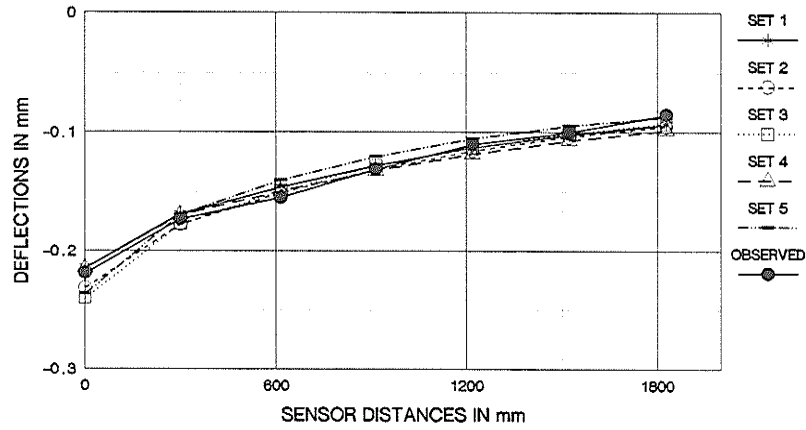


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

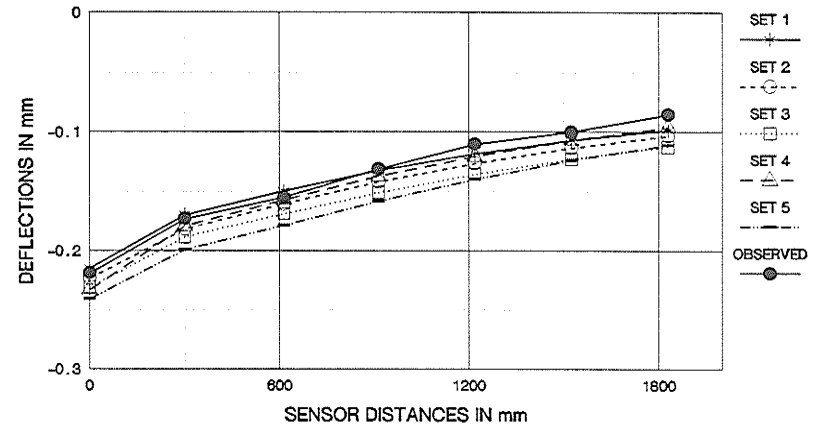
BRANDON: RWY . 08-26: STA . 4 + 950: LOAD 872 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

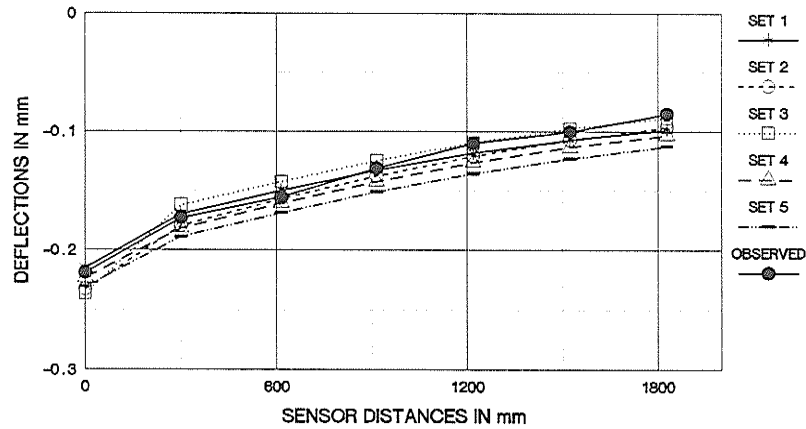
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OPTIMIZING CRITERION: MAXIMUM DEFLECTION



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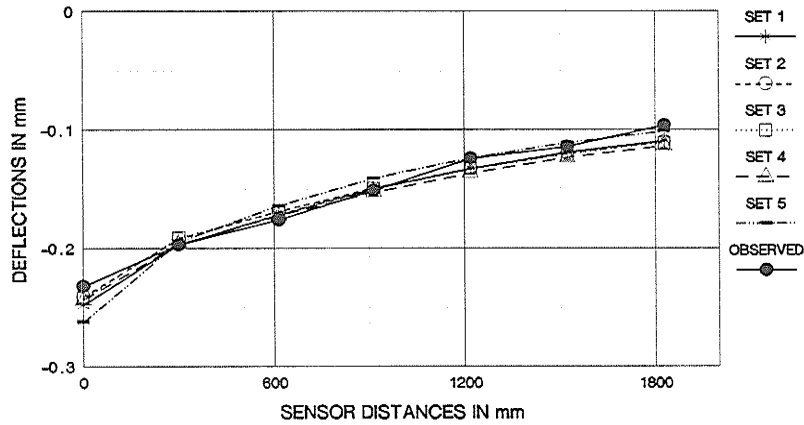


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

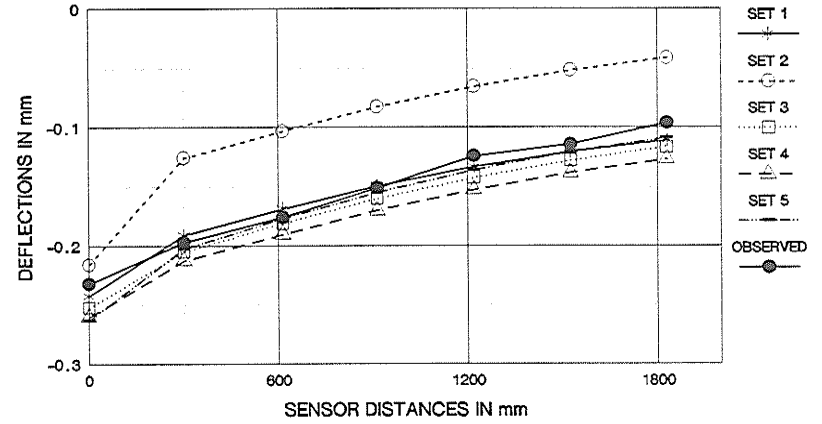
BRANDON: RWY . 08-26: STA . 4 + 950: LOAD 1219 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

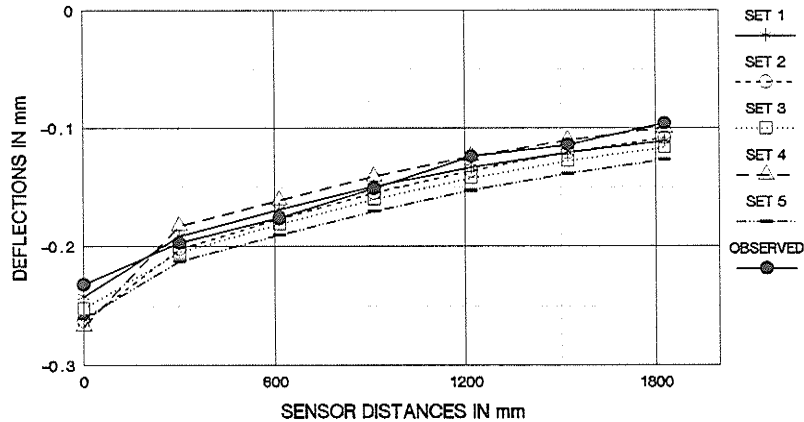
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

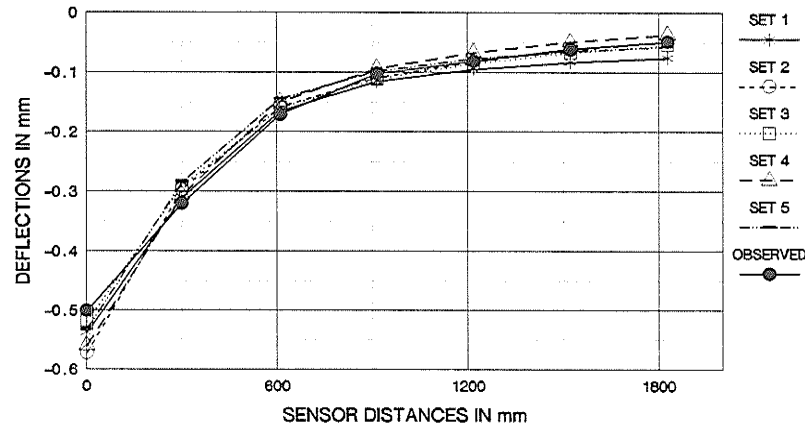


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

BRANDON: RWY . 08-26: STA . 4 + 950: LOAD 1374 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

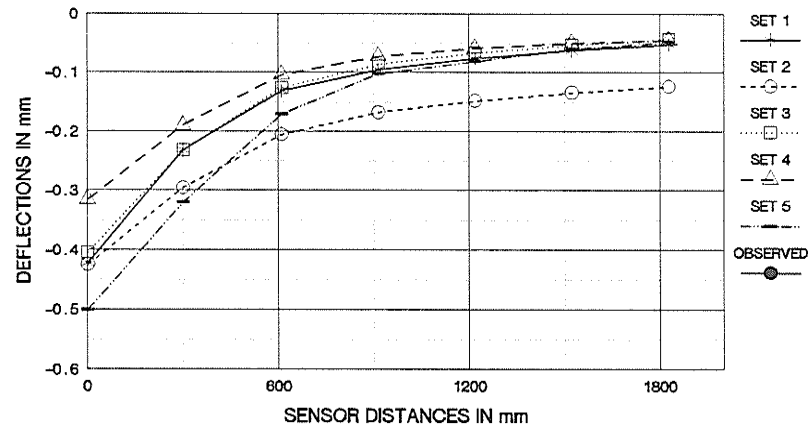
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

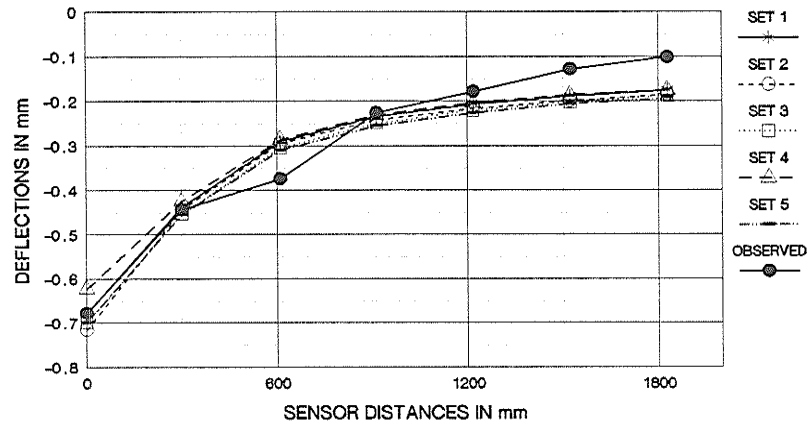


ANSYS FEM ANALYSIS X-ANISOTROPIC MODEL

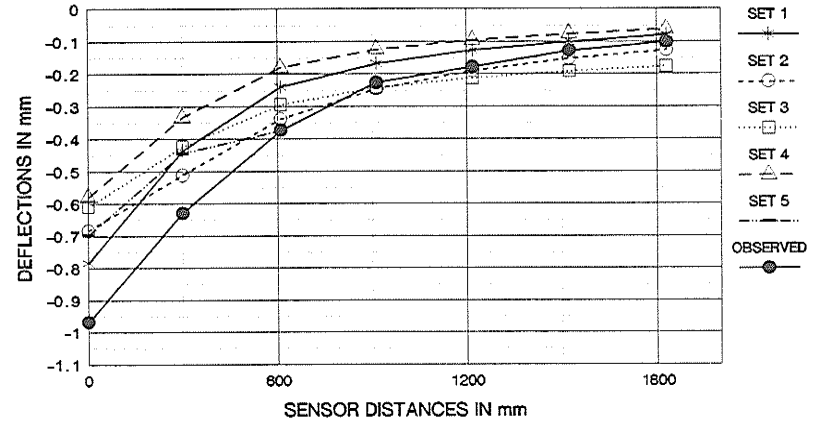
BRANDON: RWY. 08-26: STA. 5 + 300: LOAD 561 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

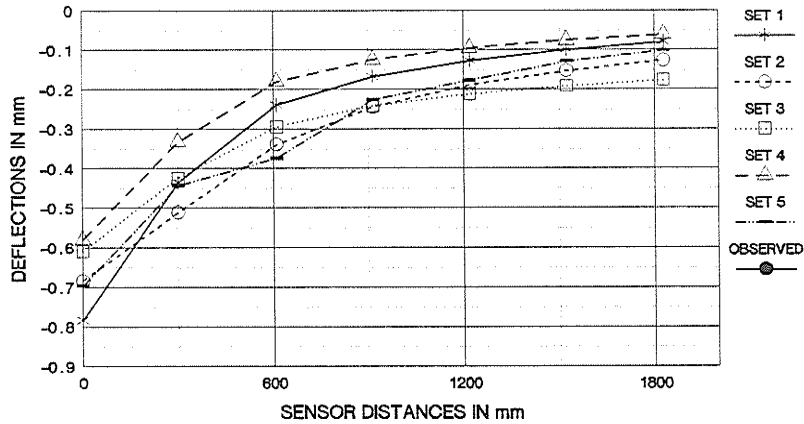
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTIONS



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

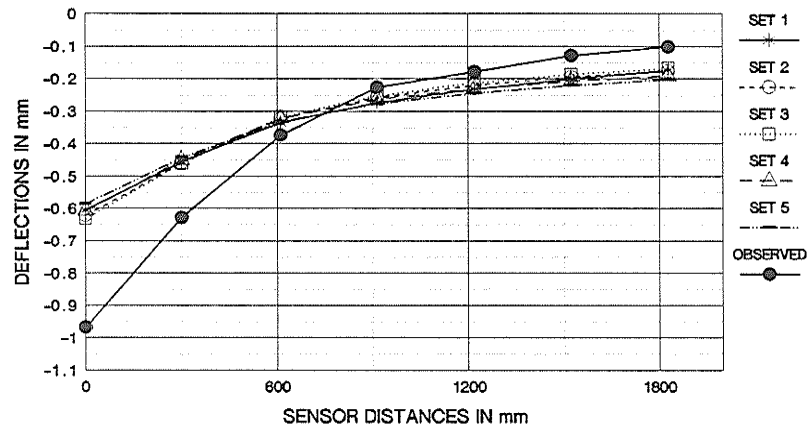


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

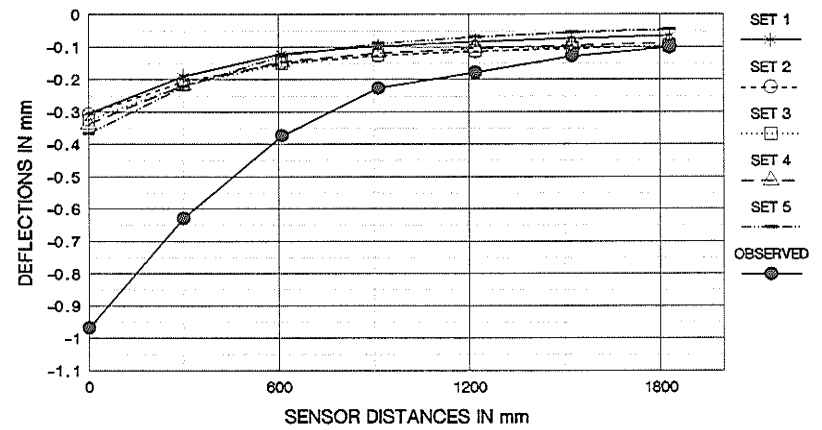
BRANDON: RWY . 08-26: STA. 5 + 300: LOAD 795 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTIONS



OPTIMIZATION CRITERION: RMS VALUE OF DEFLECTION

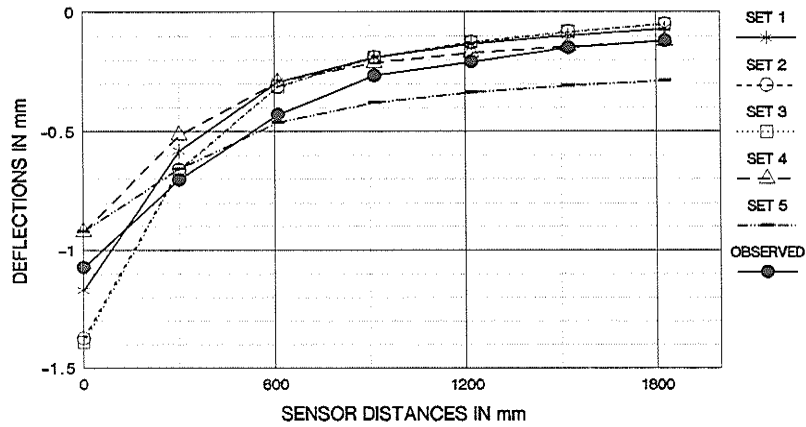
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ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

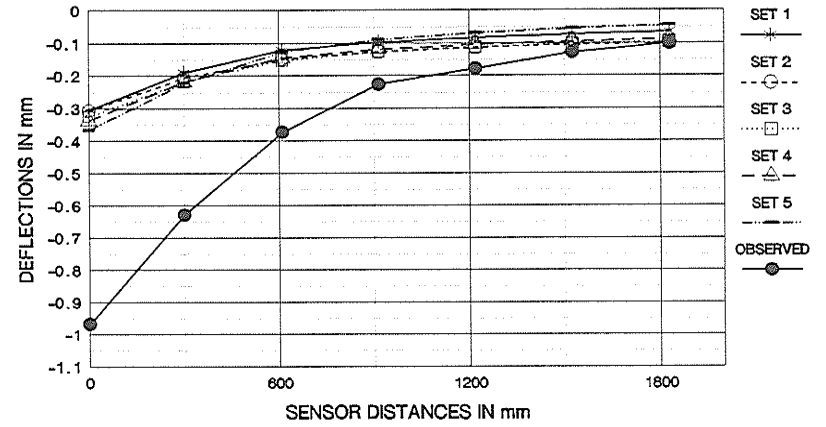
BRANDON: RWY . 08-26: STA . 5 + 300: LOAD 1134 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTIONS



OPTIMIZATION CRITERION: RMS VALUE OF DEFLECTION

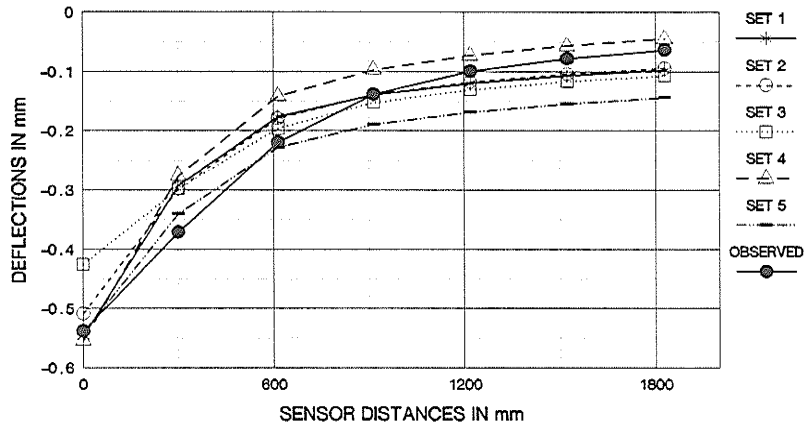
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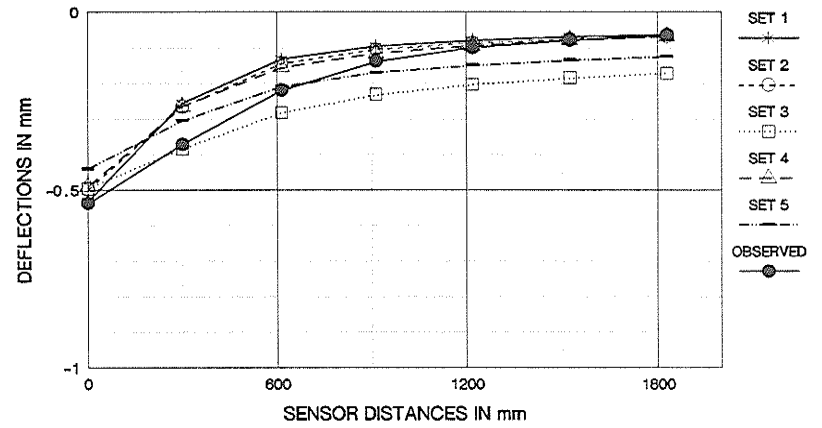
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CALCULATED AND OBSERVED DEFLECTION BASINS

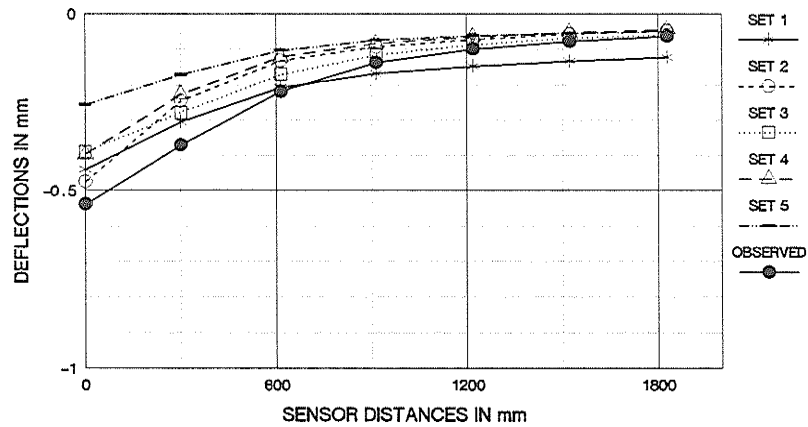
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

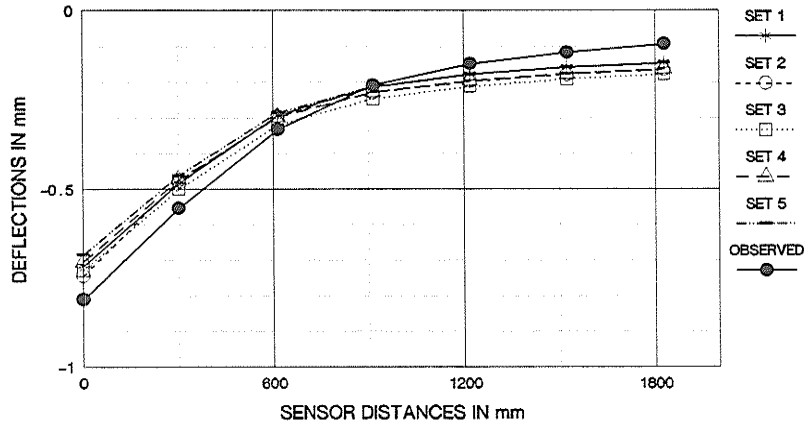


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

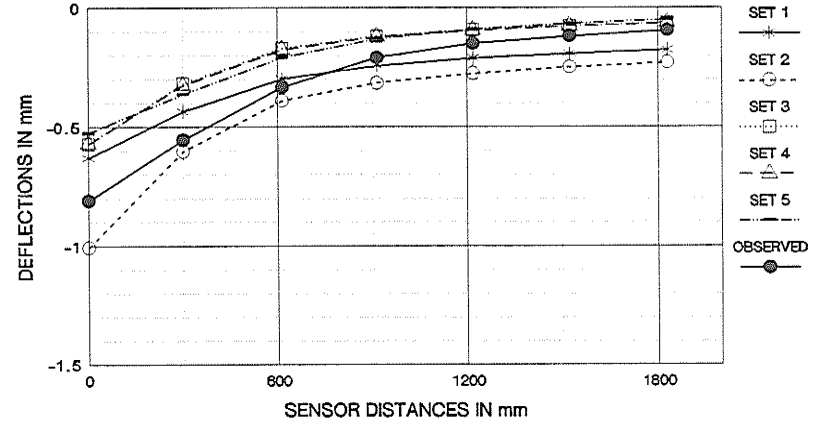
BRANDON: RWY . 08-26: STA . 5 + 400: LOAD 558 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

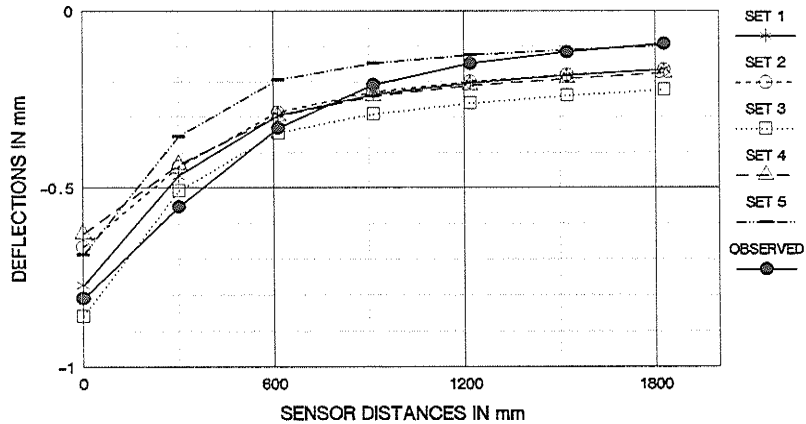
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

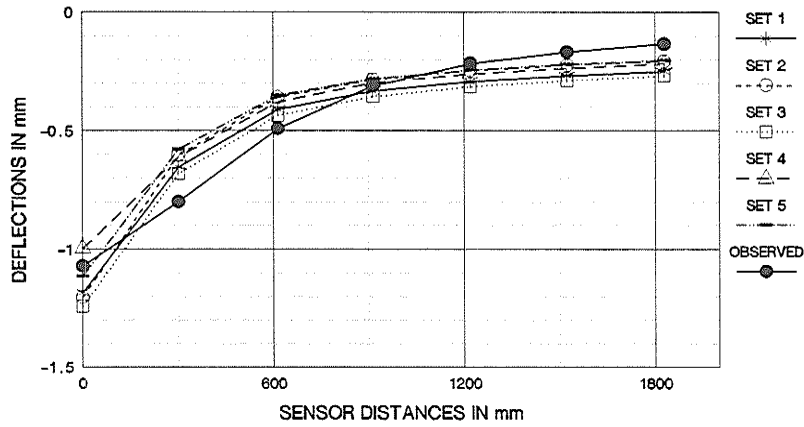


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

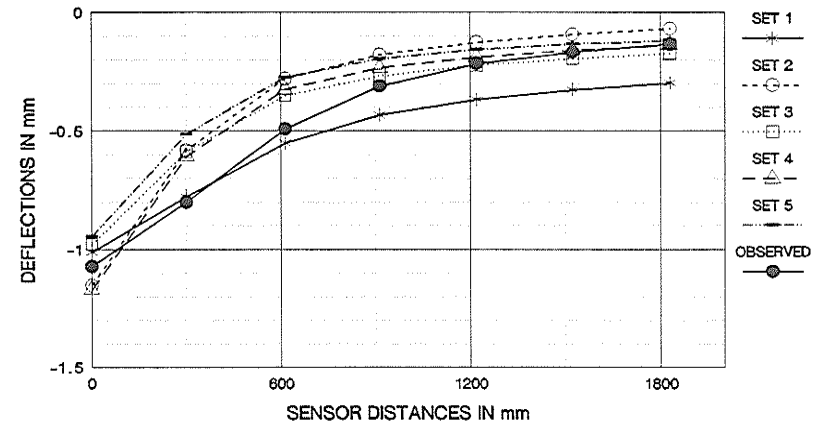
BRANDON: RWY . 08-26: STA . 5 + 400: LOAD 797 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

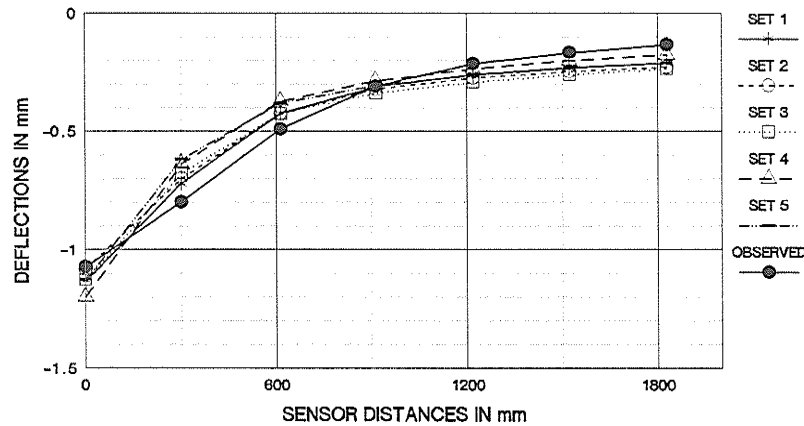
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

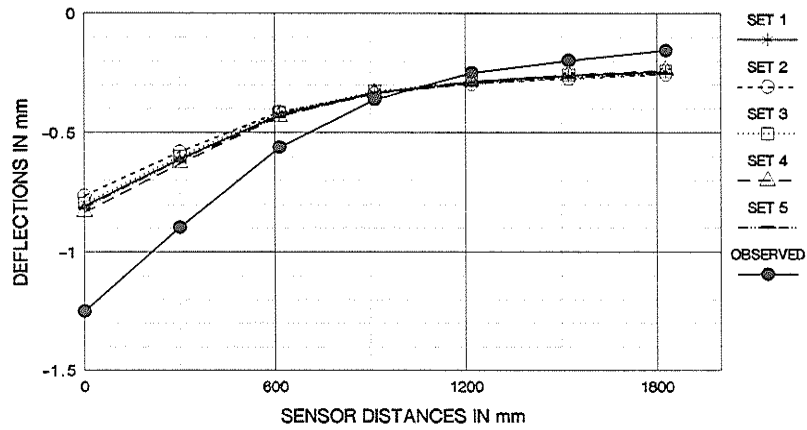


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

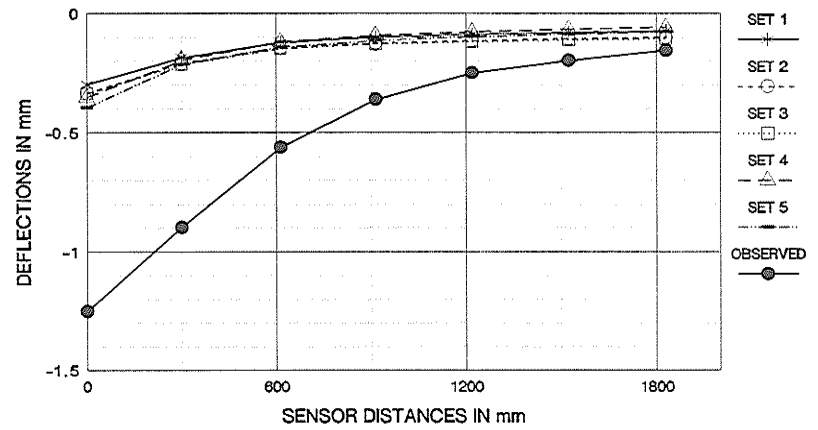
BRANDON: RWY . 08-26: STA . 5 + 400: LOAD 1134 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

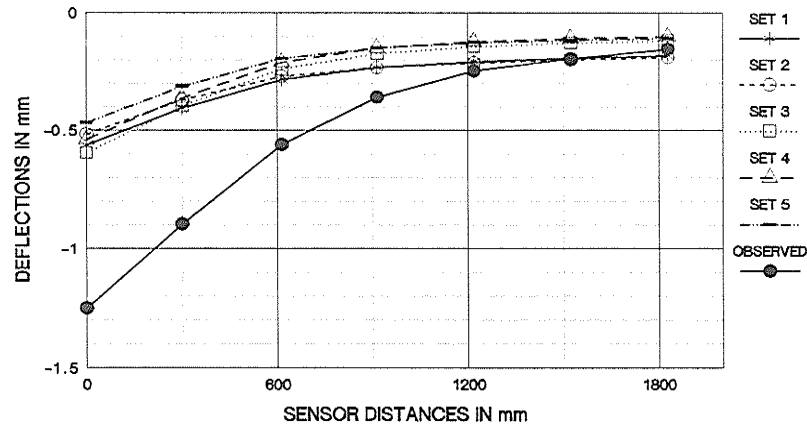
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

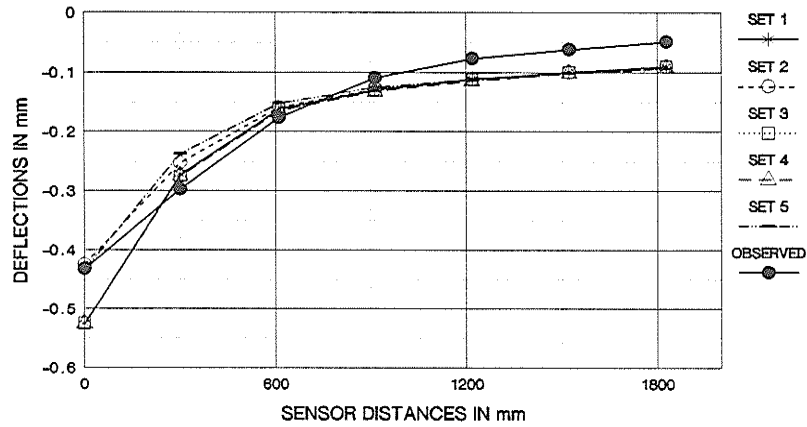


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

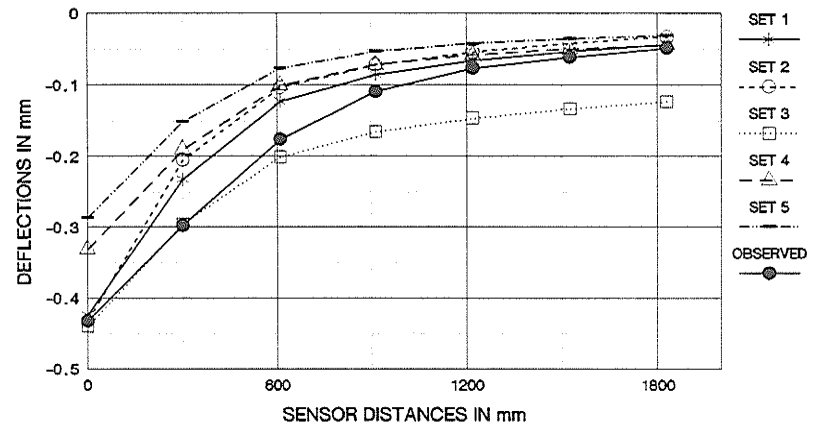
BRANDON: RWY . 08-26: STA . 5 + 400: LOAD 1295 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

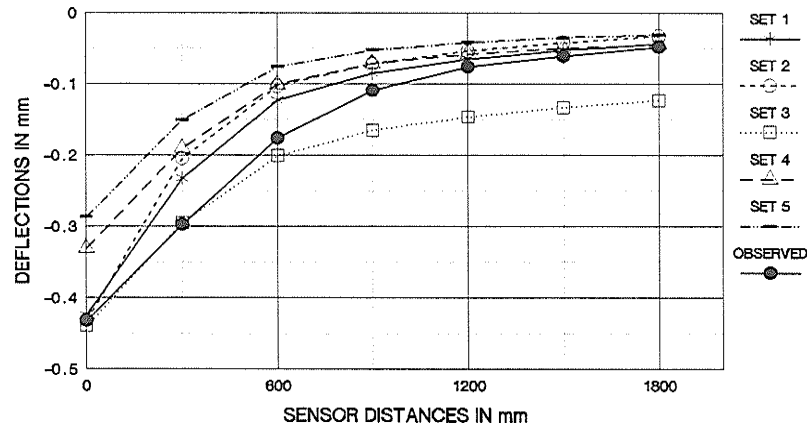
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

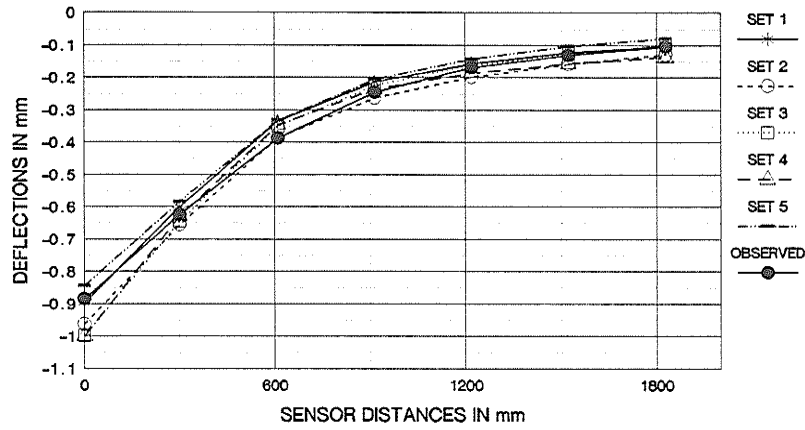


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

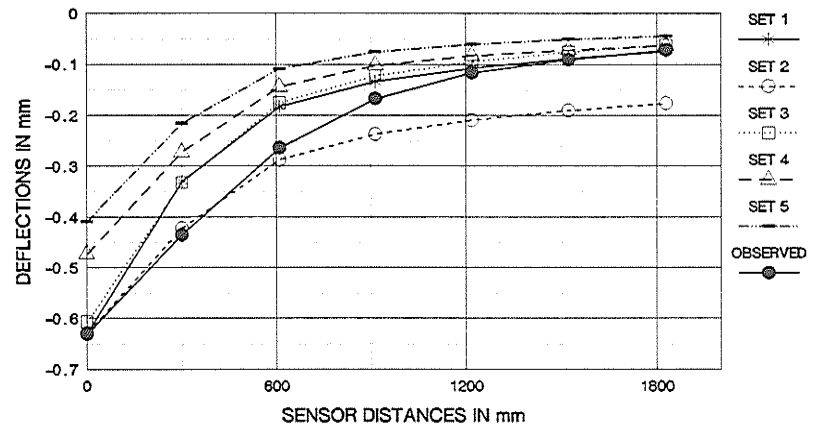
BRANDON: RWY . 08-26: STA . 5 + 500: LOAD 560 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

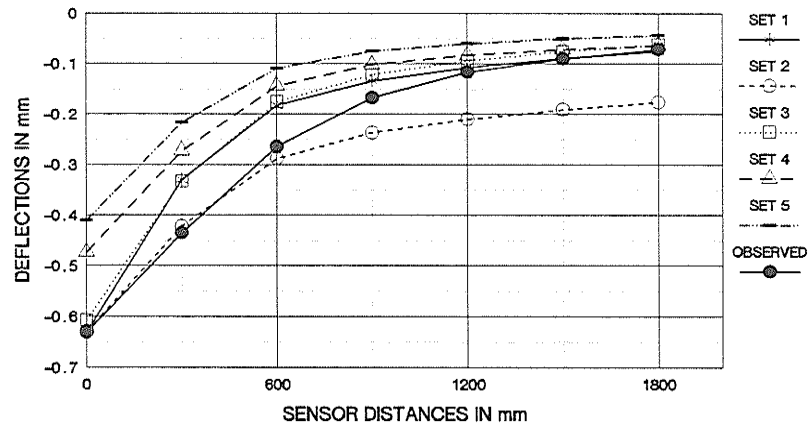
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

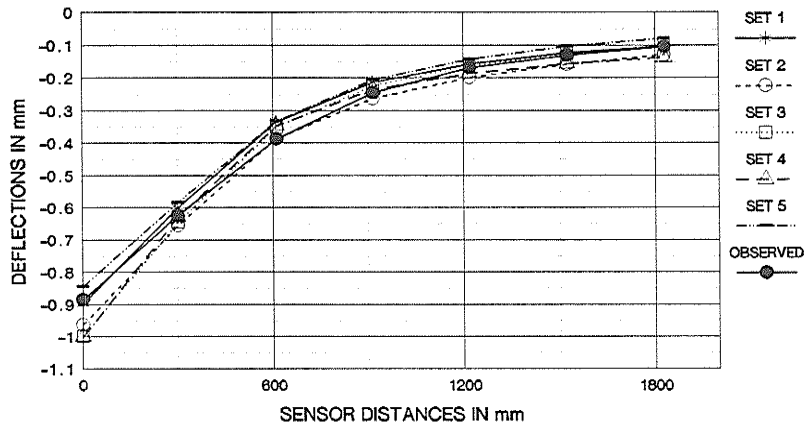


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

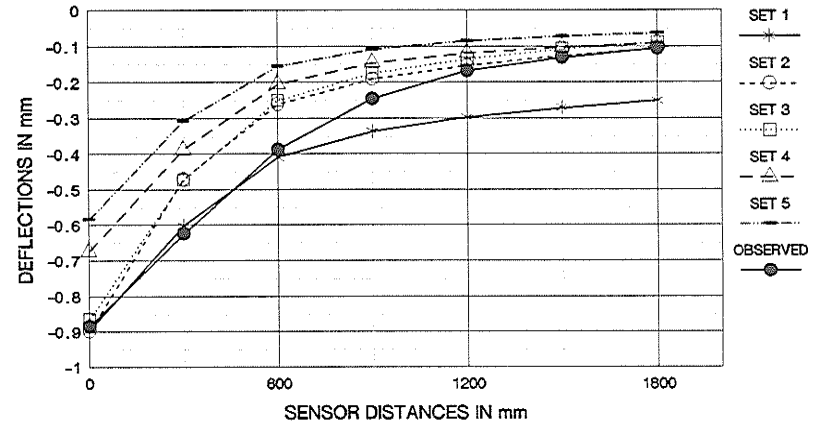
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CALCULATED AND OBSERVED DEFLECTION BASINS

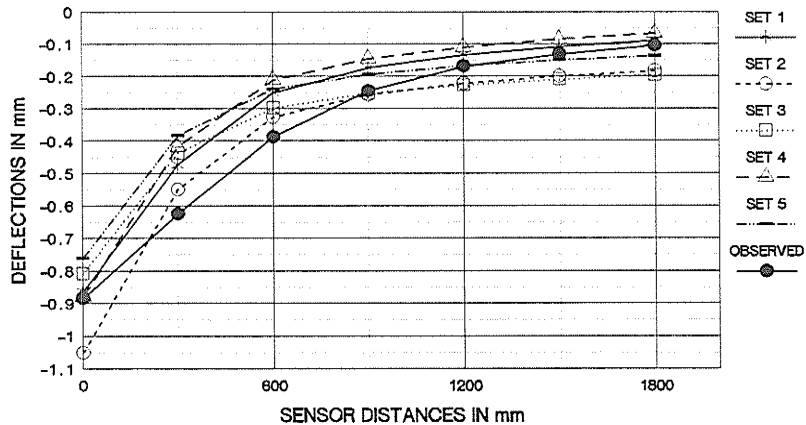
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

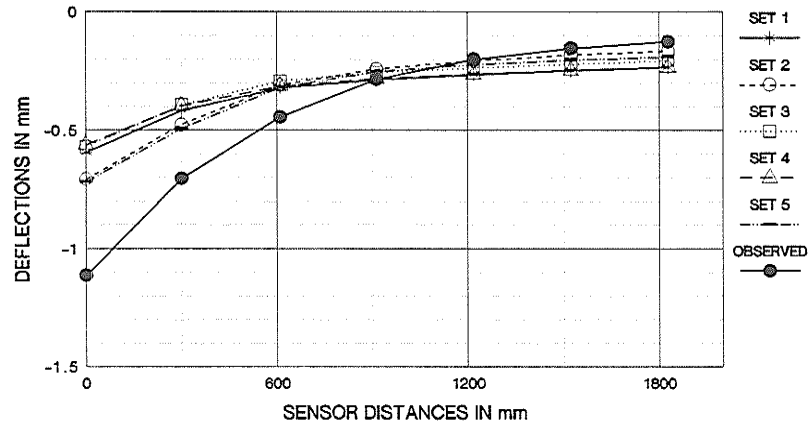


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

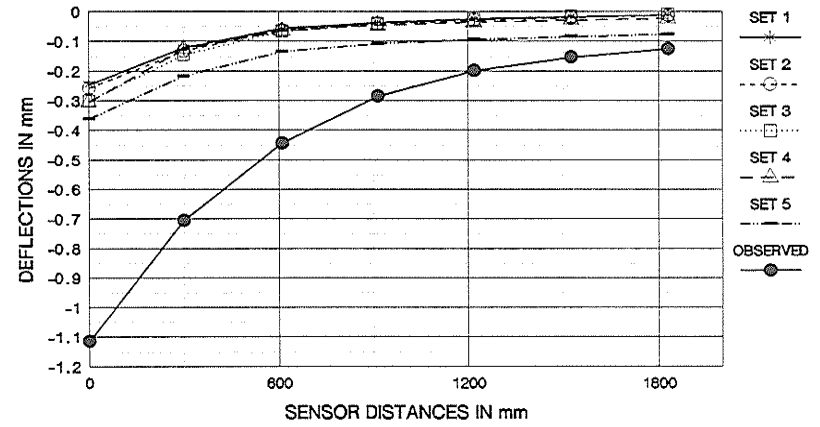
BRANDON: RWY . 08-26: STA. 5 + 500: LOAD 1140 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

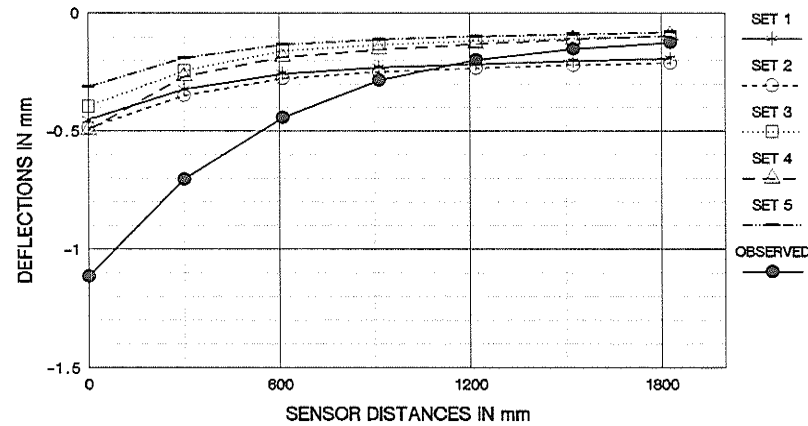
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OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

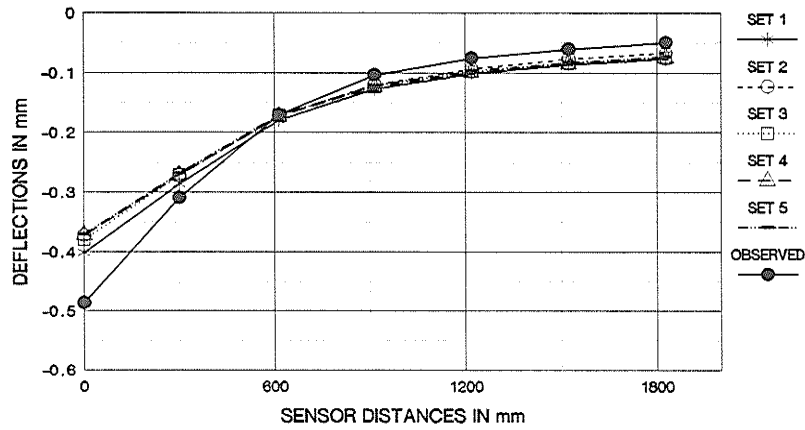


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

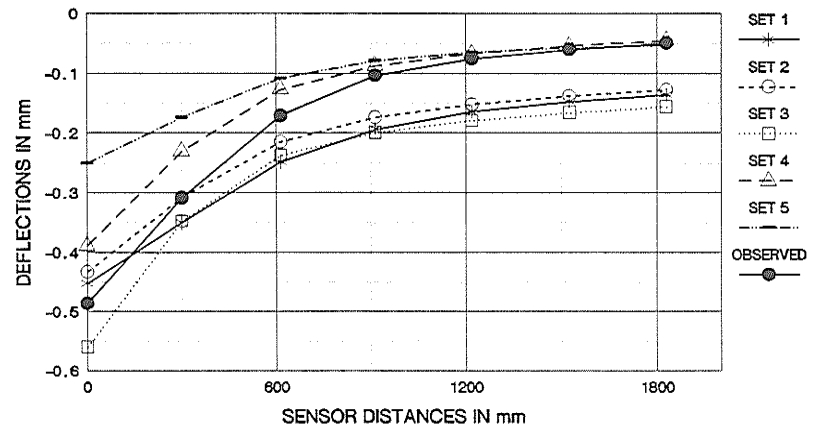
BRANDON: RWY . 08-26: STA . 5 + 500: LOAD 1304 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

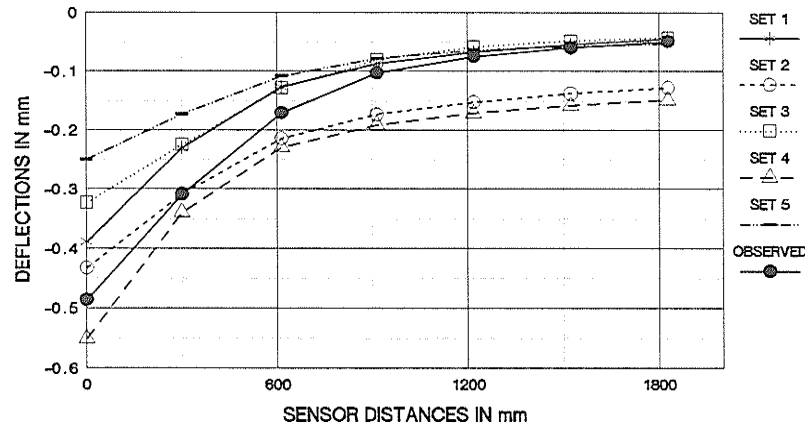
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

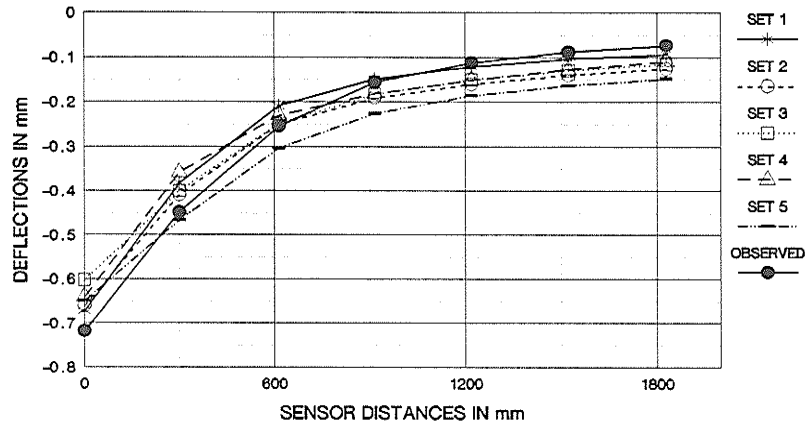


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

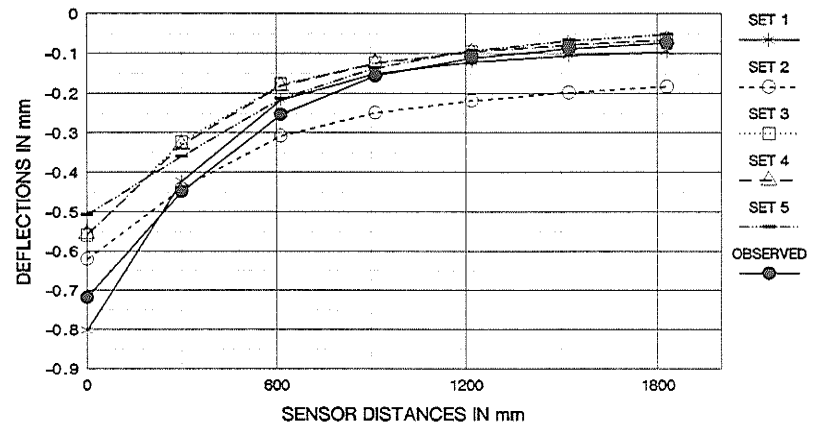
BRANDON: RWY . 08-26: STA . 5 + 600: LOAD 578 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

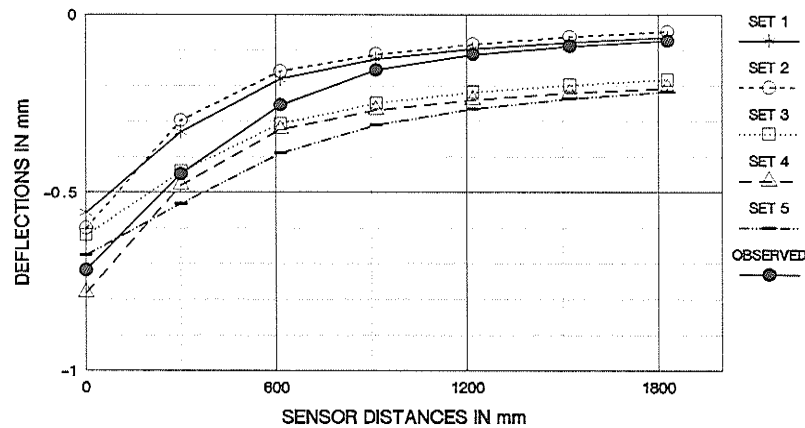
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

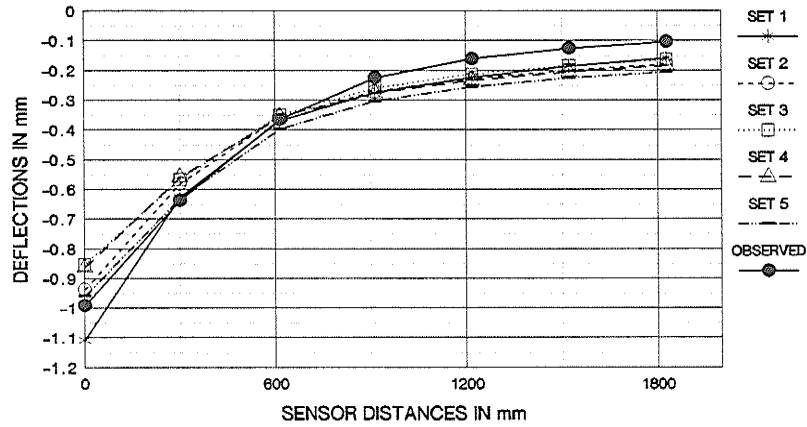


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

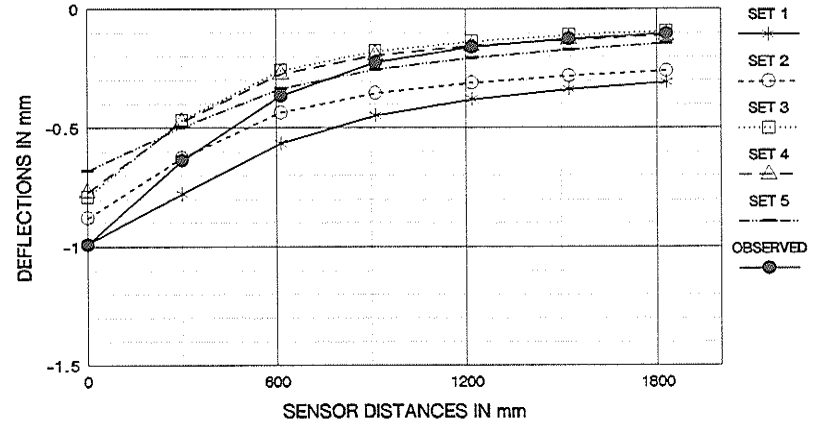
BRANDON: RWY . 08-26: STA . 5 + 600: LOAD 828 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

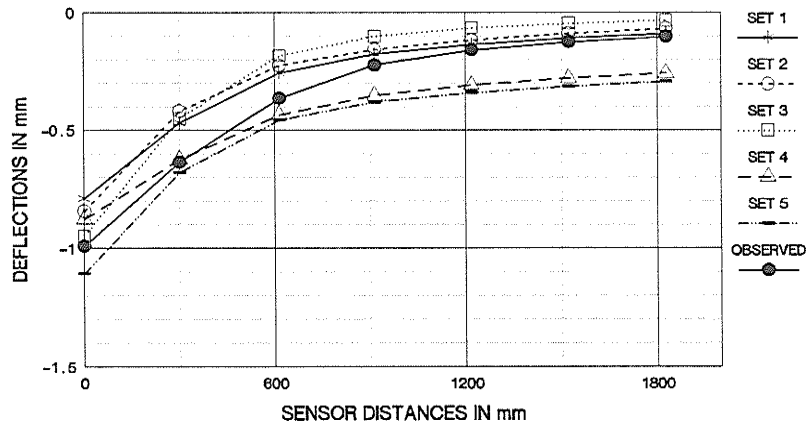
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OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

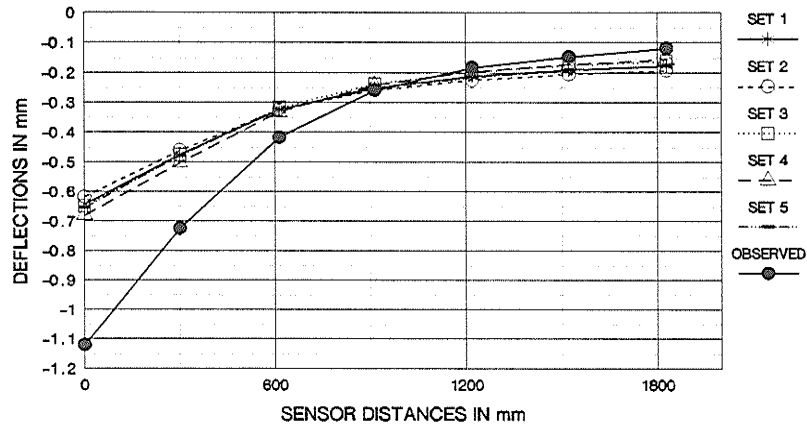


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

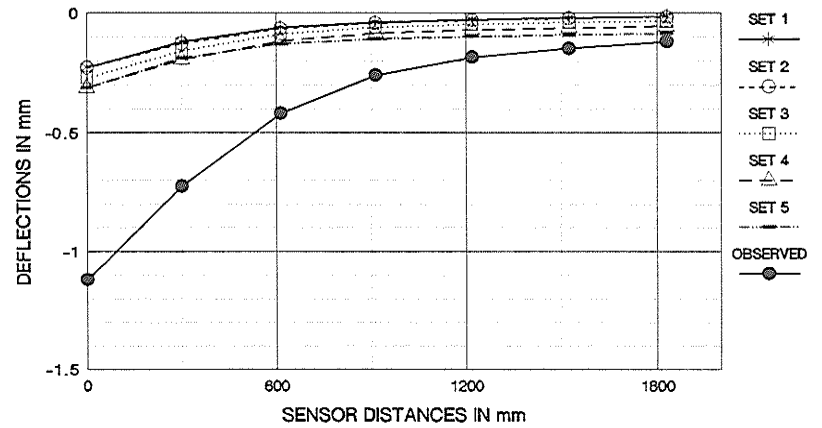
BRANDON: RWY . 08-26: STA . 5 + 600: LOAD 1173 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

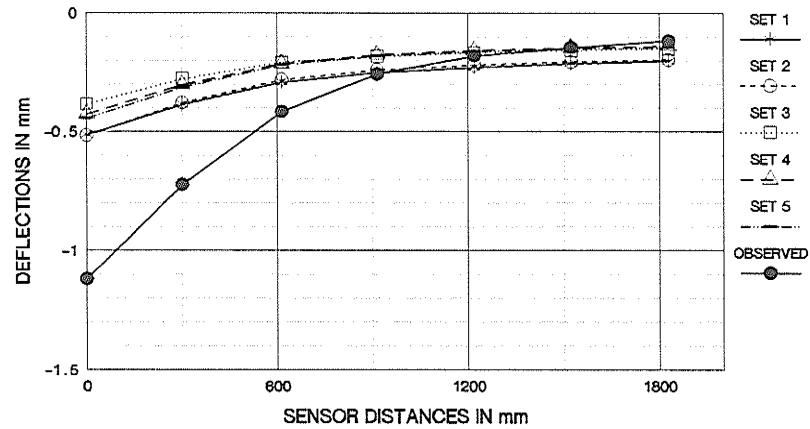
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

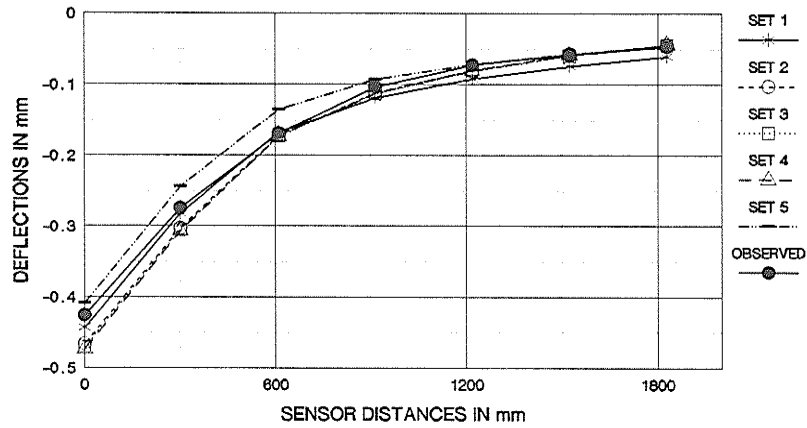


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

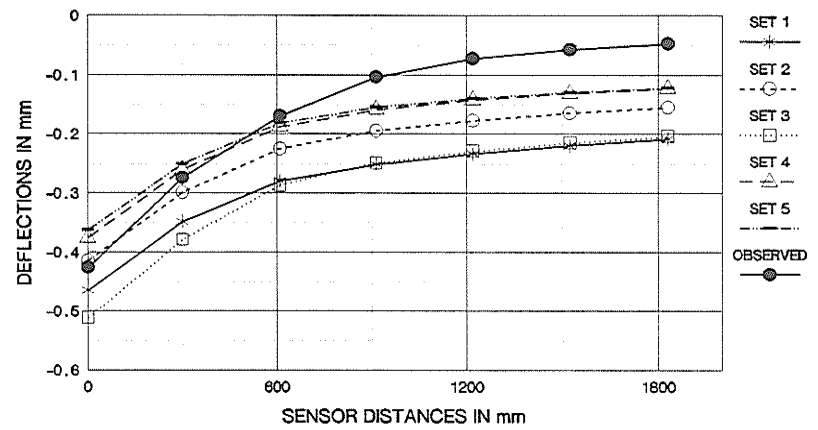
BRANDON: RWY . 08-26: STA . 5 + 600: LOAD 1347 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

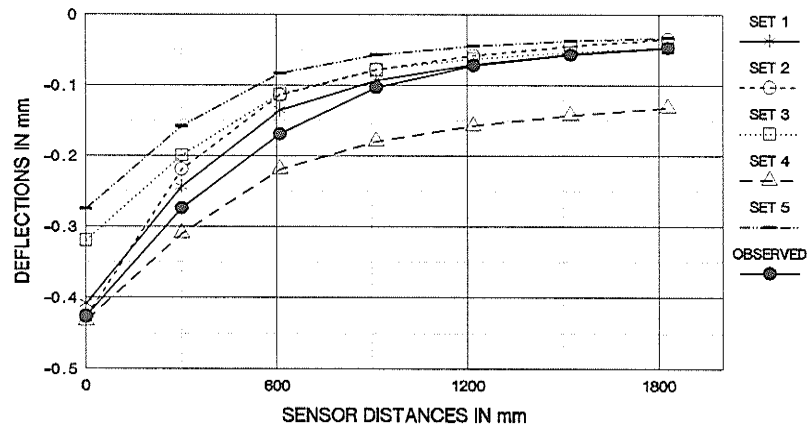
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

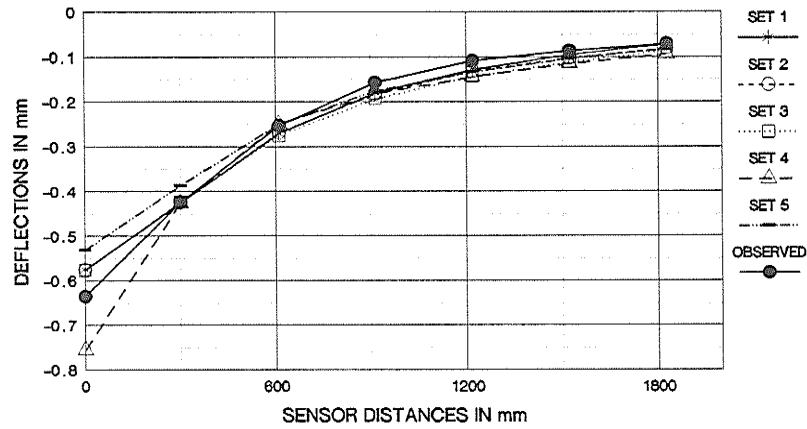


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

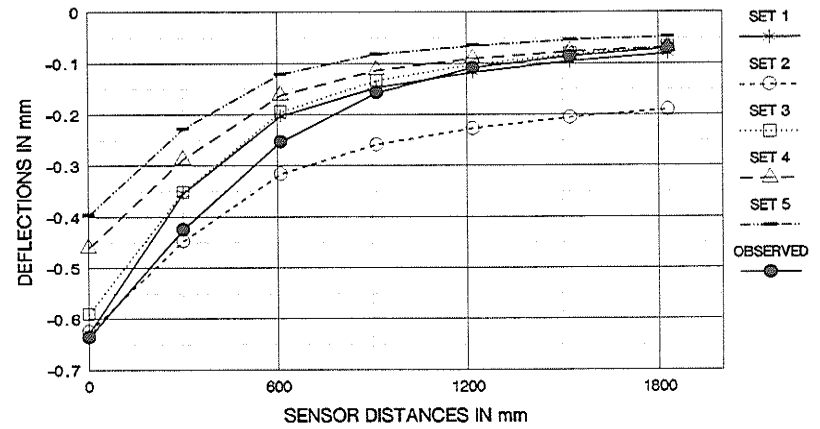
BRANDON: RWY . 08-26: STA . 5 + 700: LOAD 599 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

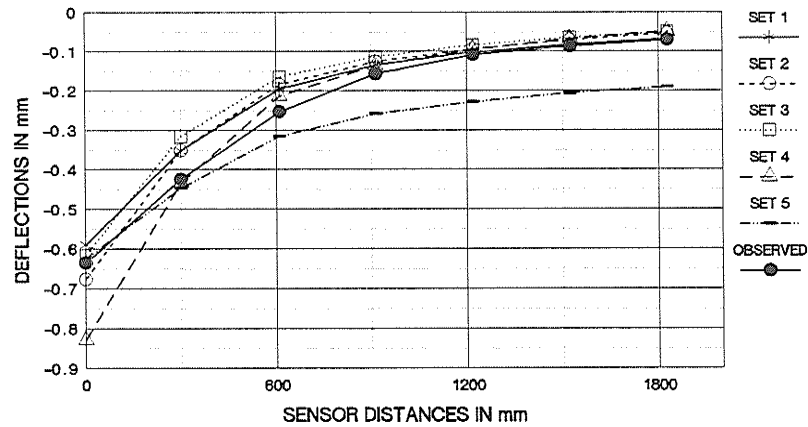
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

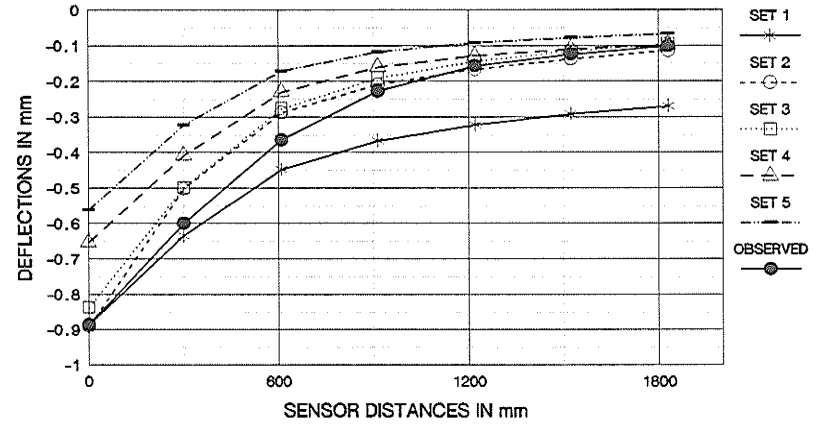
BRANDON: RWY. 08-26: STA. 5 + 700: LOAD 864 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

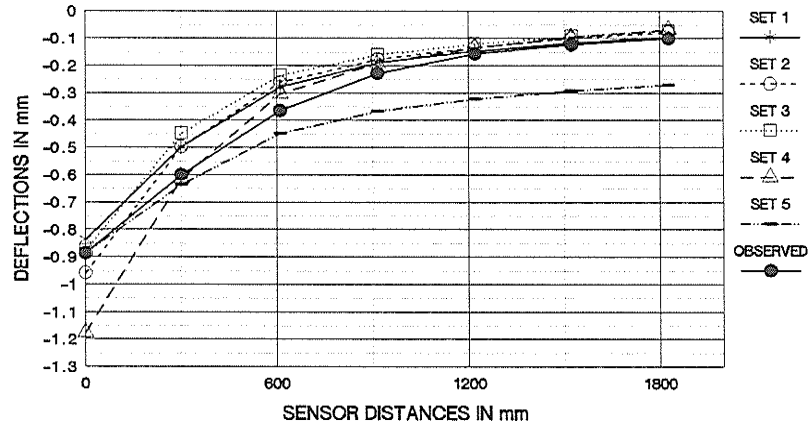
OPTIMIZATION CRITERION: "AREA" OF DEFLECTION BASIN

COMPUTATION MISSED

OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

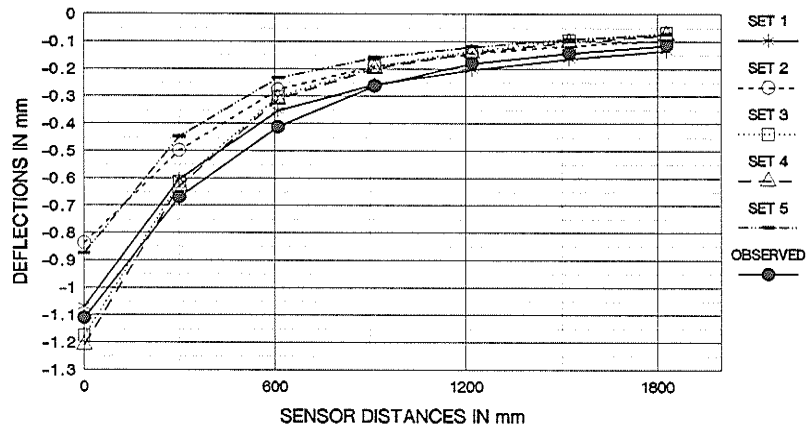


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

BRANDON: RWY . 08-26: STA . 5 + 700: LOAD 1173 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

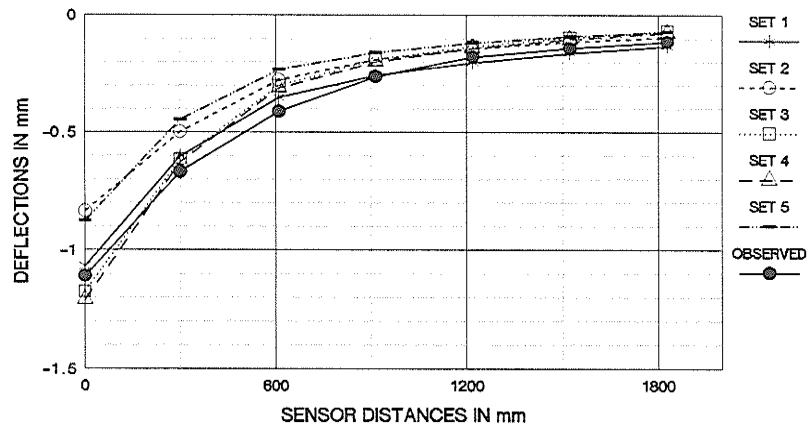
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

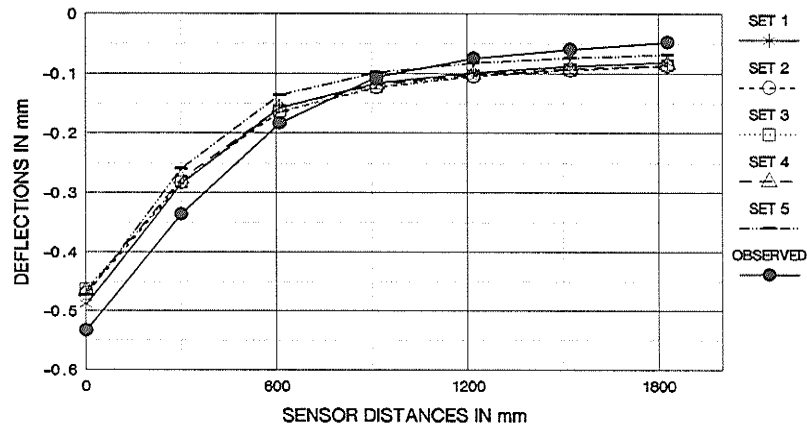


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

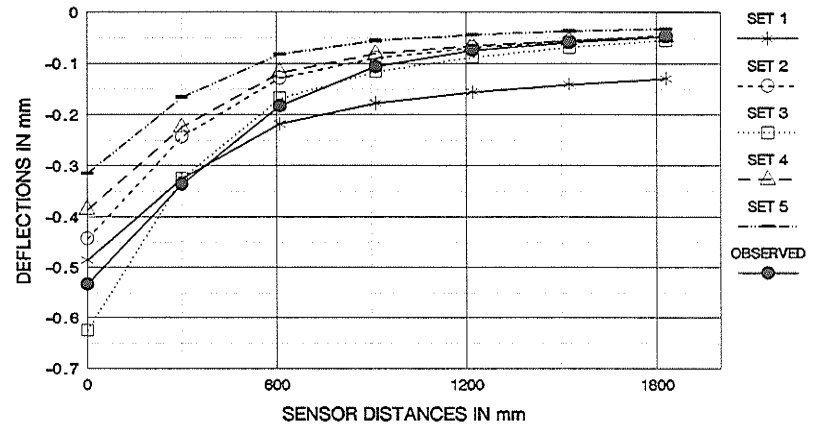
BRANDON: RWY . 08-26: STA . 5 + 700: LOAD 1402 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

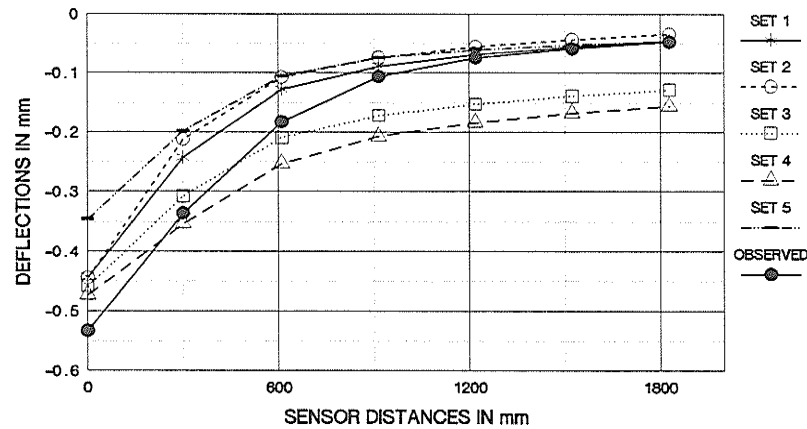
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

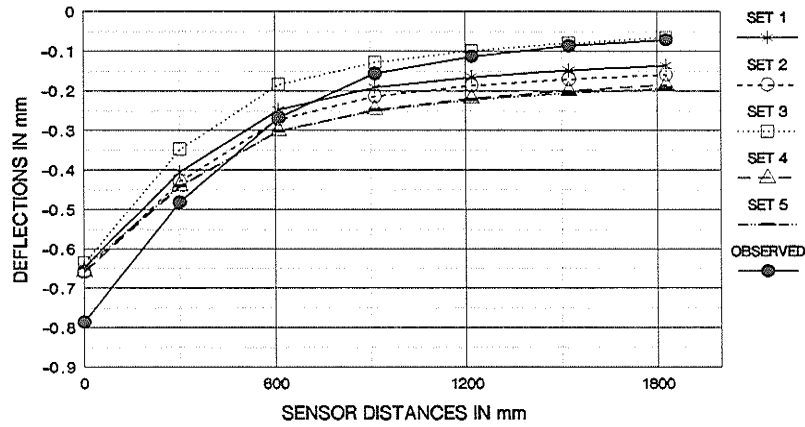


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

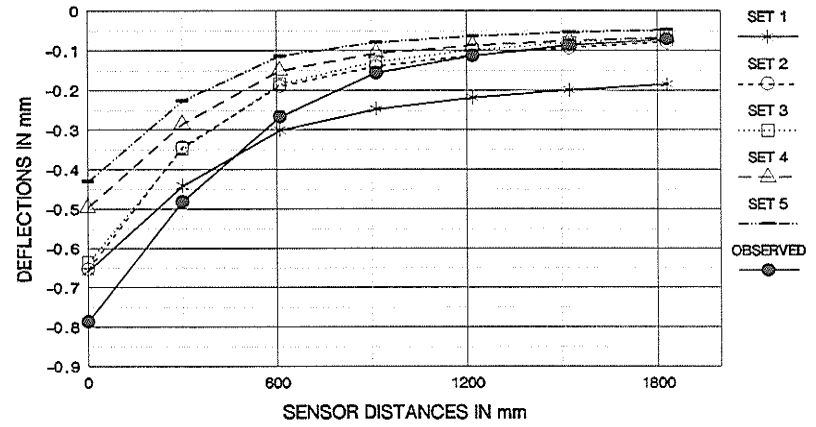
BRANDON: RWY . 08-26: STA . 5 + 800: LOAD 586 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

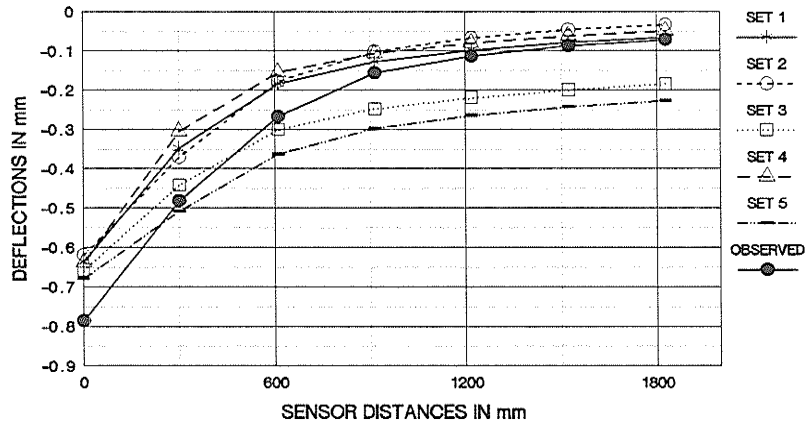
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

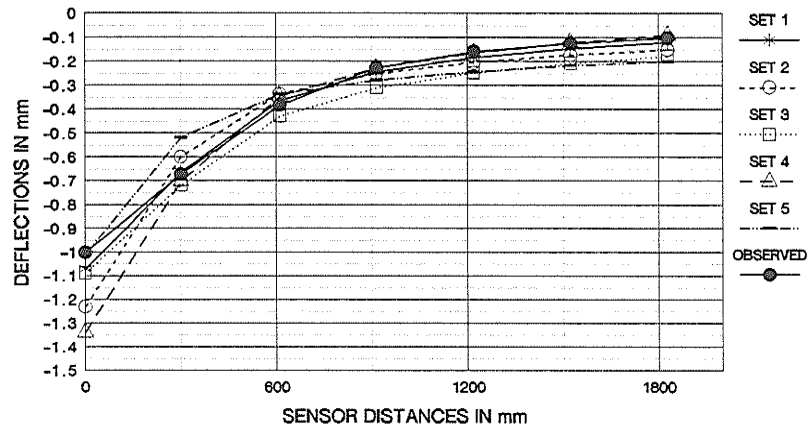


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

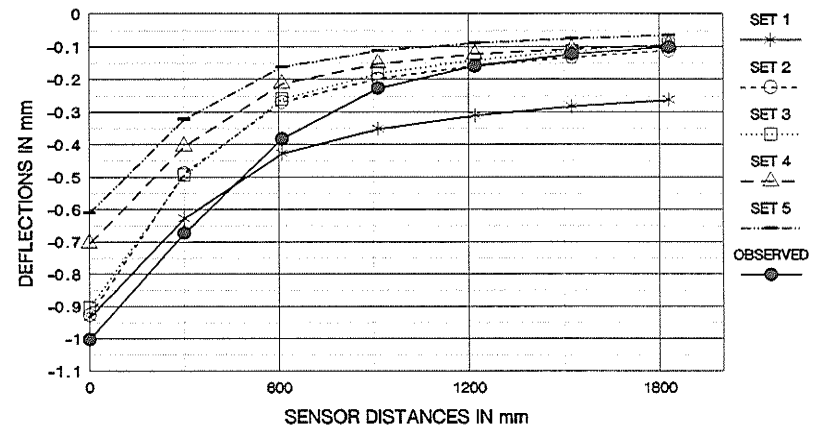
BRANDON: RWY . 08-26: STA . 5 + 800: LOAD 841 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

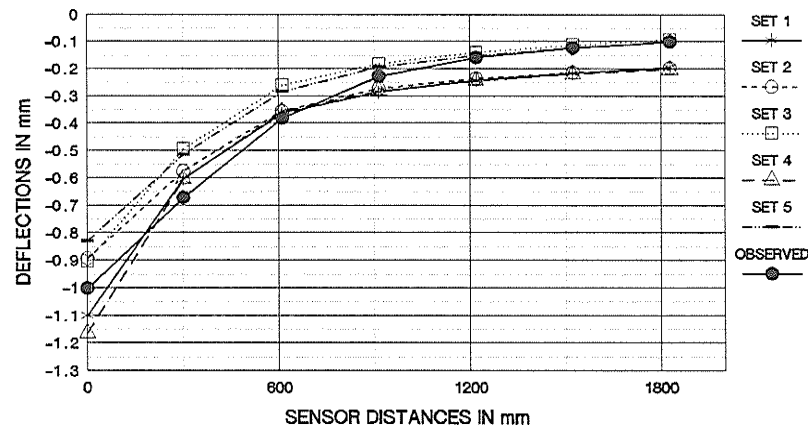
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTIONS



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

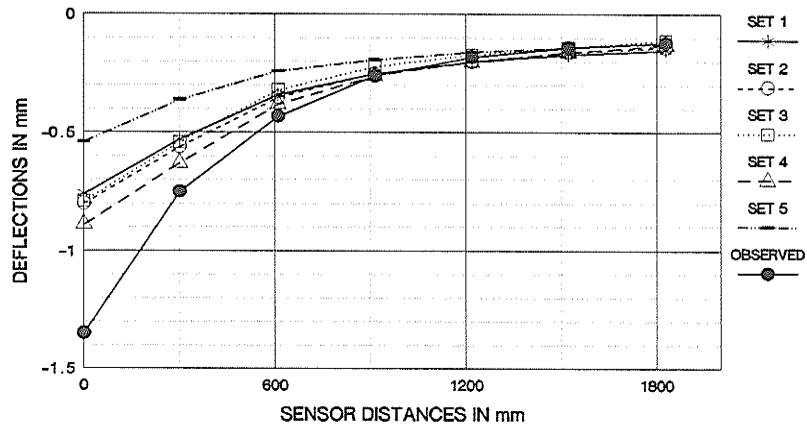


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

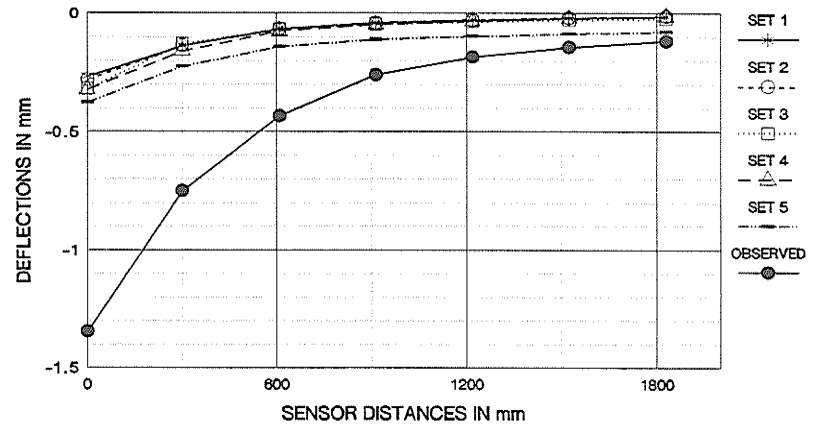
BRANDON; RWY . 08-26; STA . 5 + 800; LOAD 1194 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

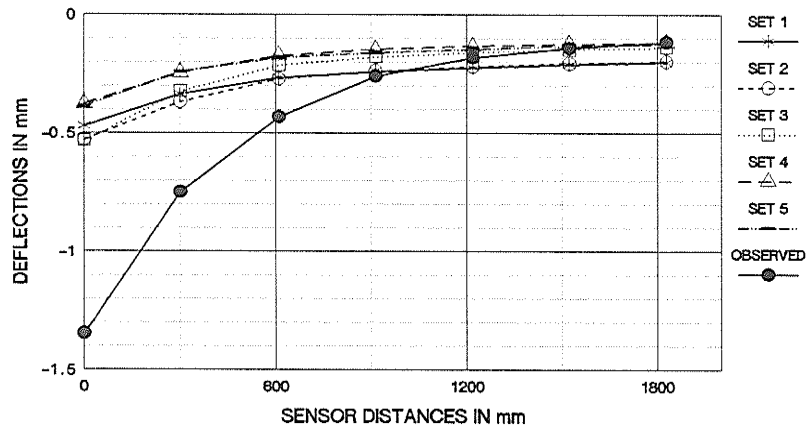
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

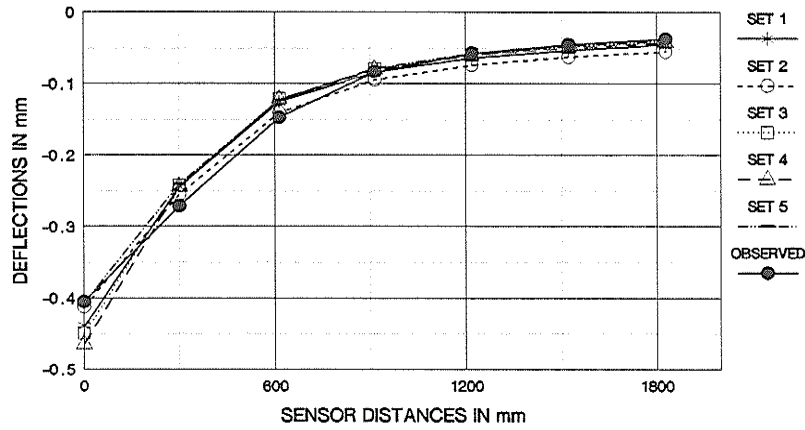


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

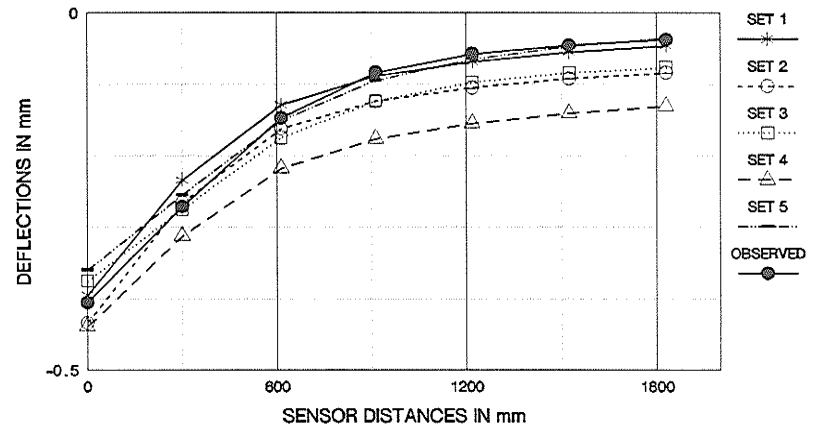
BRANDON: RWY . 08-26: STA. 5 + 800: LOAD 1363 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

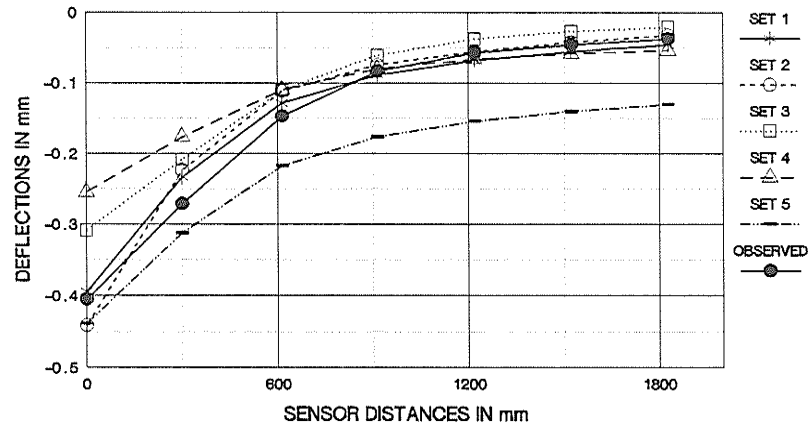
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

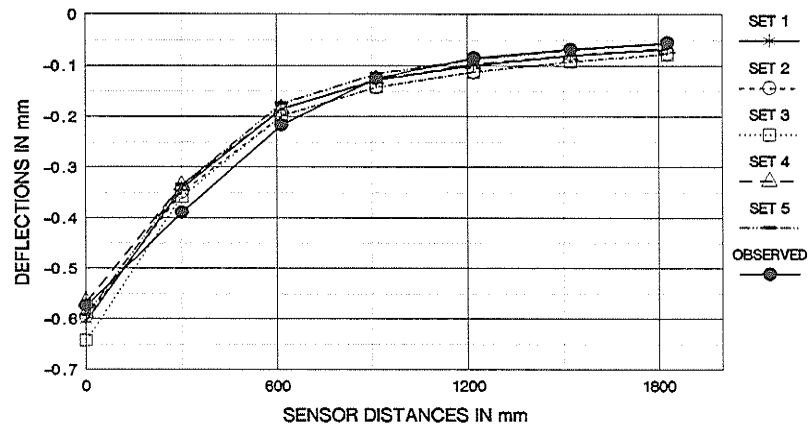


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

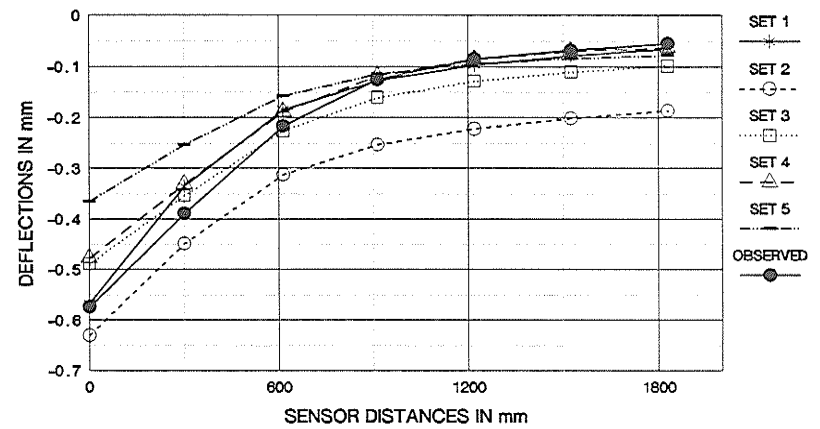
BRANDON: RWY. 08-26: STA. 5 + 900: LOAD 588 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

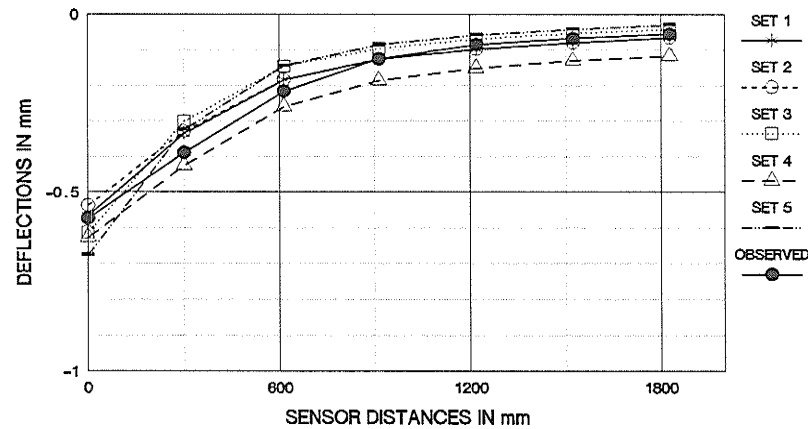
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

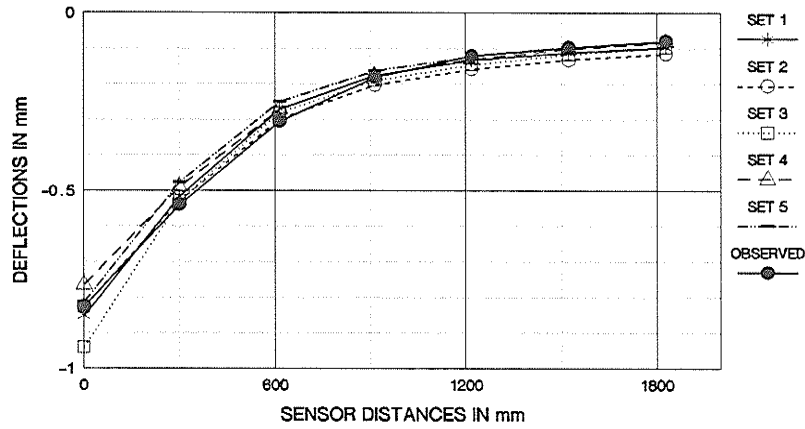


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

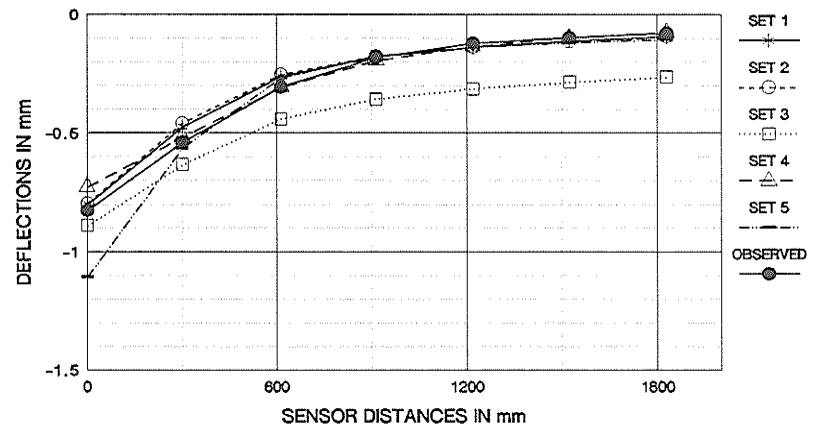
BRANDON: RWY. 08-26: STA. 5 + 900: LOAD 844 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

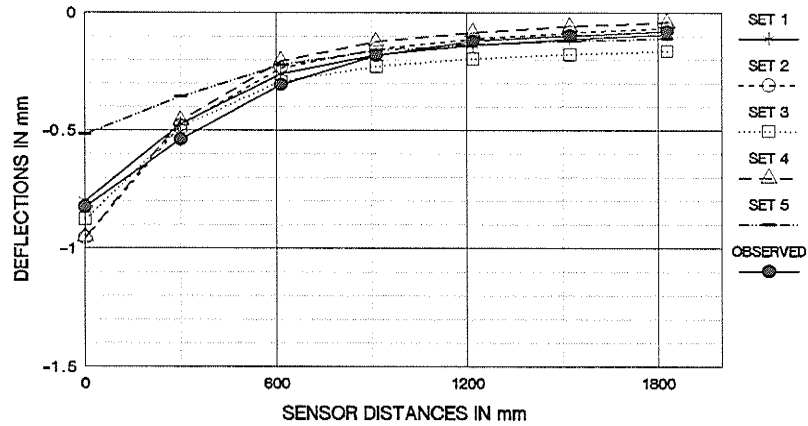
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

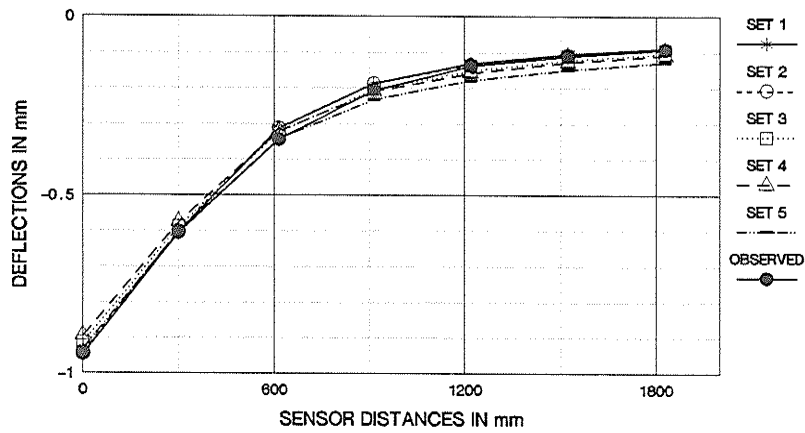


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

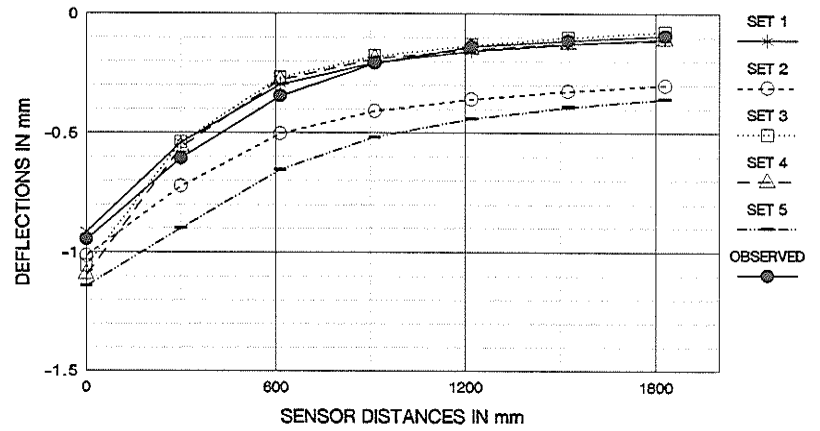
BRANDON: RWY . 08-26: STA . 5 + 900: LOAD 1192 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

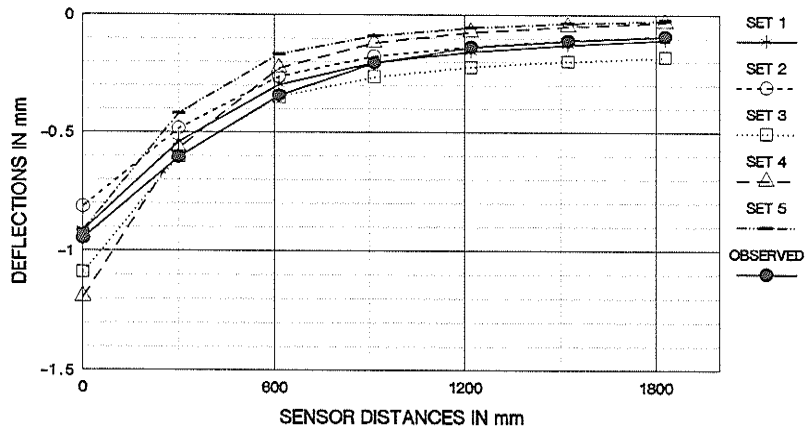
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

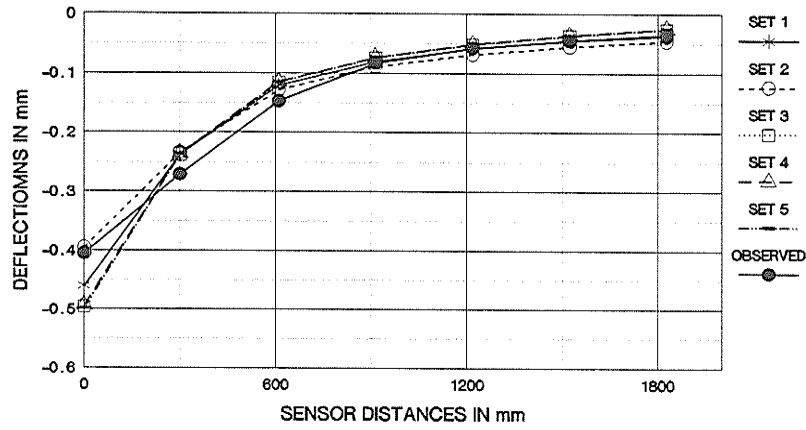


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

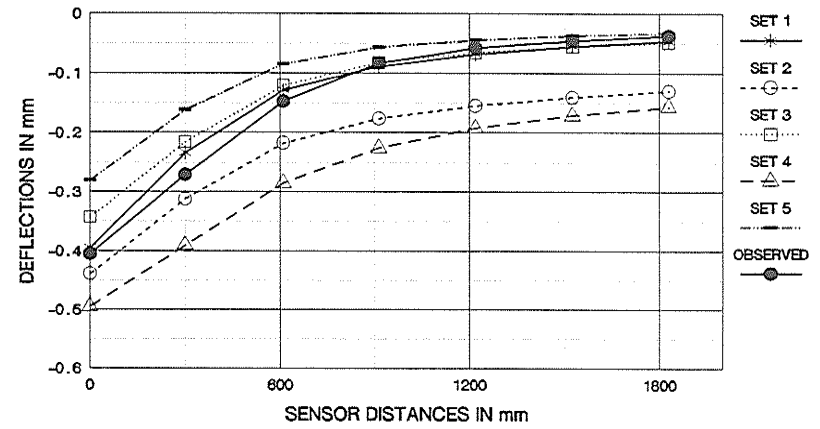
BRANDON: RWY . 08-26: STA . 5 + 900: LOAD 1360 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

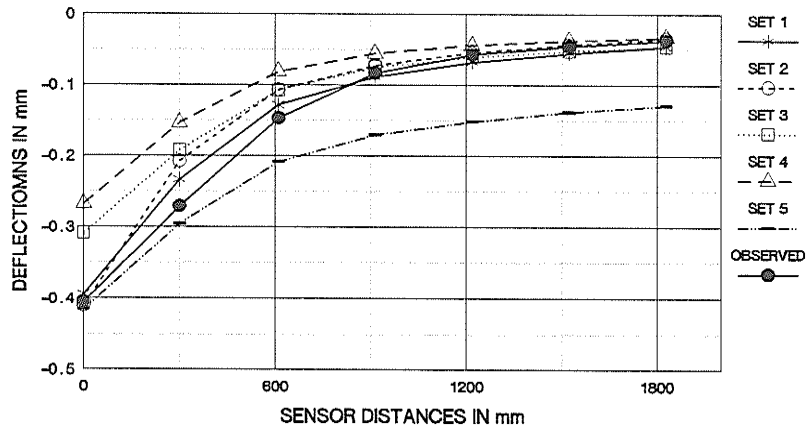
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

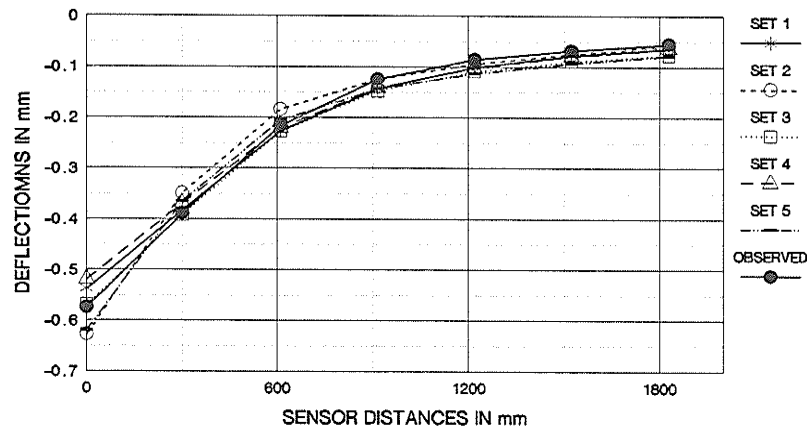


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

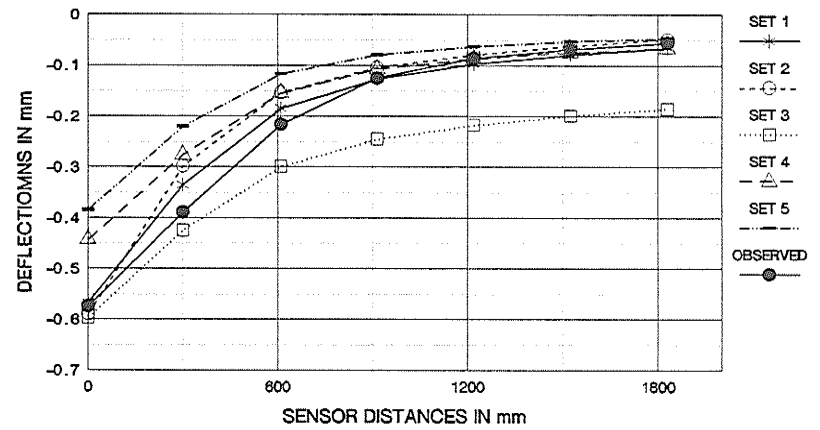
BRANDON: RWY. 08-26: STA. 5 + 900: LOAD 588 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

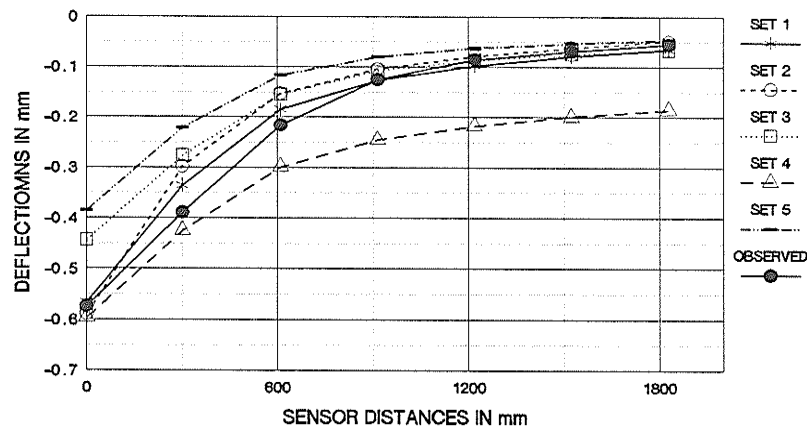
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

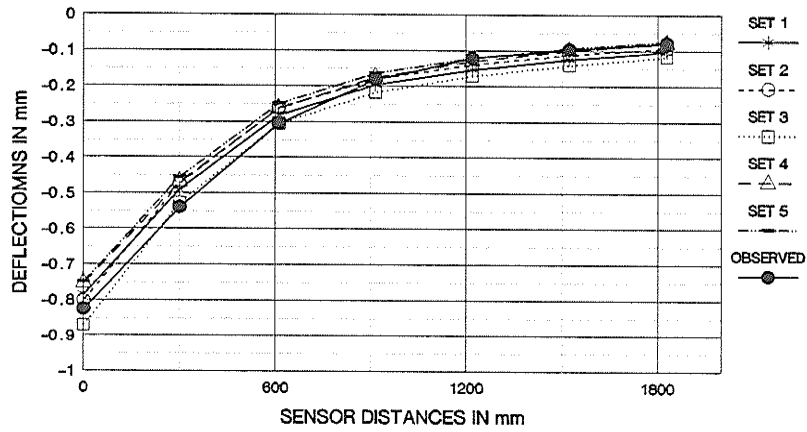


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

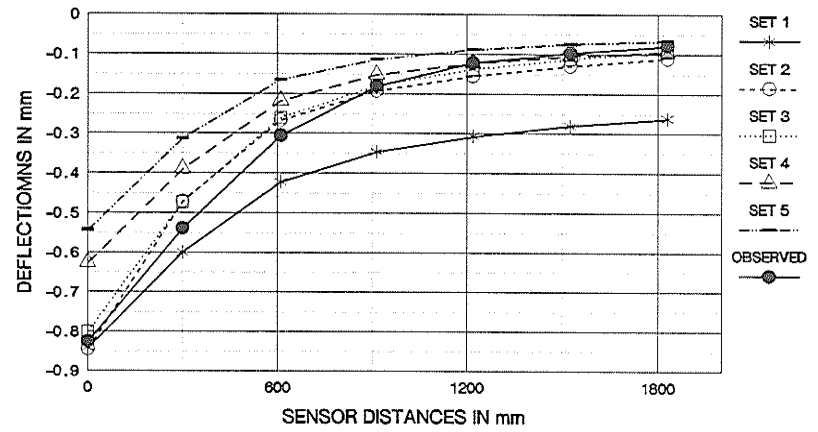
BRANDON: RWY . 08-26: STA . 5 + 900: LOAD 844 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

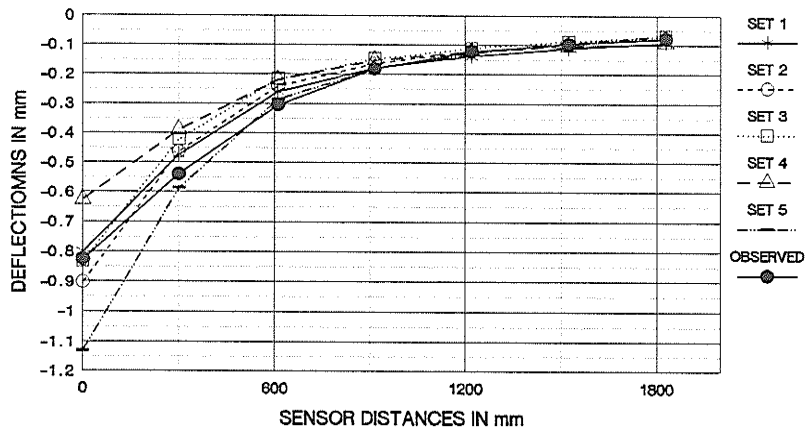
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

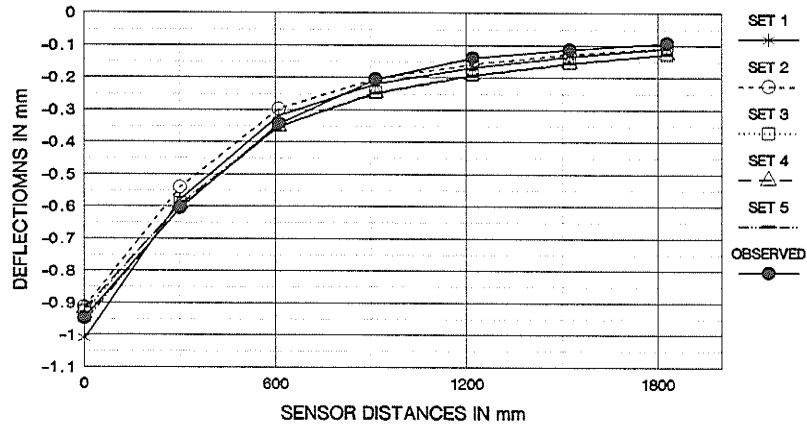


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

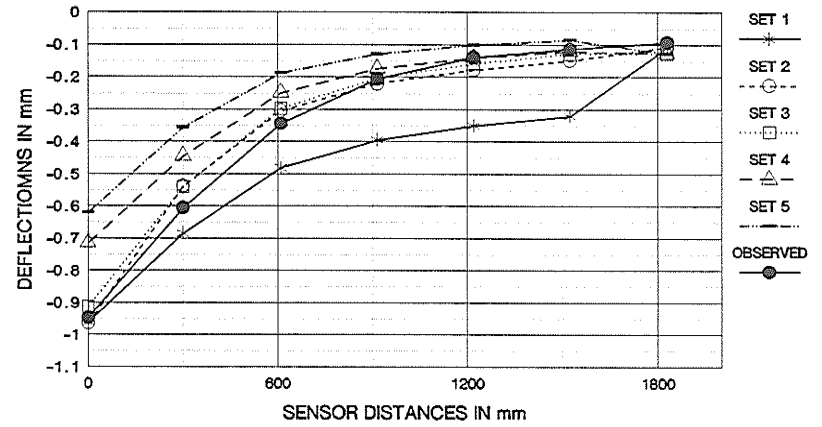
BRANDON: RWY . 08-26: STA. 5 + 900: LOAD 1192 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

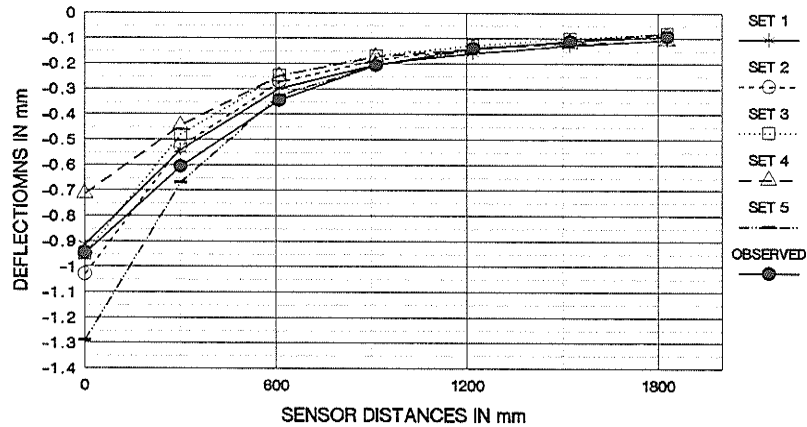
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

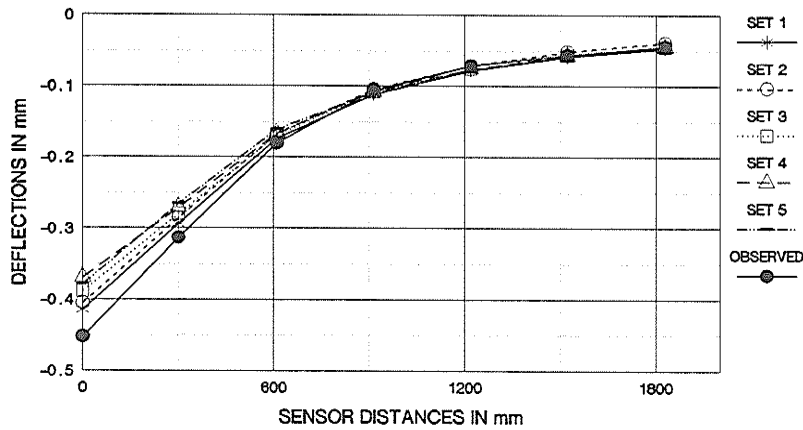


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

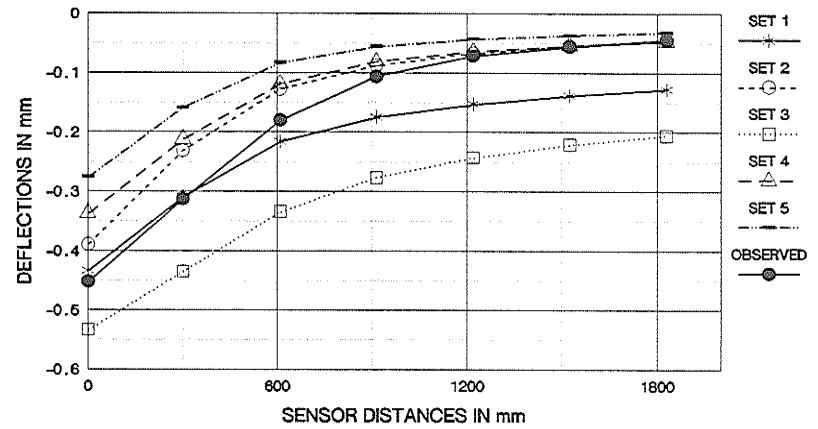
BRANDON: RWY . 08-26: STA. 5 + 900: LOAD 1360 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

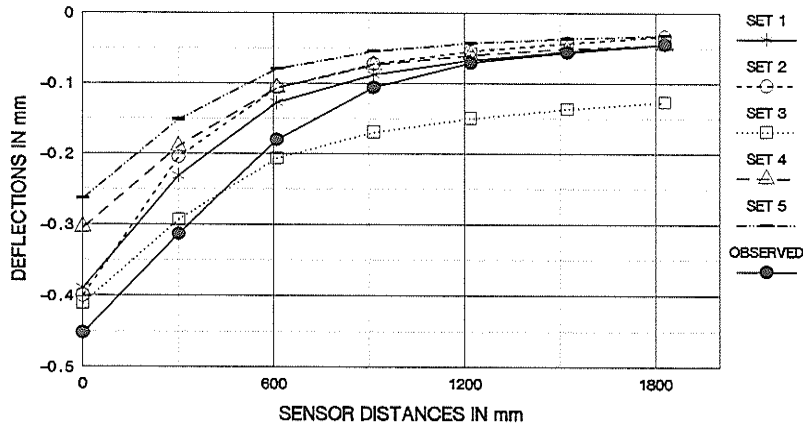
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

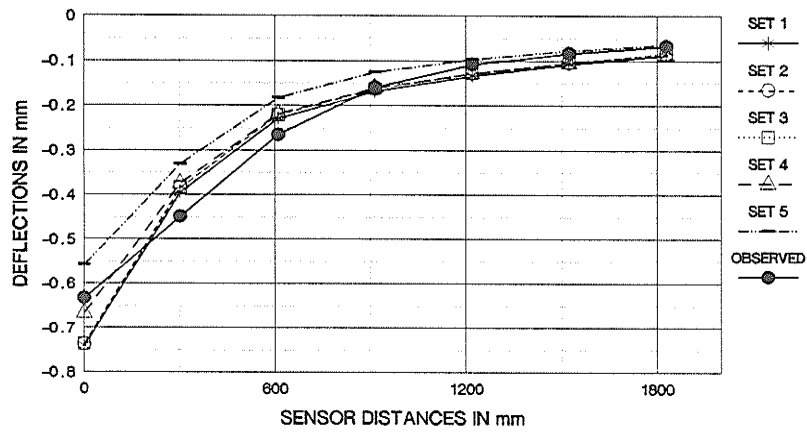


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

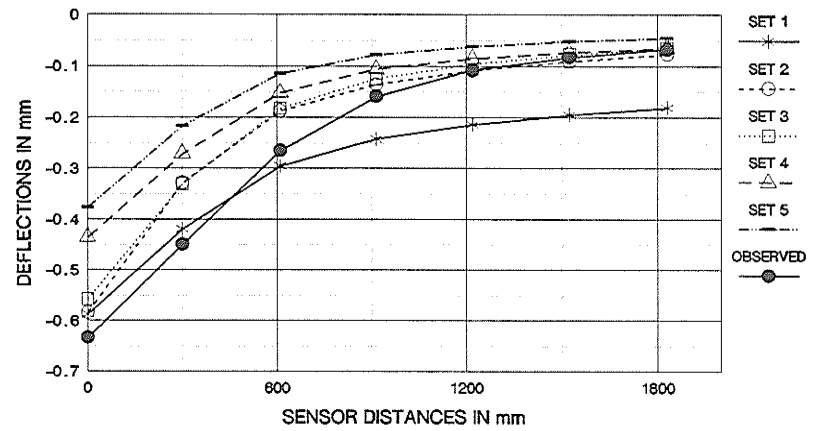
BRANDON: RWY . 08-26: STA . 6+ 300: LOAD 576 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

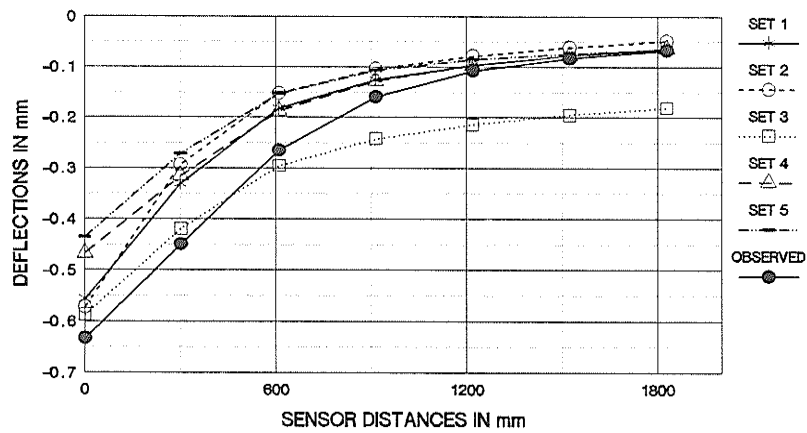
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

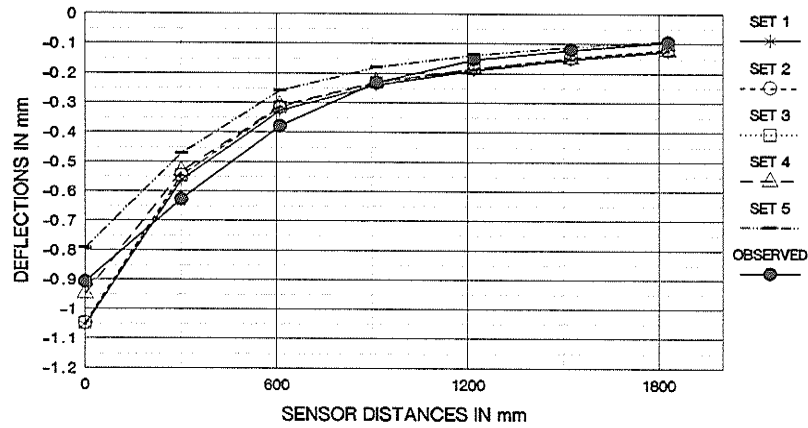


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

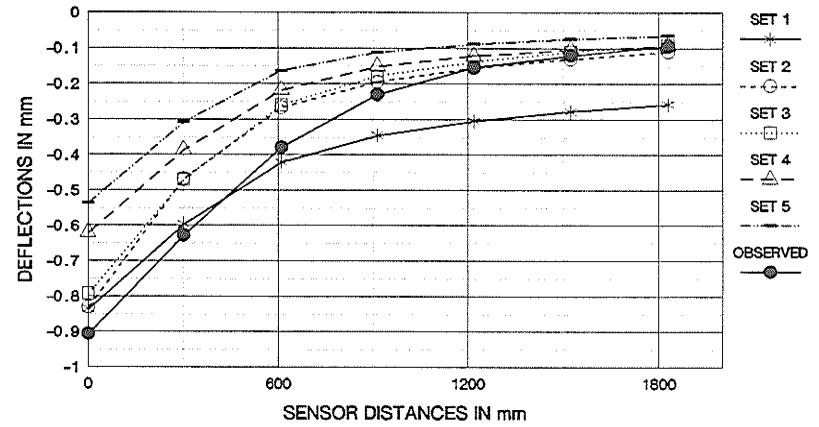
BRANDON: RWY . 08-26: STA . 6+ 300: LOAD 824 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

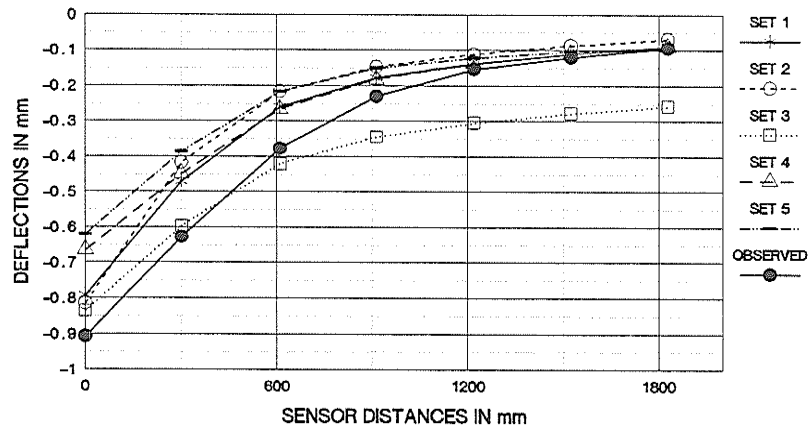
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

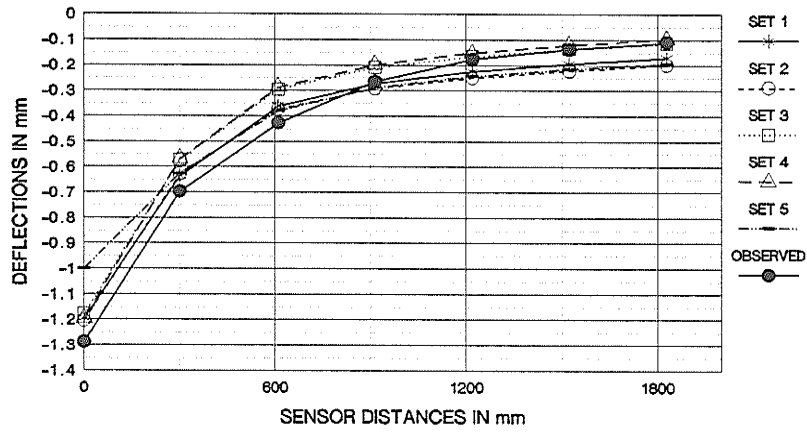


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

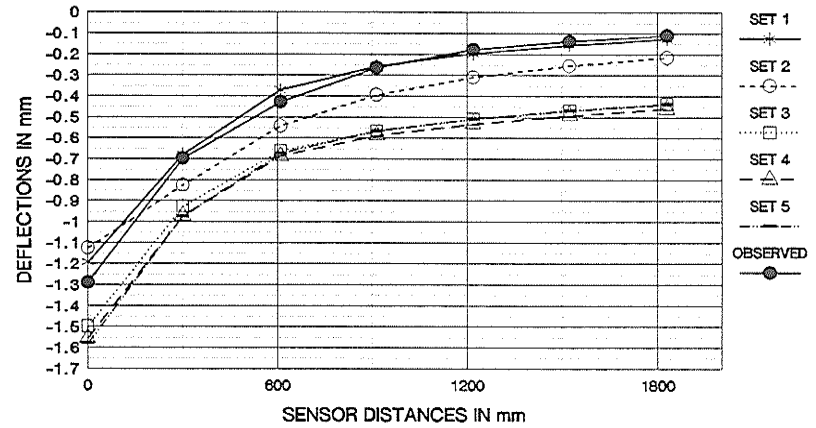
BRANDON: RWY . 08-26: STA. 6+ 300: LOAD 1173 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

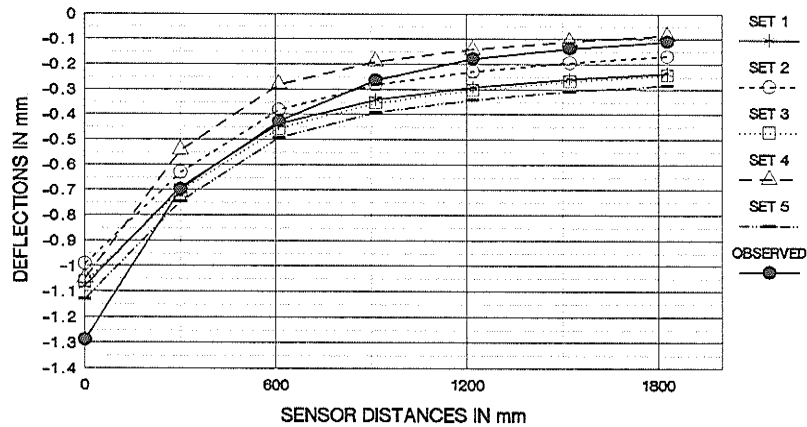
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

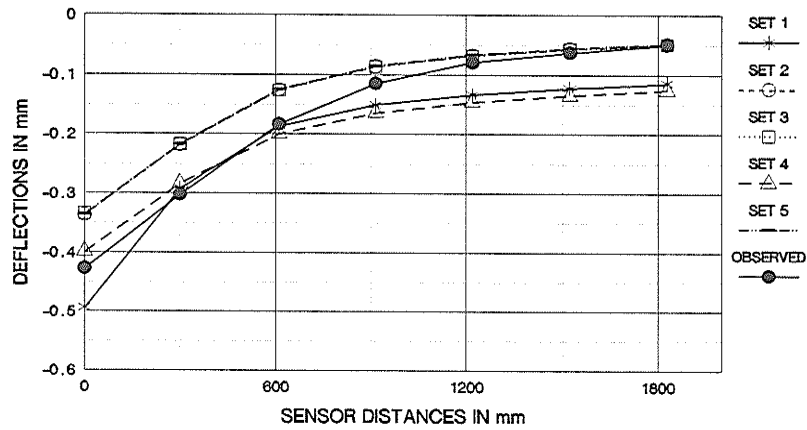


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

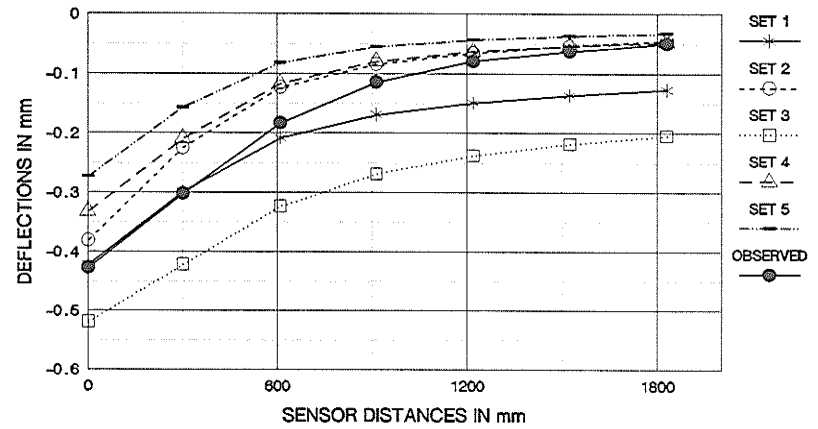
BRANDON: RWY . 08-26: STA . 6+ 300: LOAD 1341 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

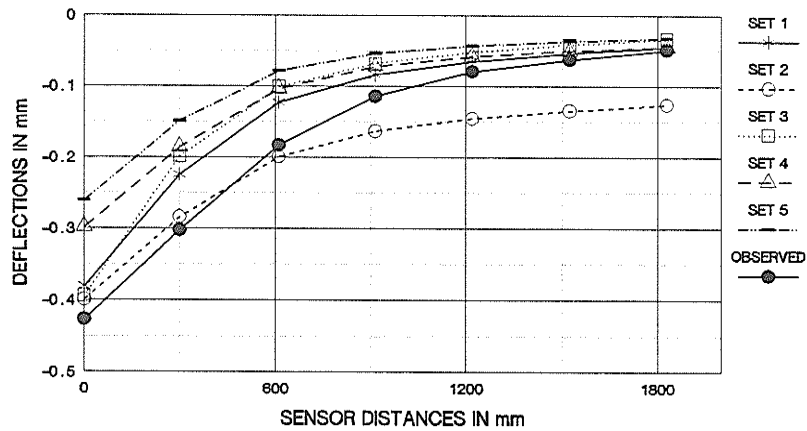
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

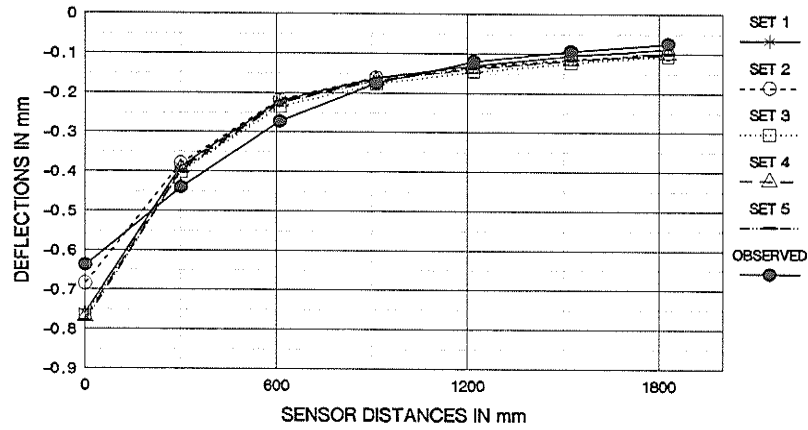


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

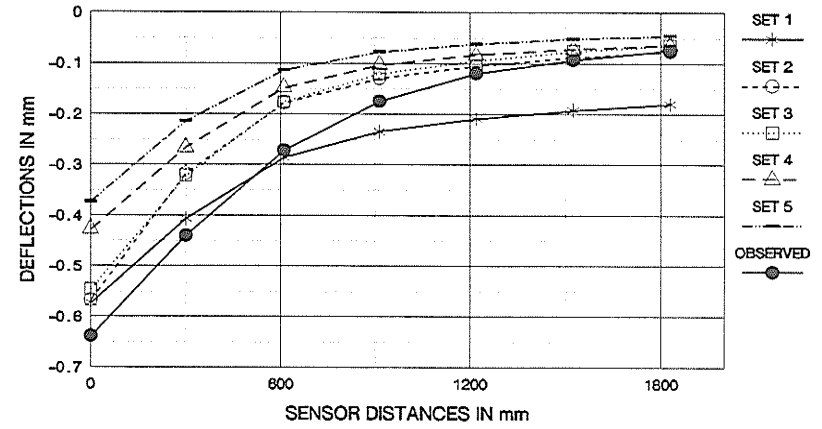
BRANDON: RWY . 08-26: STA . 6+ 400: LOAD 573 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

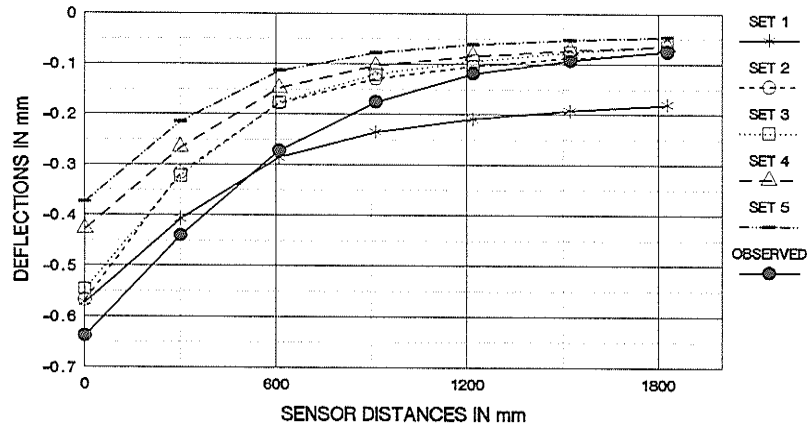
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

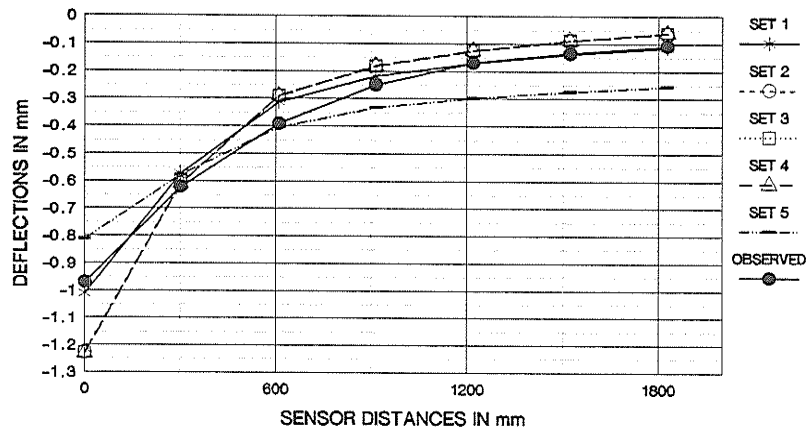


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

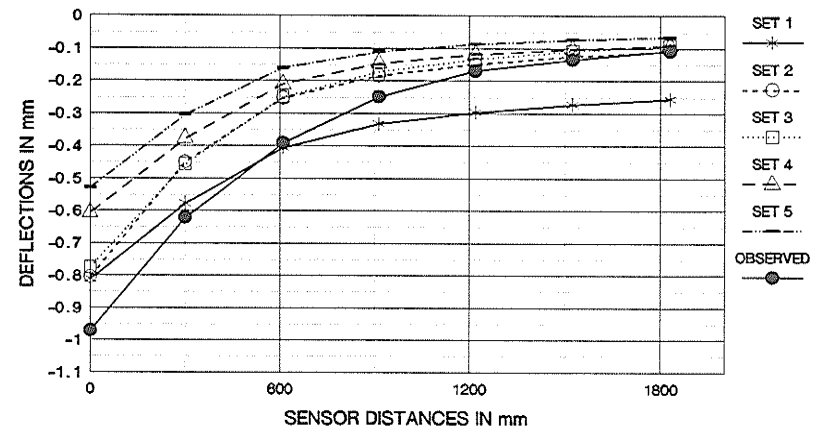
BRANDON: RWY . 08-26: STA. 6+ 400: LOAD 822 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

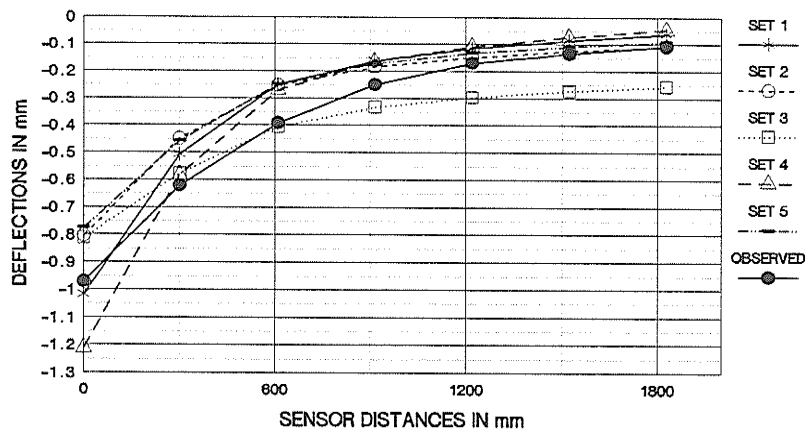
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

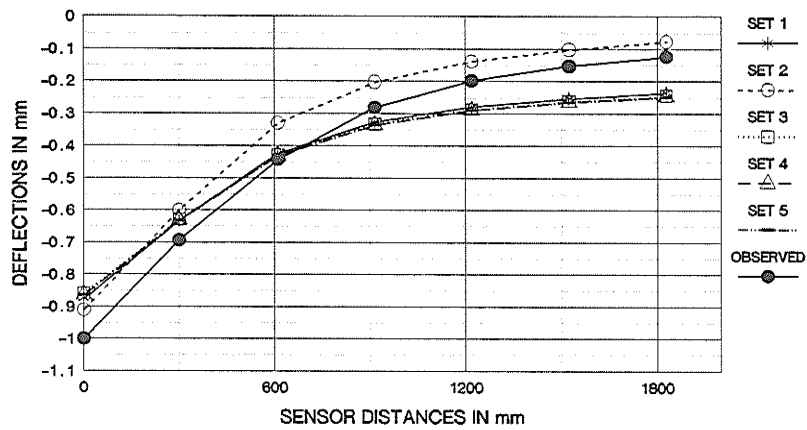


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

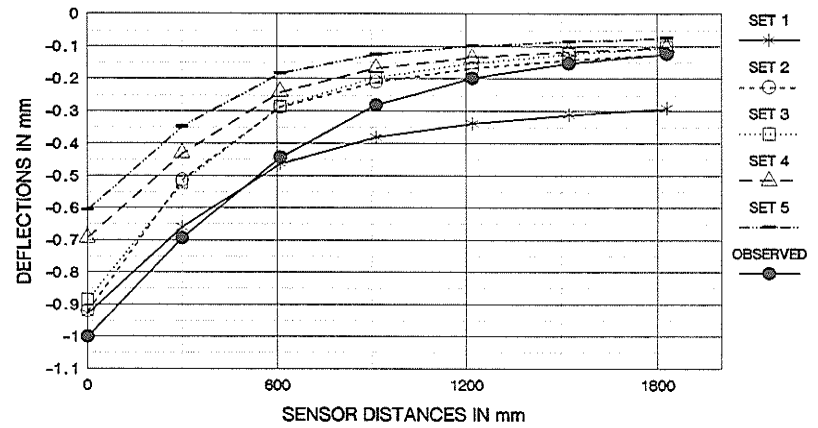
BRANDON: RWY . 08-26: STA . 6+ 400: LOAD 1165 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

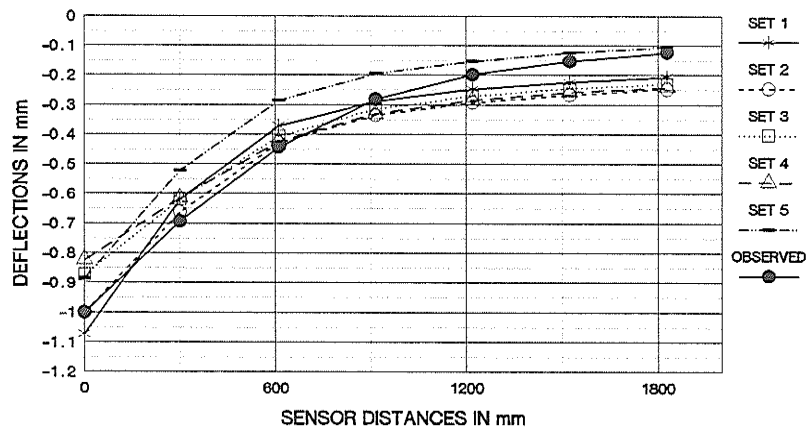
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

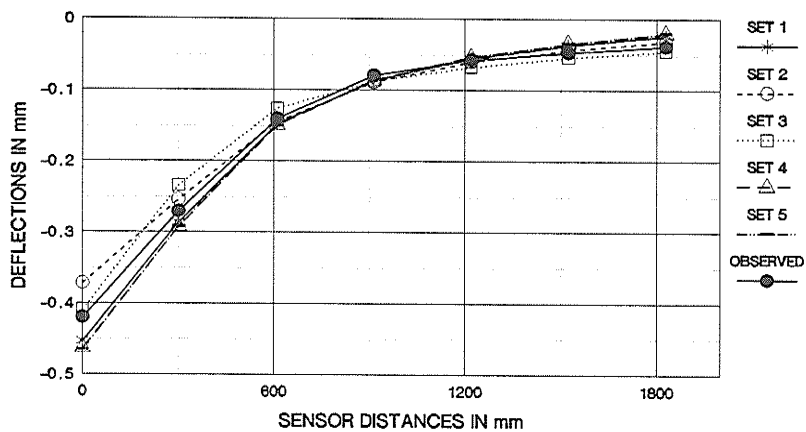


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

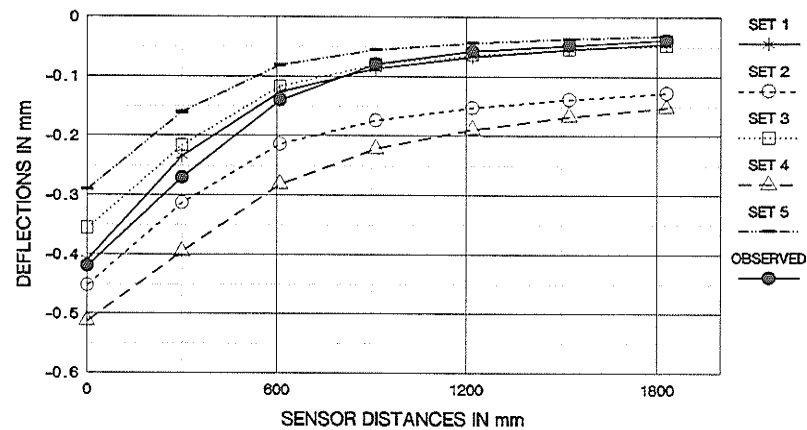
BRANDON: RWY . 08-26: STA . 6+ 400: LOAD 1332 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

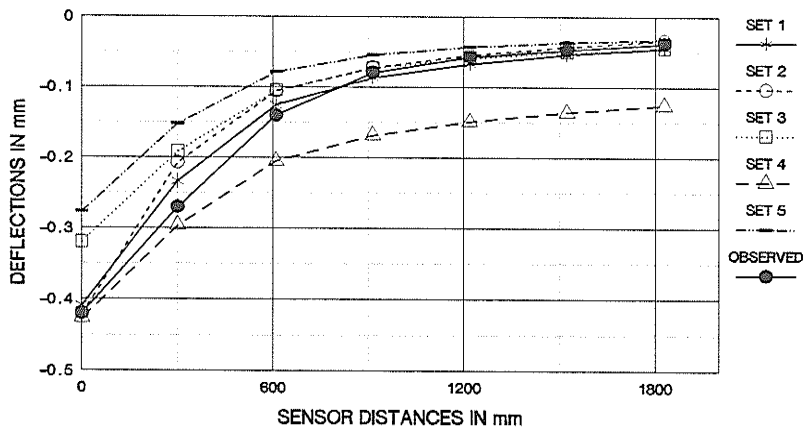
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

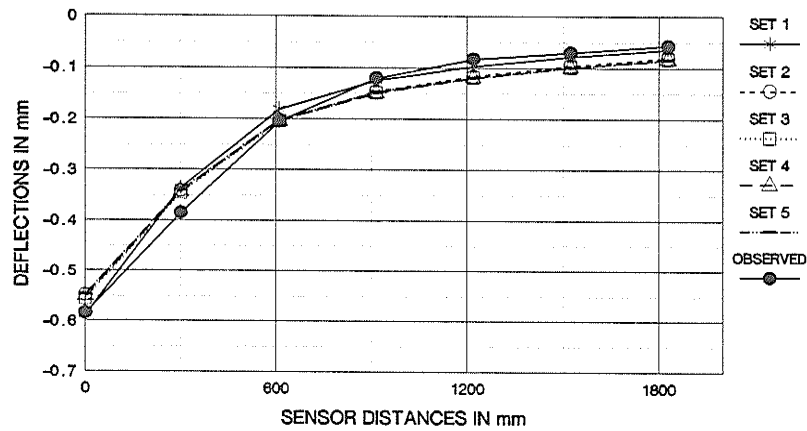


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

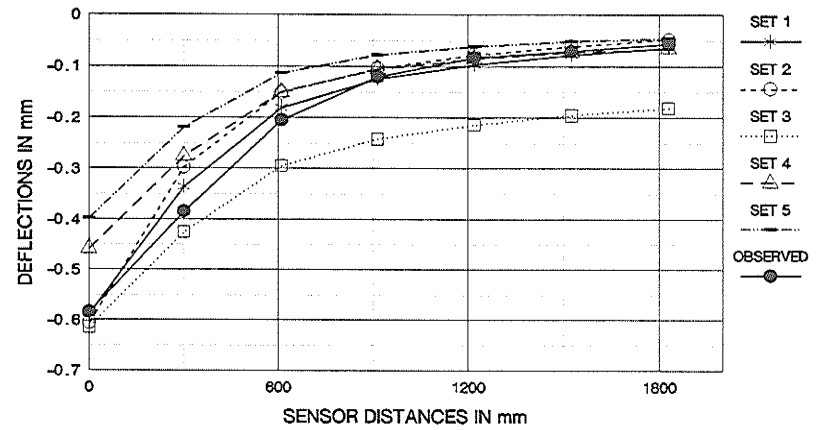
BRANDON; RWY . 08-26; STA . 6+ 500; LOAD 574 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

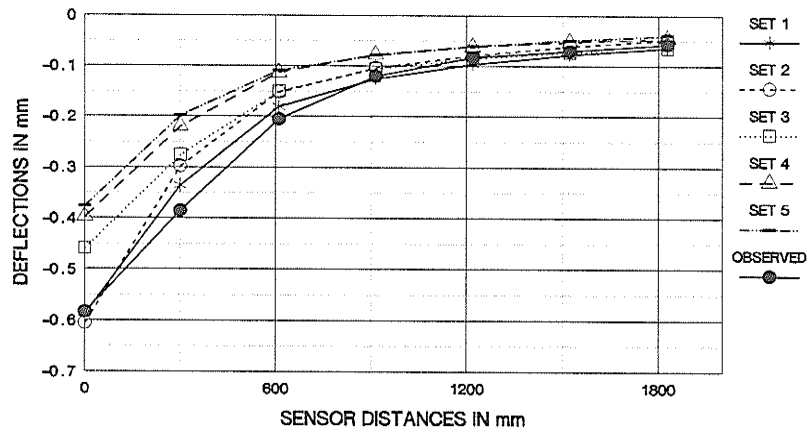
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

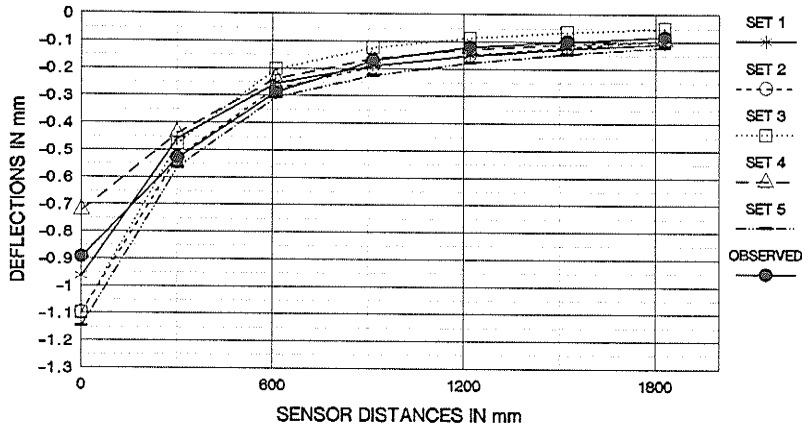


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

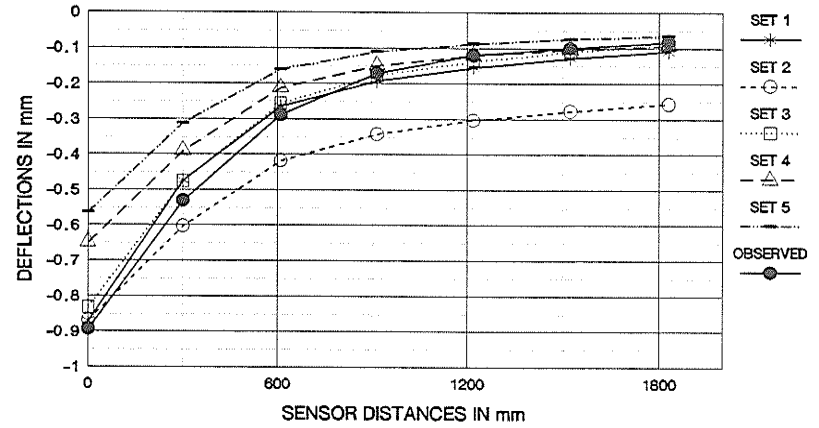
BRANDON: RWY . 08-26: STA. 6+ 500: LOAD 825 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

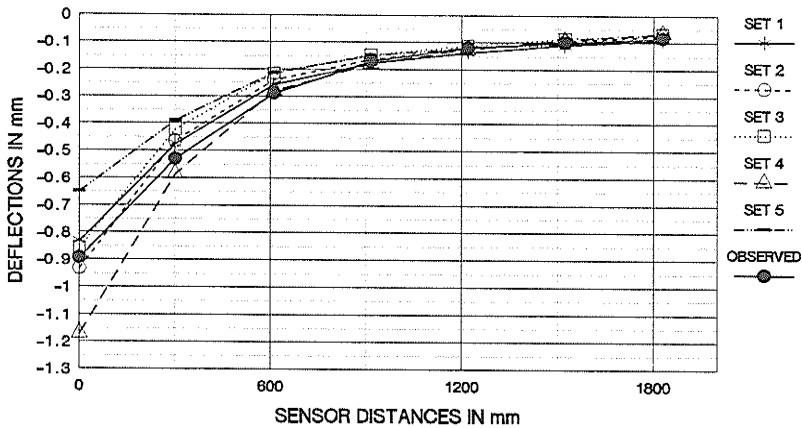
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

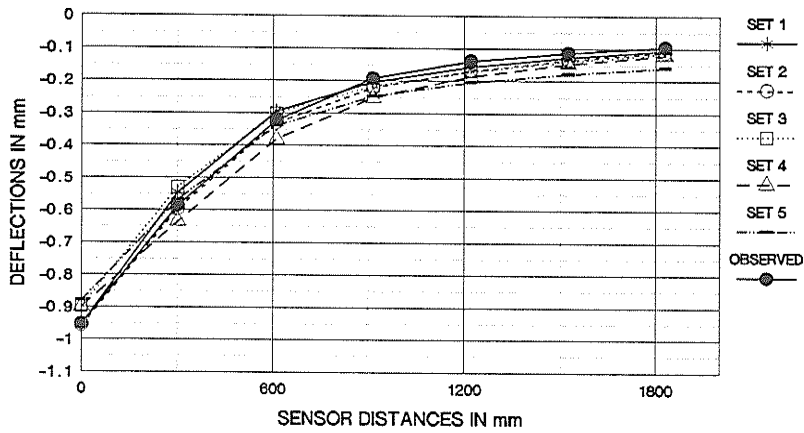


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

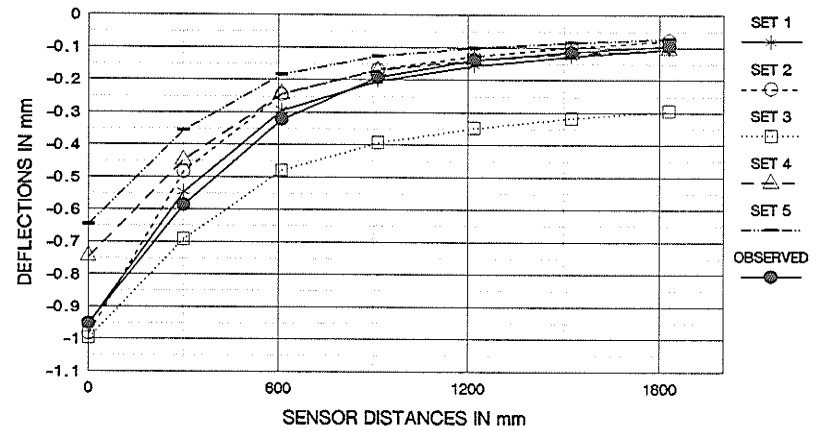
BRANDON: RWY . 08-26: STA . 6+ 500: LOAD 1167 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

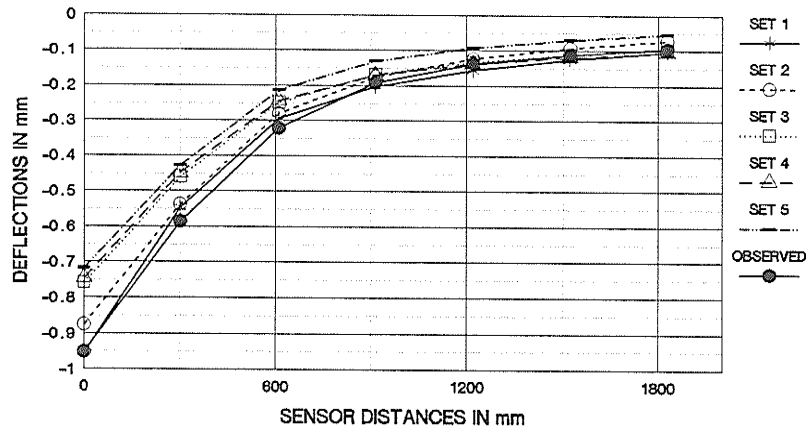
OPTIMIZING CRITERION: *AREA* OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

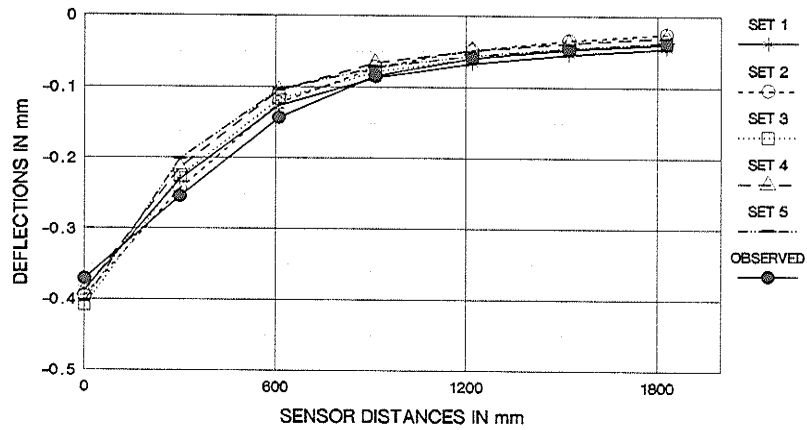


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

BRANDON: RWY . 08-26: STA . 6+ 500: LOAD 1340 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

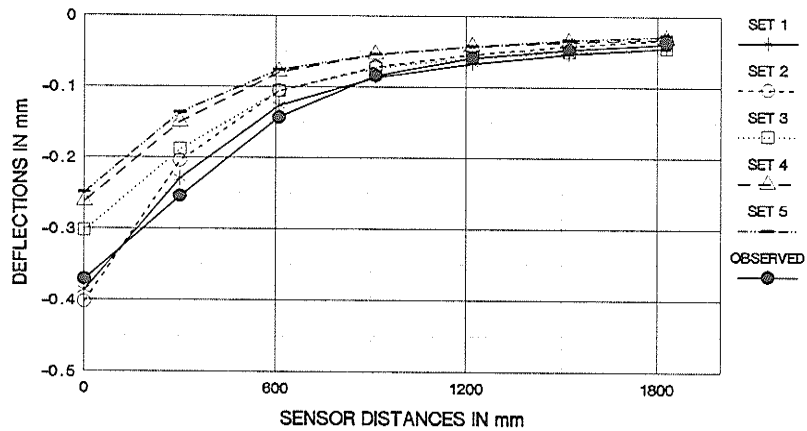
OPTIMIZING CRITERION: AREA OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

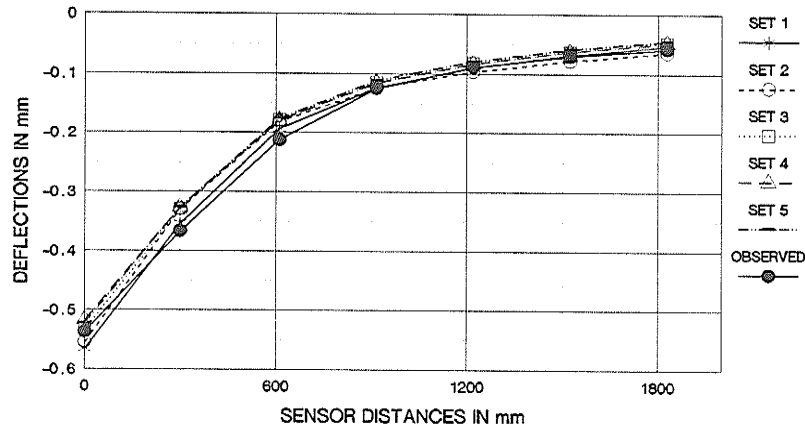


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

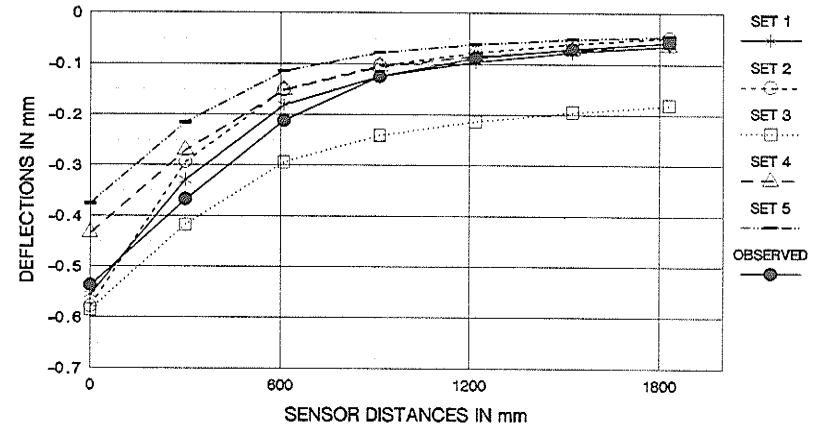
BRANDON: RWY . 08-26: STA . 6 + 600: LOAD 573 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

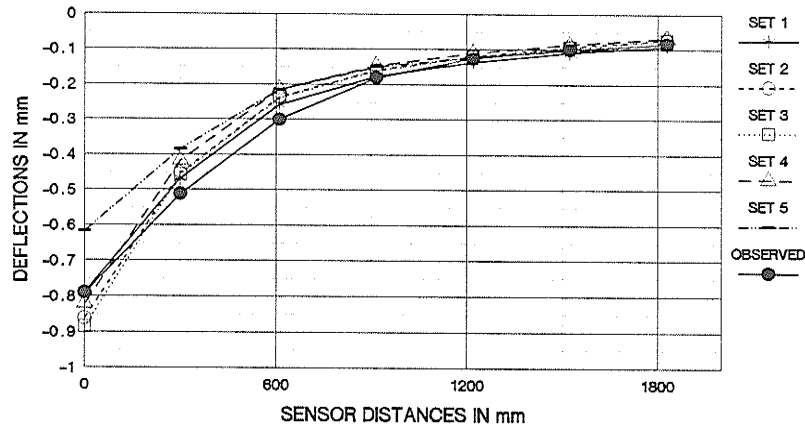
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

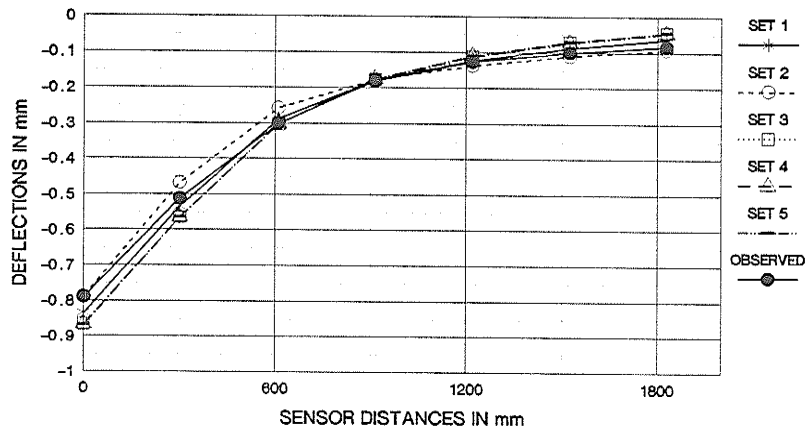


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

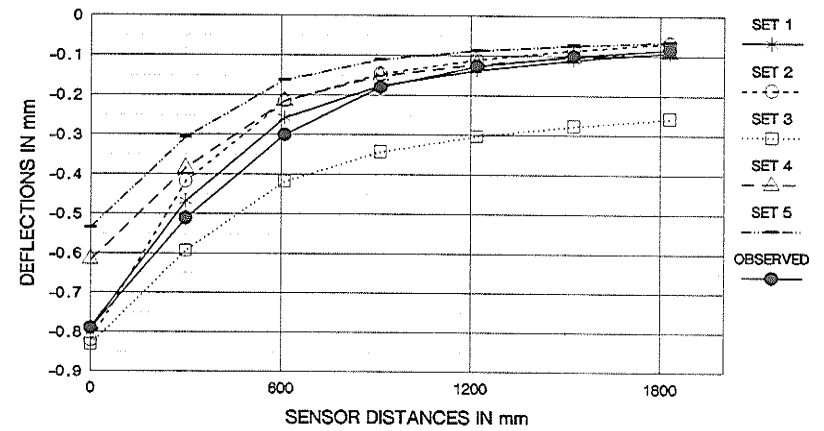
BRANDON: RWY . 08-26: STA . 6 + 600: LOAD 823 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

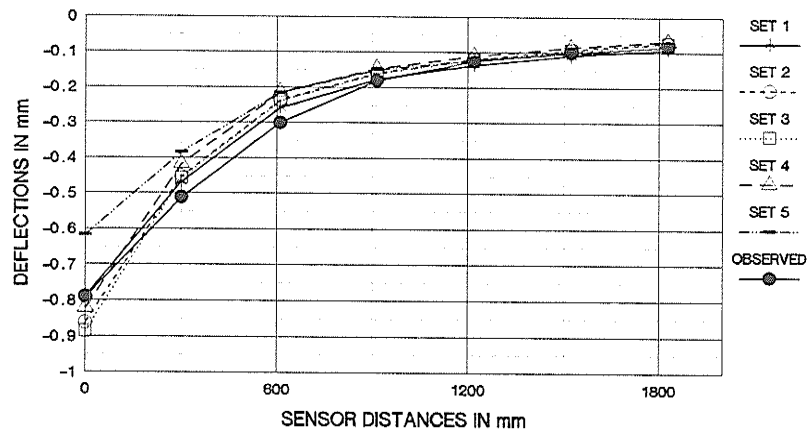
OPTIMIZING CRITERION: AREA* OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTION

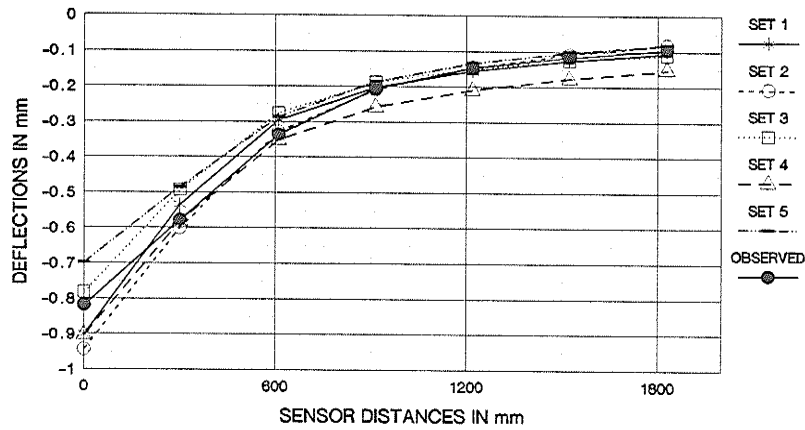


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

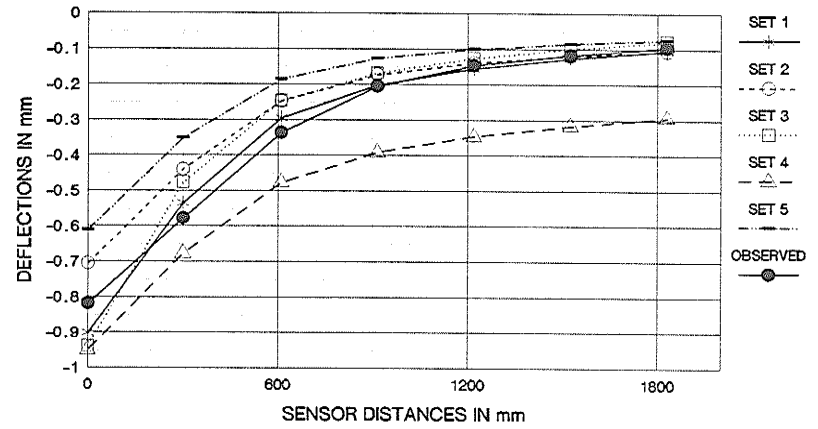
BRANDON: RWY . 08-26: STA . 6 + 600: LOAD 1169 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZATION CRITERION: RMS VALUE OF DEFLECTION

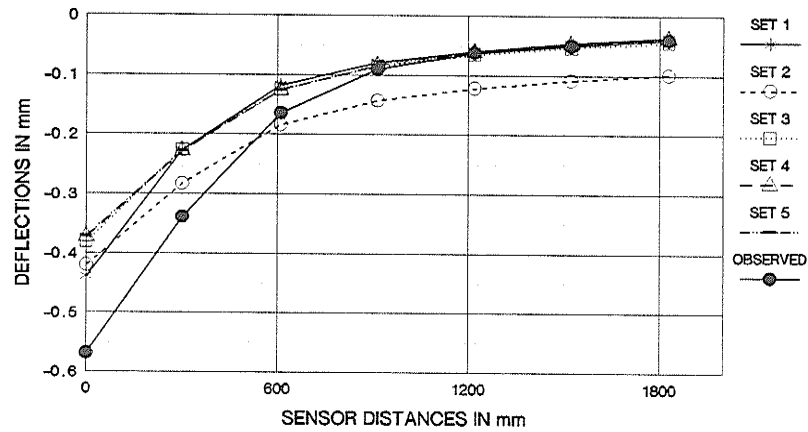
COMPUTATION MISSED

ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

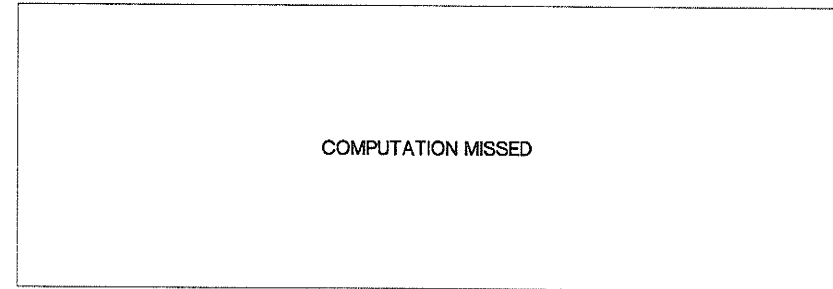
BRANDON: RWY . 08-26: STA. 6 + 600: LOAD 1336 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

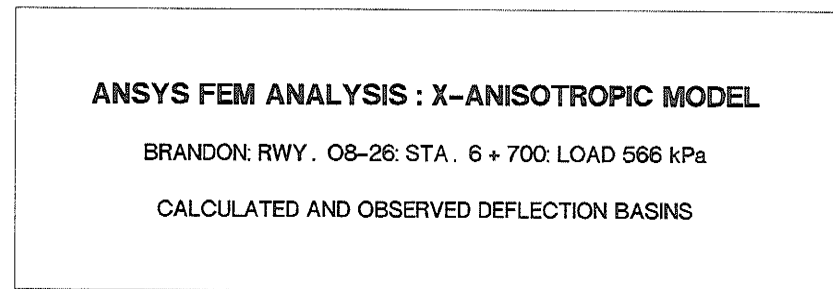
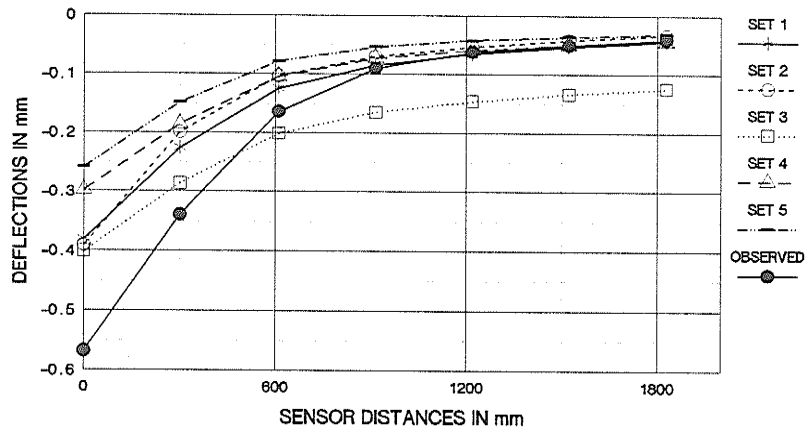
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



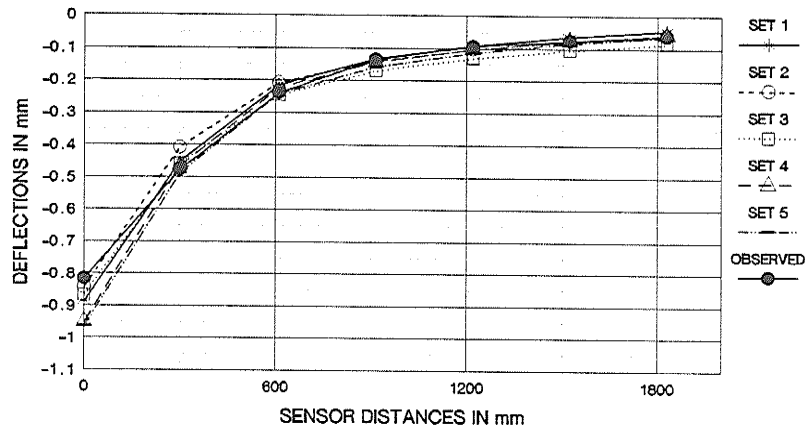
OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS



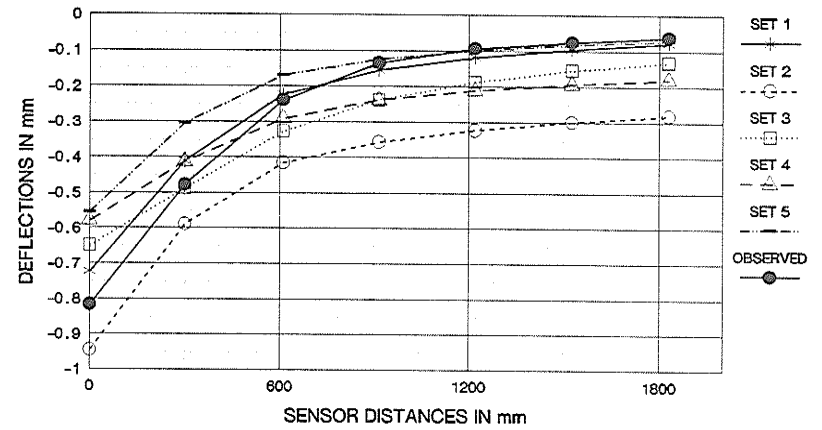
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



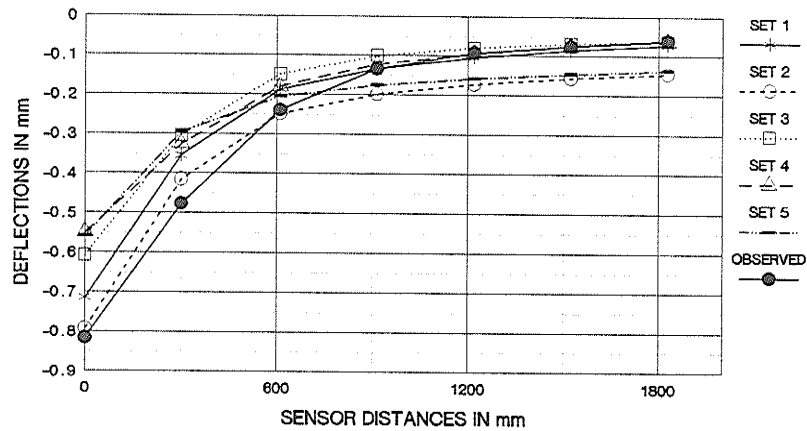
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

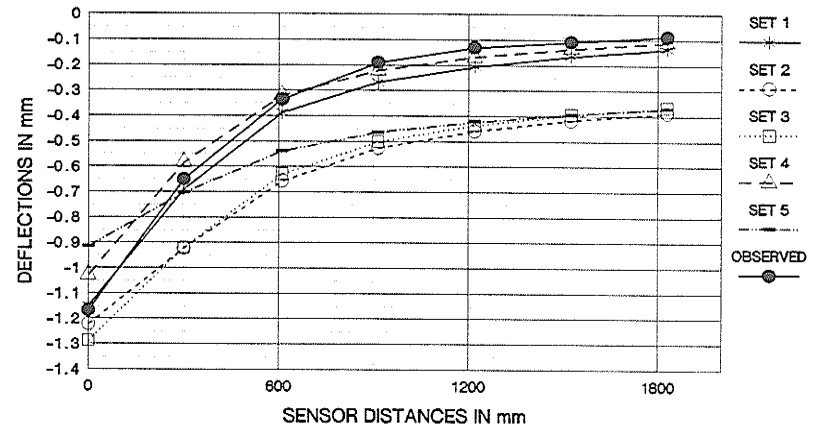
BRANDON: RWY . 08-26: STA . 6 + 700: LOAD 817 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

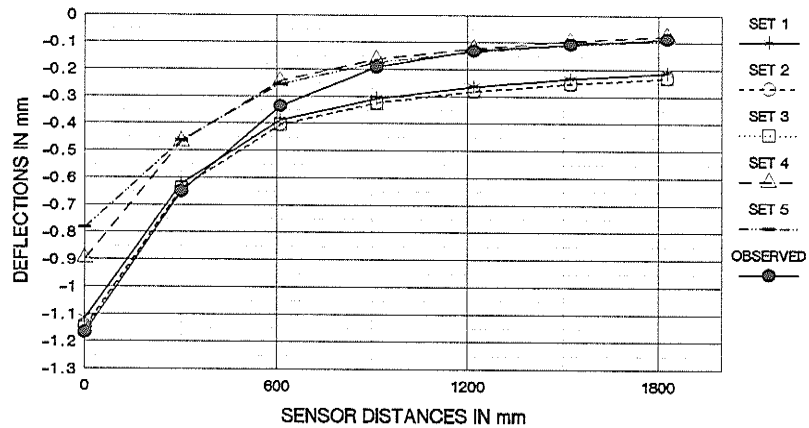
OPTIMIZATION CRITERION: "AREA" OF DEFLECTION BASIN

COMPUTATION MISSED

OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

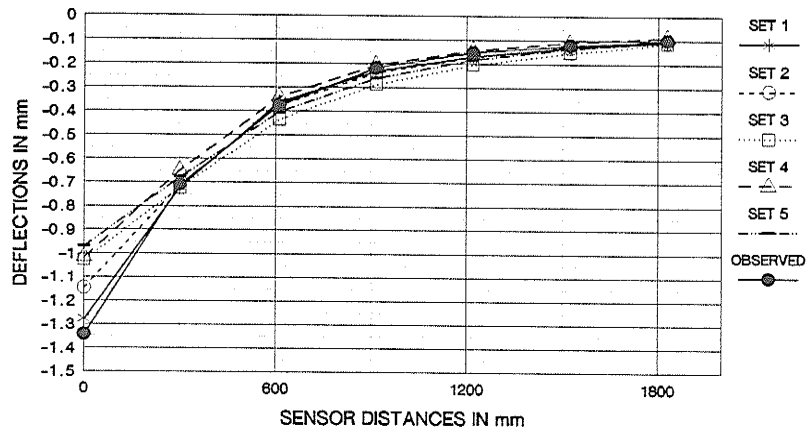


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

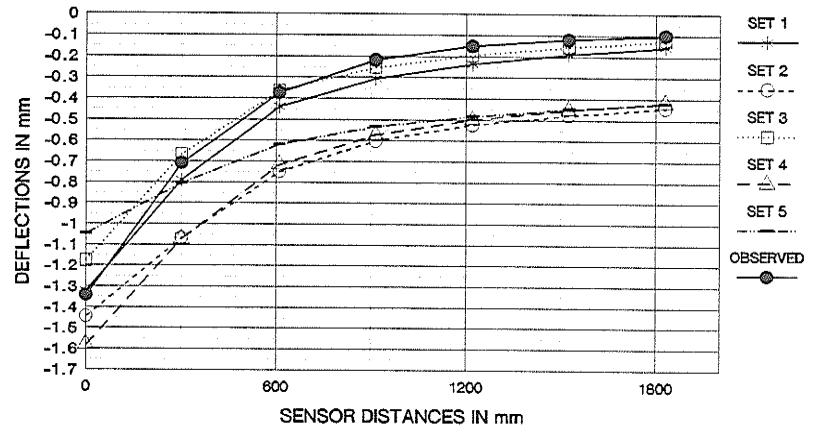
BRANDON: RWY. 08-26: STA. 6 + 700: LOAD 1162 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

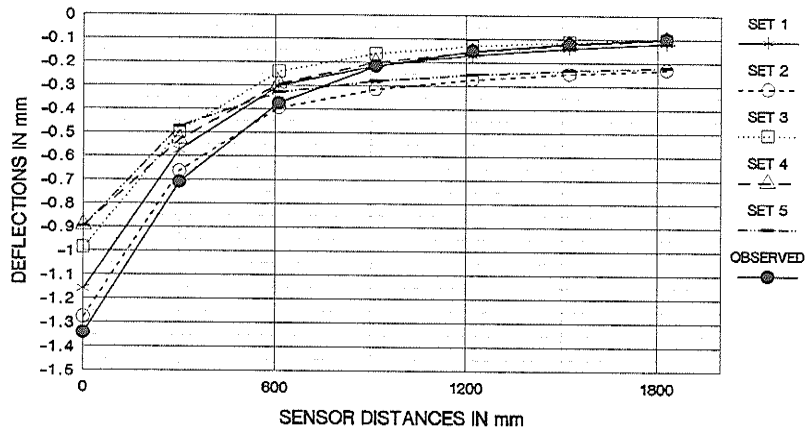
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

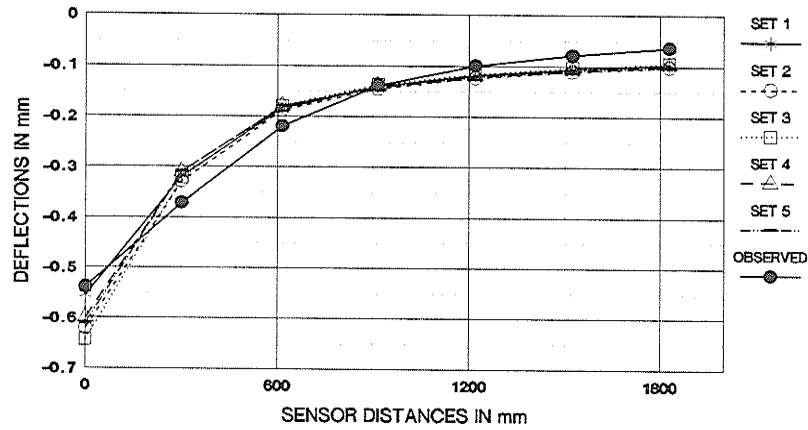


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

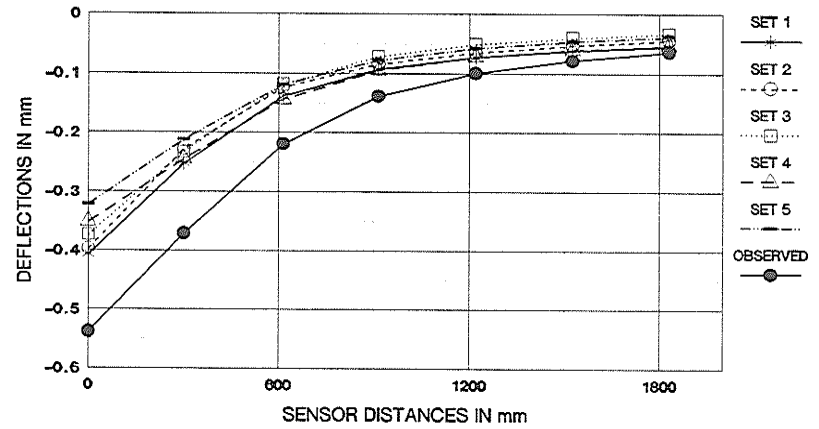
BRANDON: RWY. 08-26: STA. 6 + 700: LOAD 1328 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

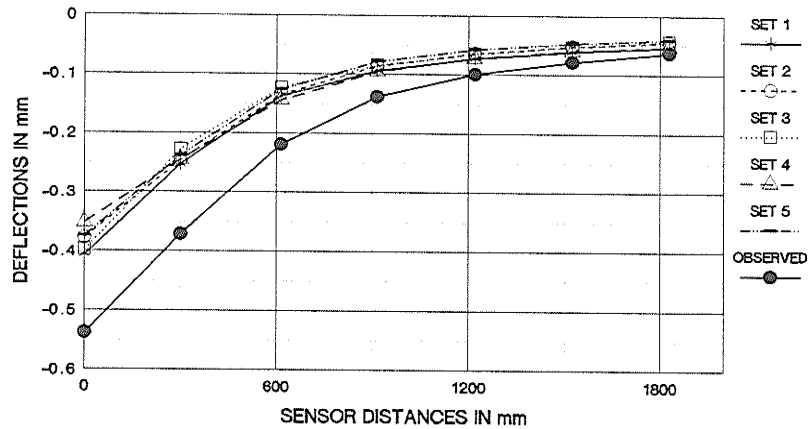
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

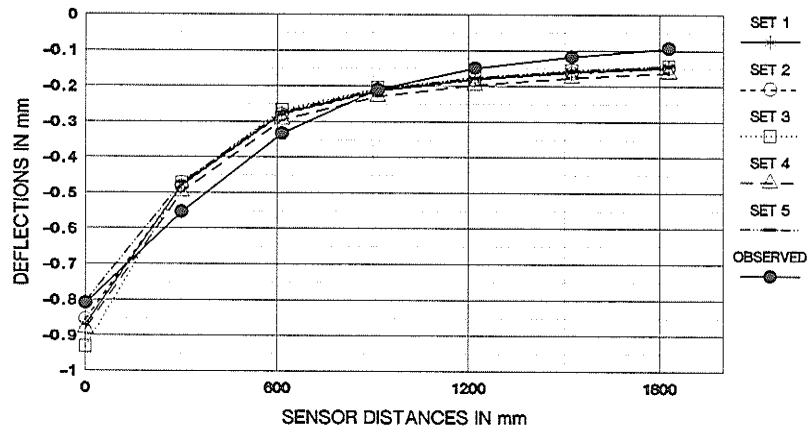


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

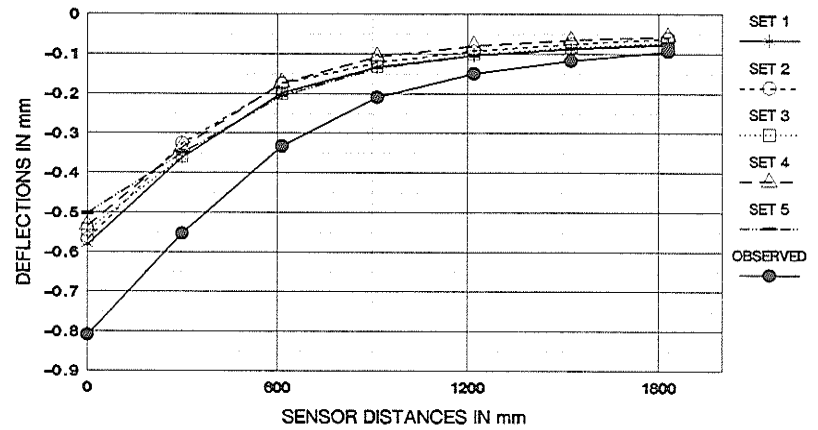
BRANDON: RWY. 08-26: STA. 5 + 400: LOAD 568 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

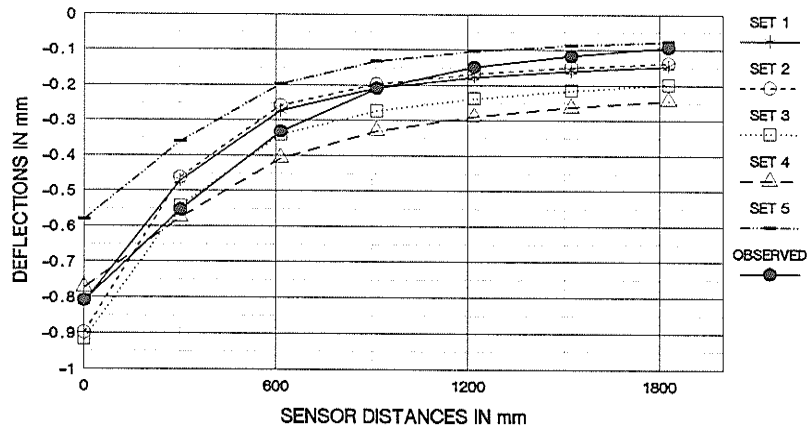
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

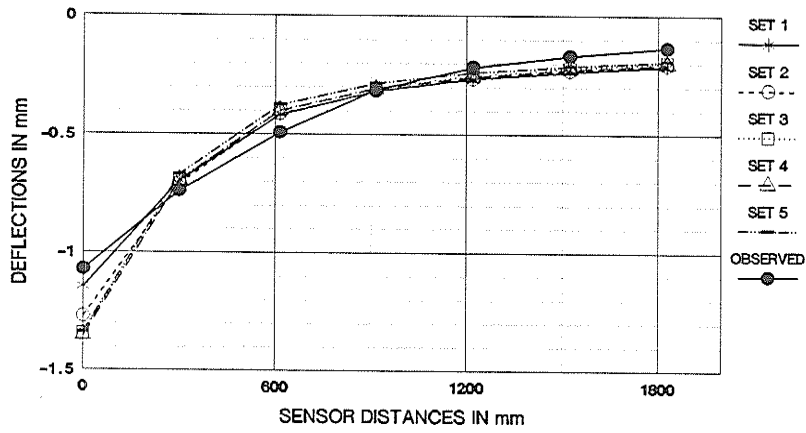


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

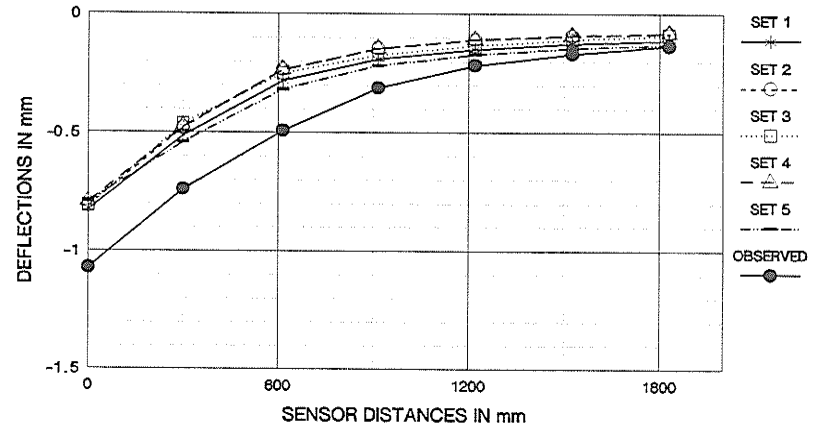
BRANDON: RWY . 08-26: STA . 5 + 400: LOAD 797 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

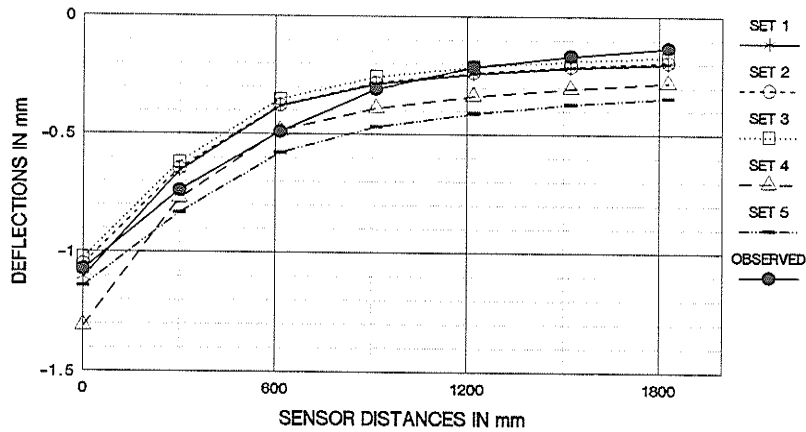
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

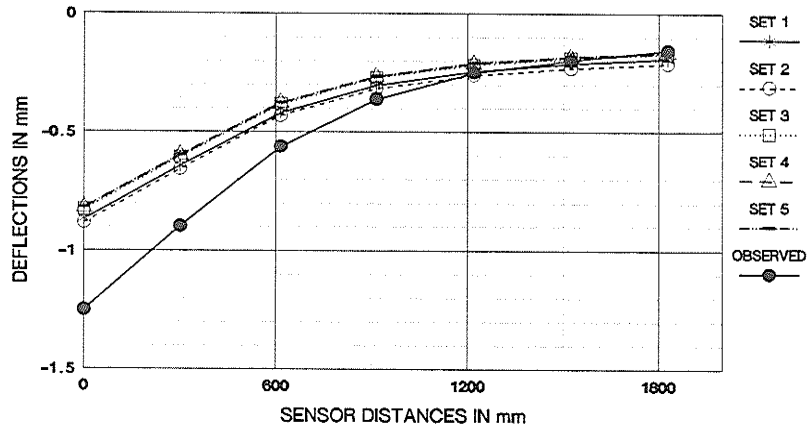


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

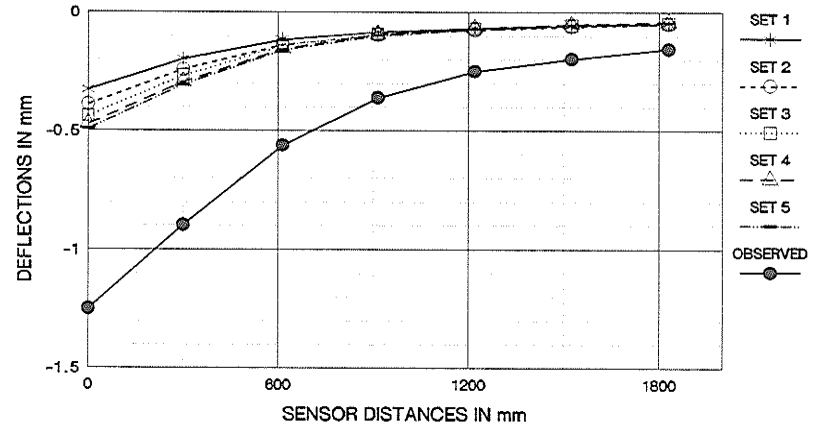
BRANDON: RWY . 08-26: STA . 5 + 400: LOAD 1134 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

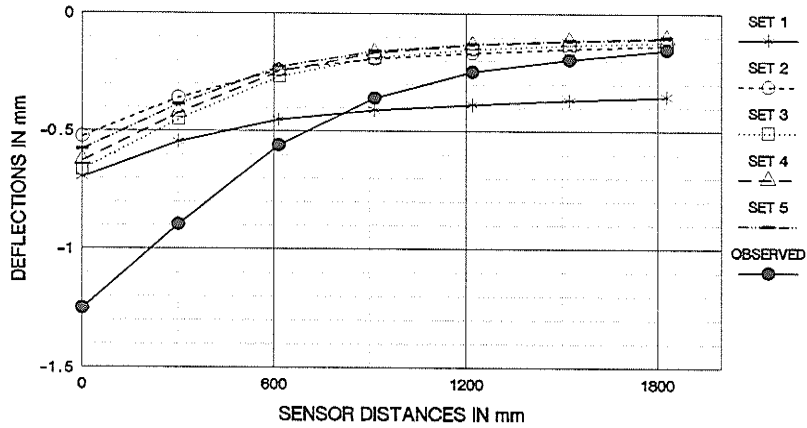
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

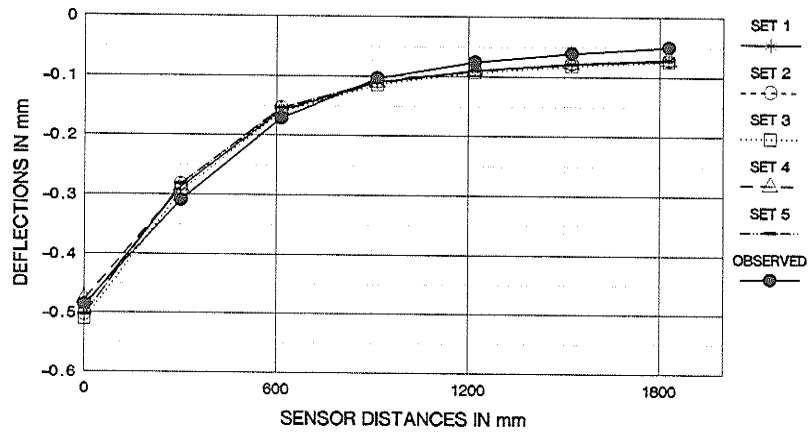


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

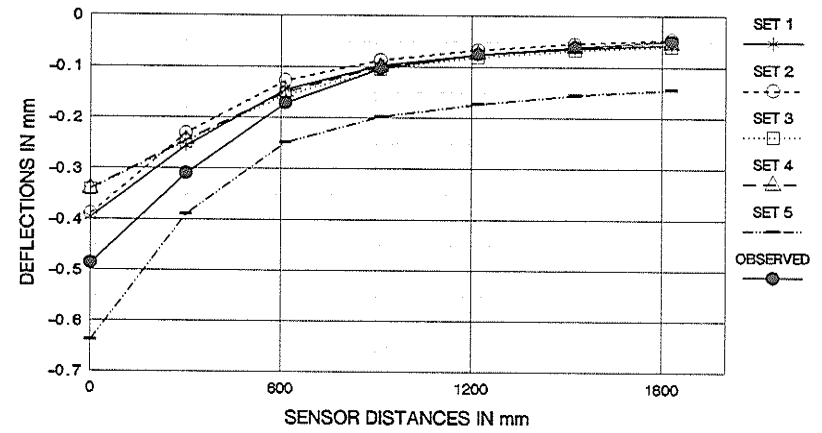
BRANDON: RWY. 08-26: STA. 5 + 400: LOAD 1295 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

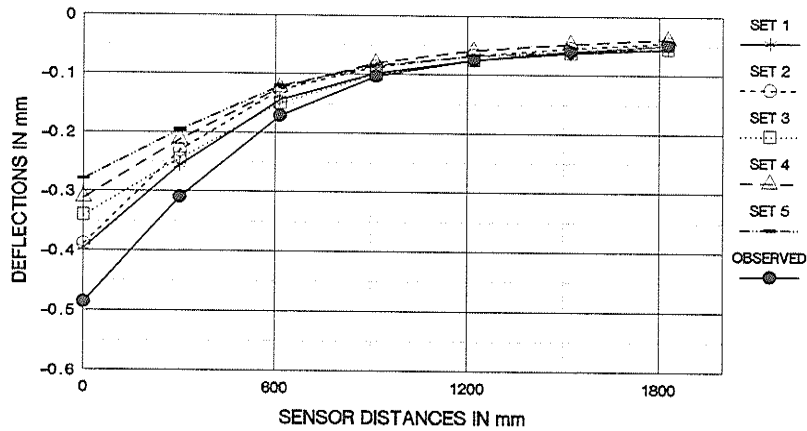
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

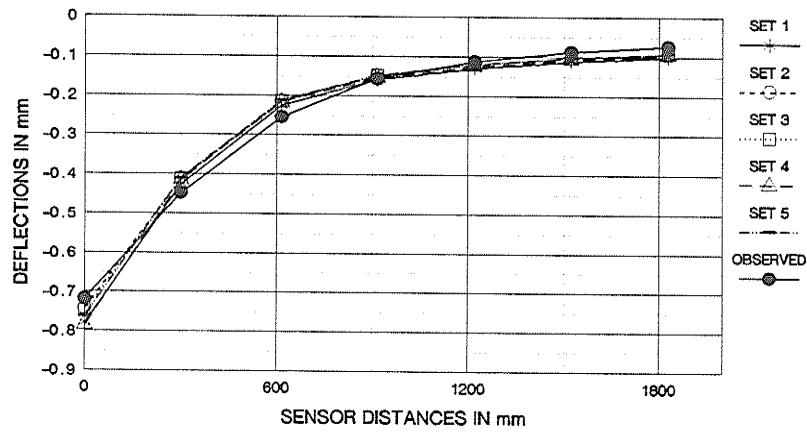


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

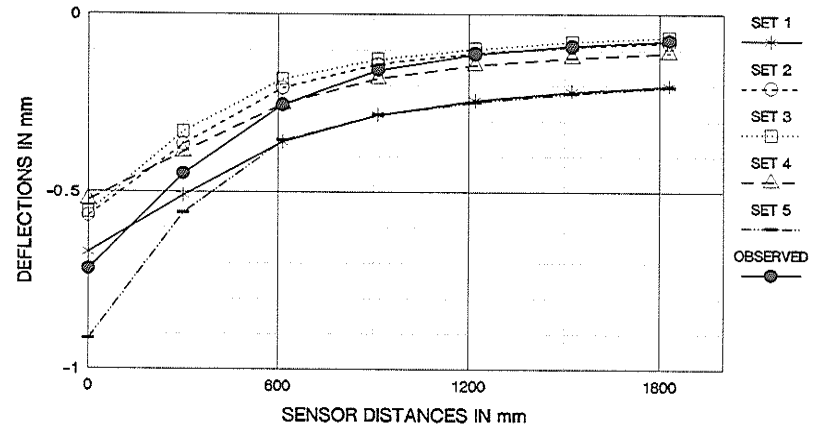
BRANDON: RWY . 08-26: STA . 5 + 600: LOAD 578 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

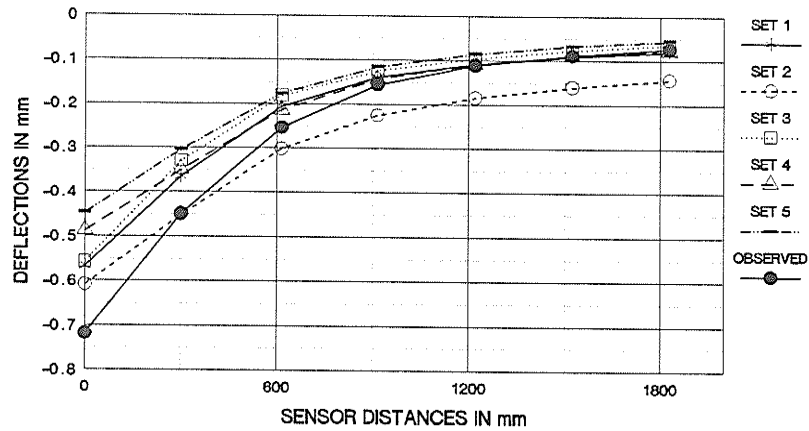
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

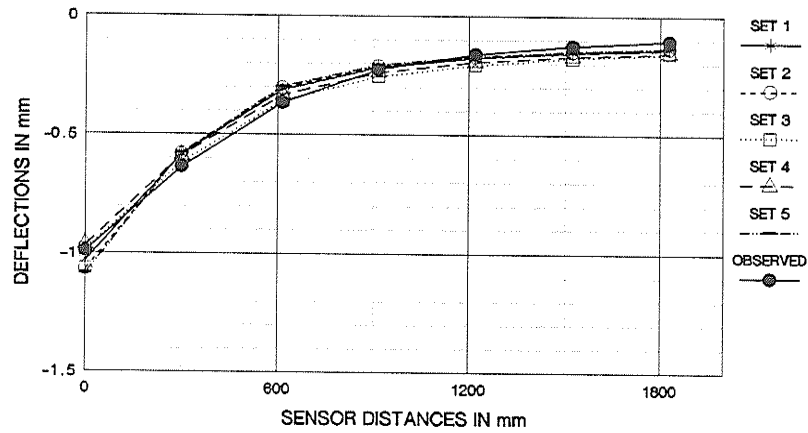


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

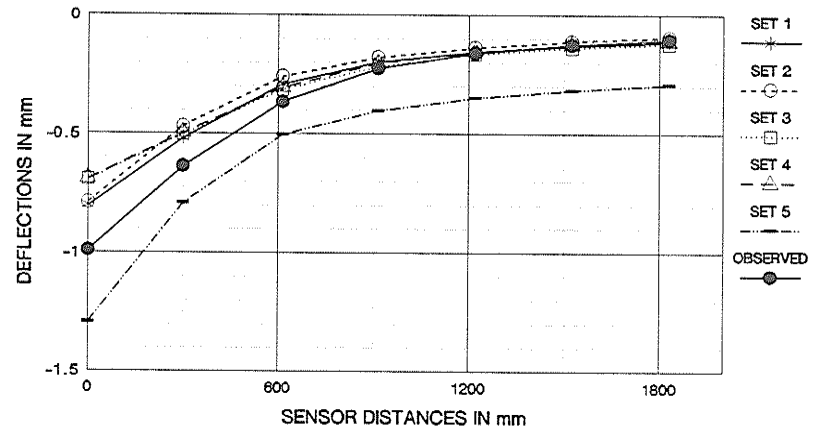
BRANDON: RWY . 08-26: STA . 5 + 600: LOAD 828 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

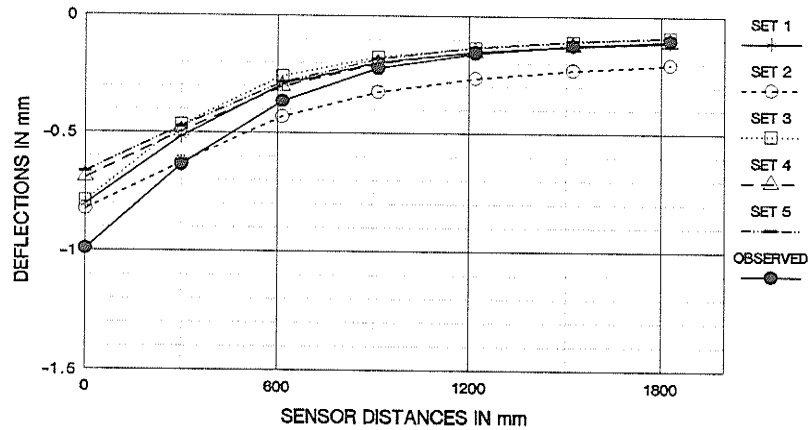
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

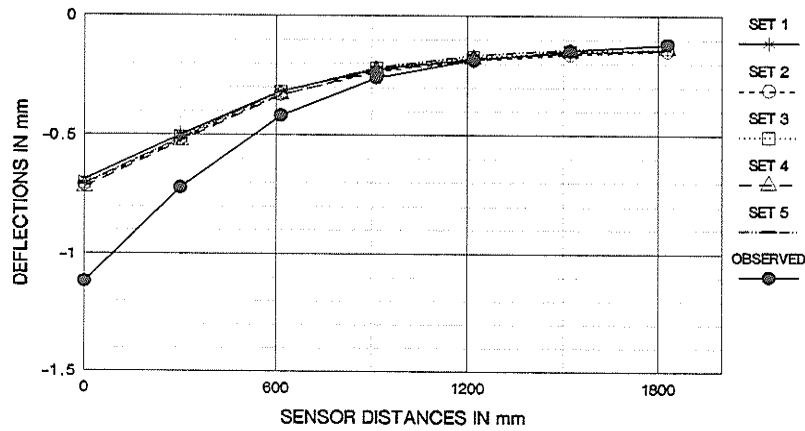


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

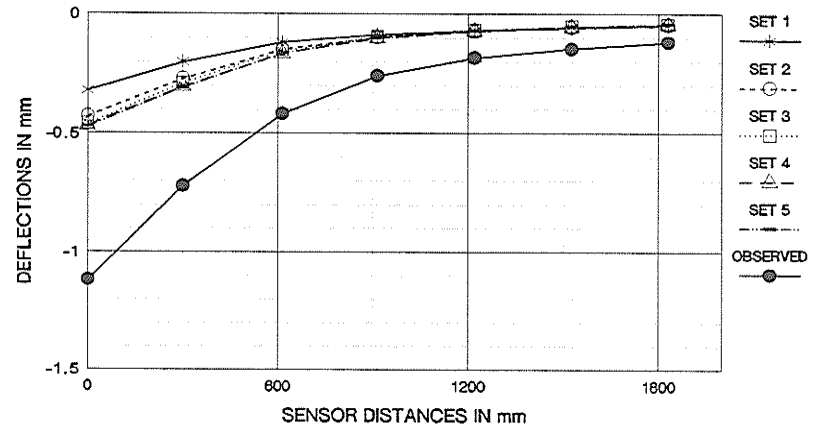
BRANDON: RWY . 08-26: STA . 5 + 600: LOAD 1173 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

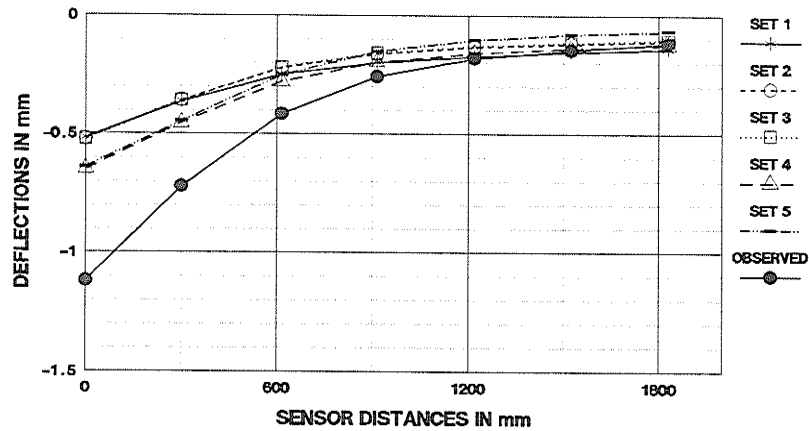
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

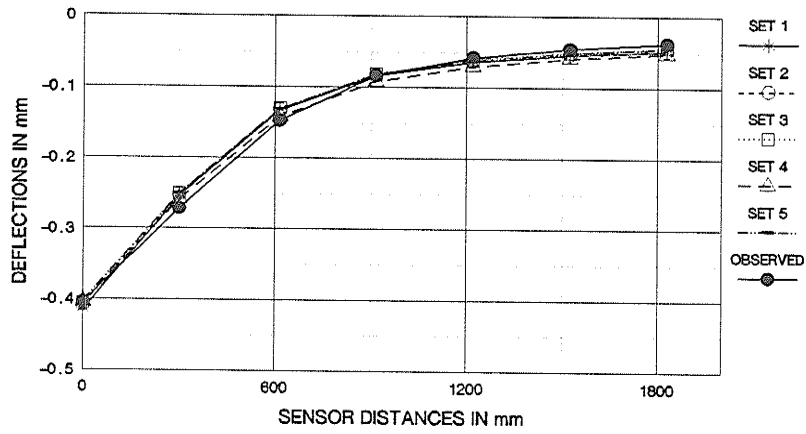


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

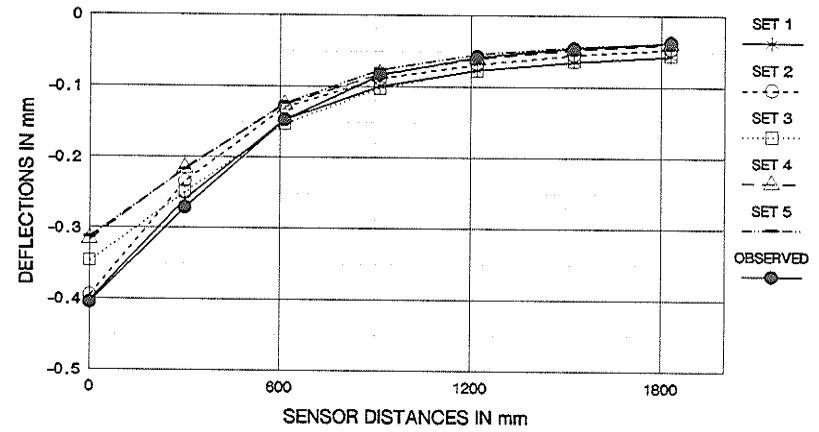
BRANDON: RWY . 08-26: STA. 5 + 600: LOAD 1347 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

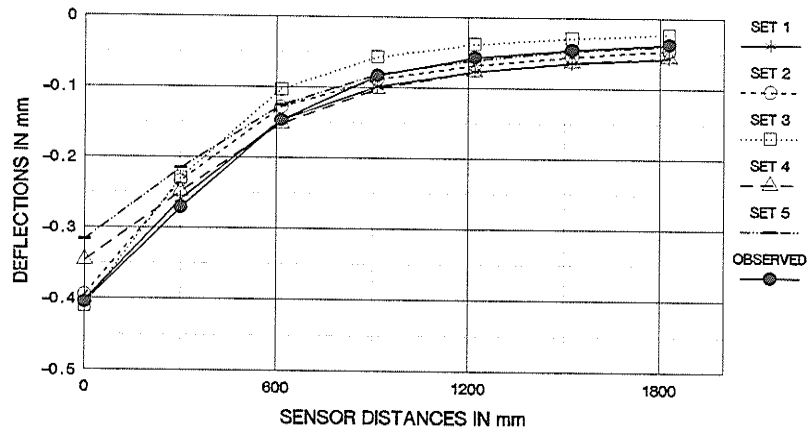
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

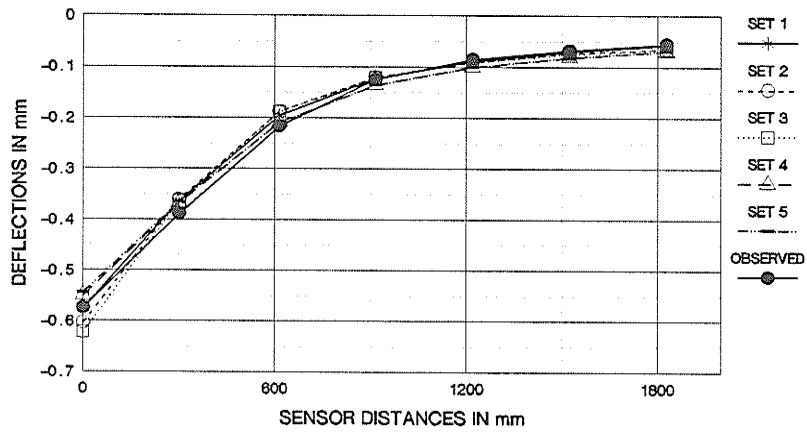


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

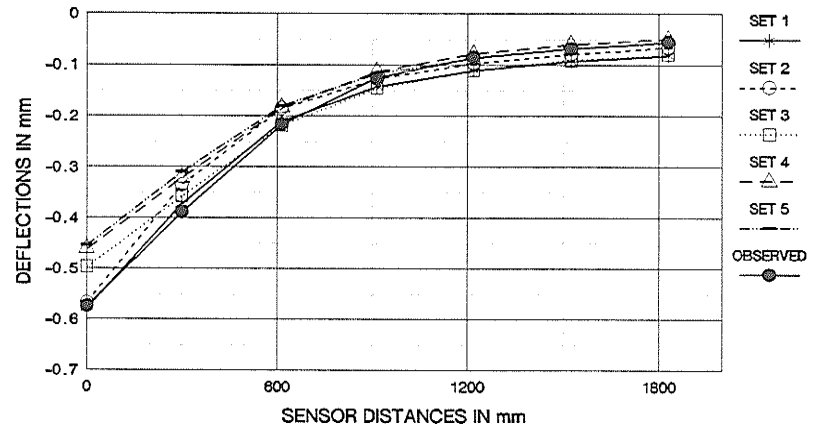
BRANDON: RWY . 08-26: STA . 5 + 900: LOAD 588 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

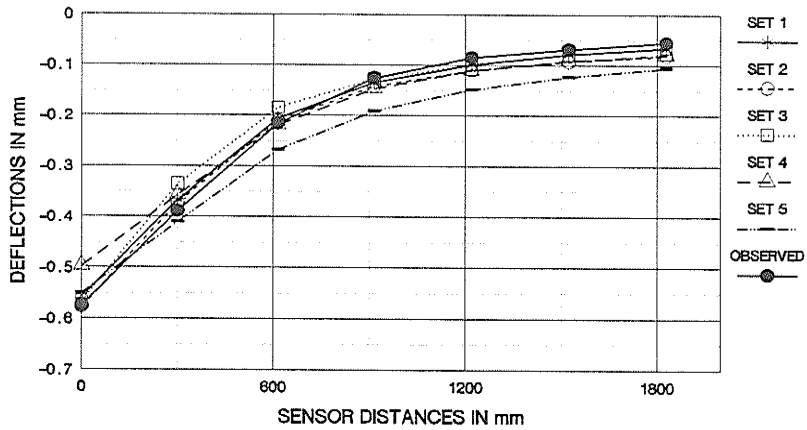
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

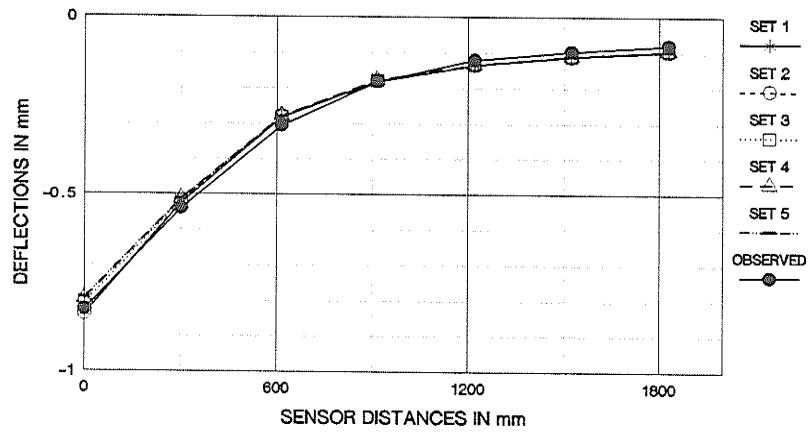


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

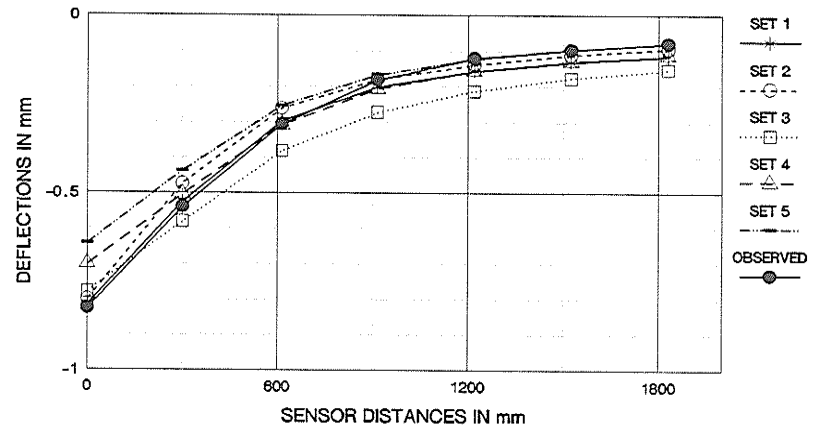
BRANDON: RWY . 08-26: STA . 5 + 900: LOAD 844 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

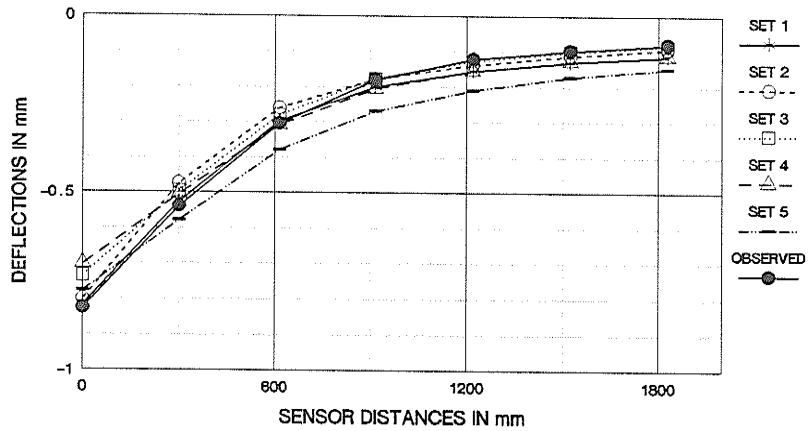
OPTIMIZING CRITERION: *AREA* OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

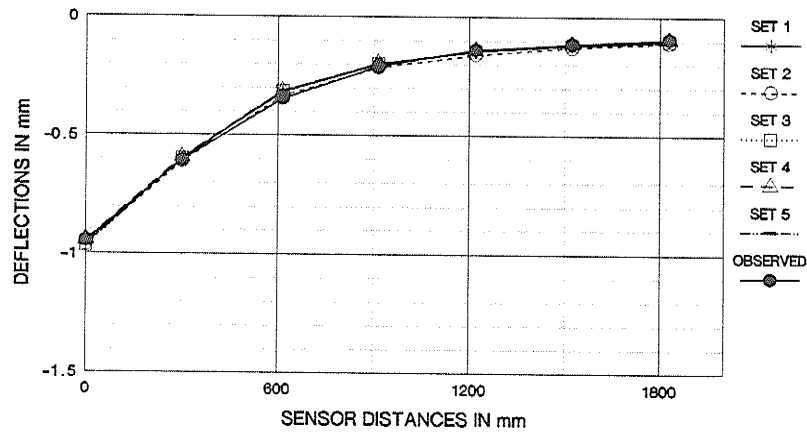


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

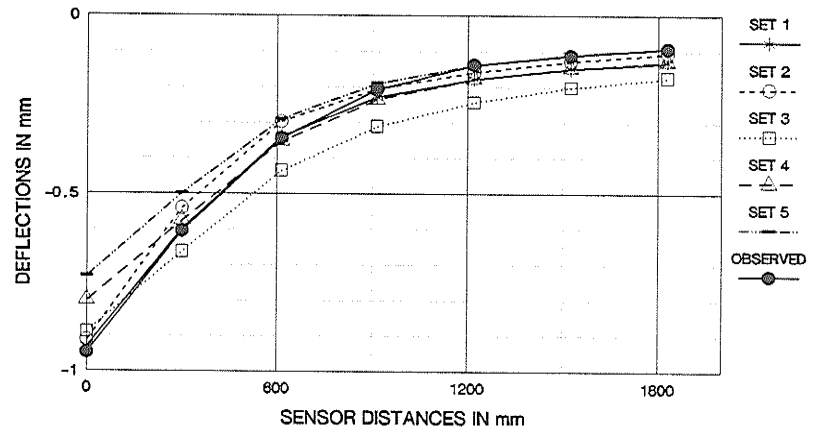
BRANDON: RWY . 08-26: STA . 5 + 900: LOAD 1192 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

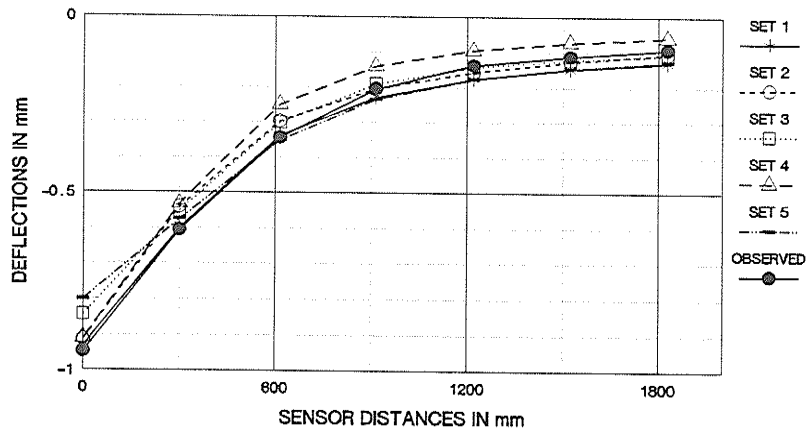
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

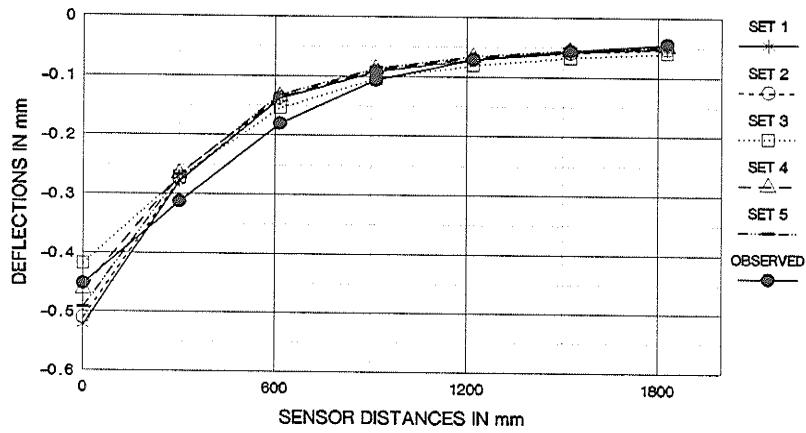


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

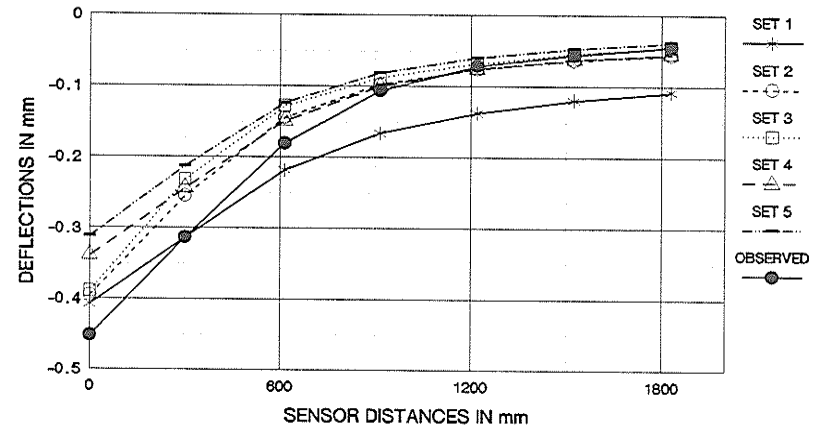
BRANDON: RWY. 08-26: STA. 5 + 900: LOAD 1360 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

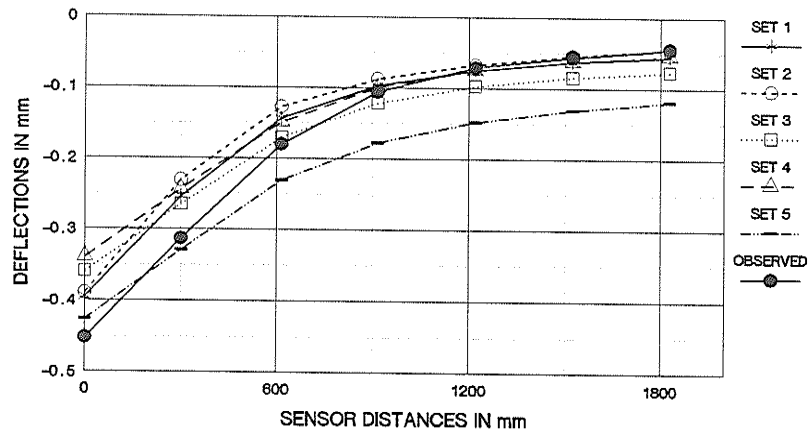
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

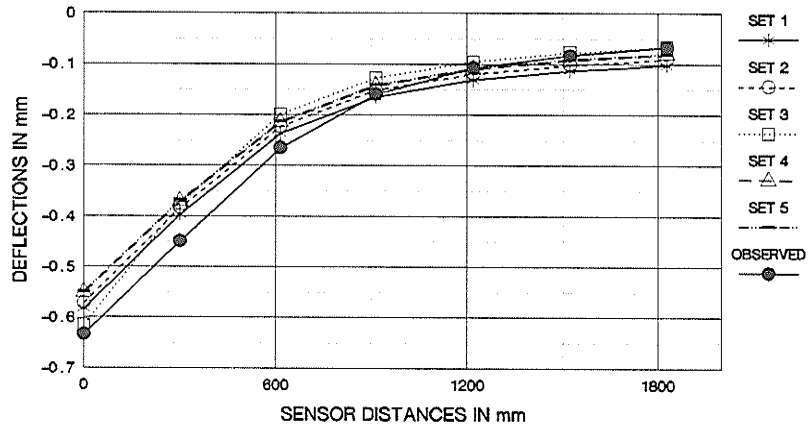


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

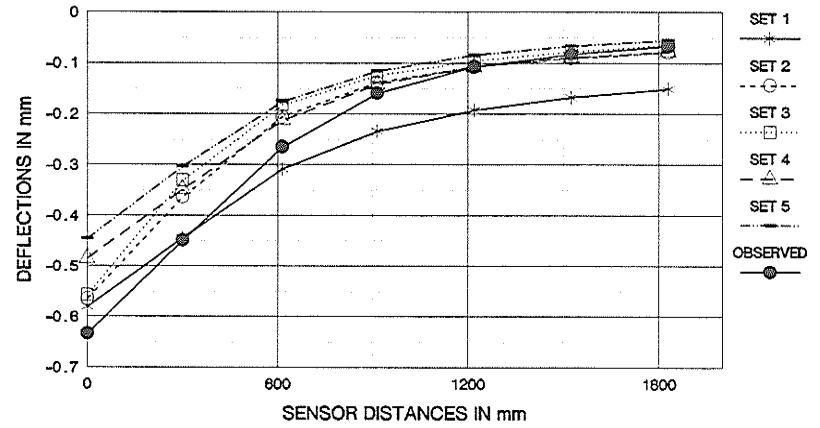
BRANDON: RWY. 08-26: STA. 6+ 300: LOAD 576 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

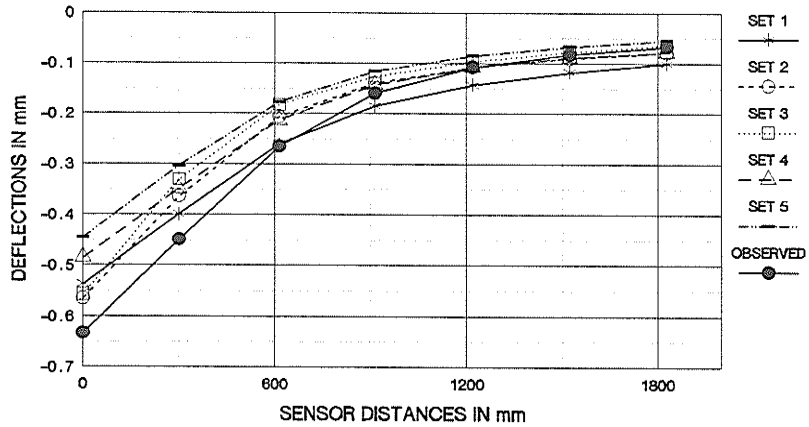
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

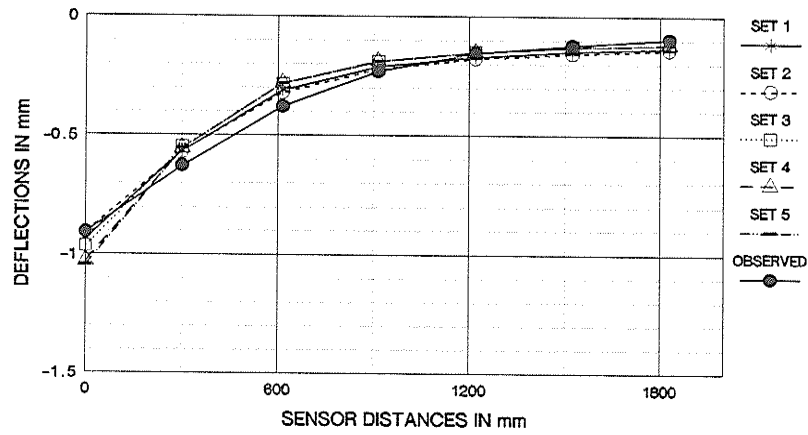


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

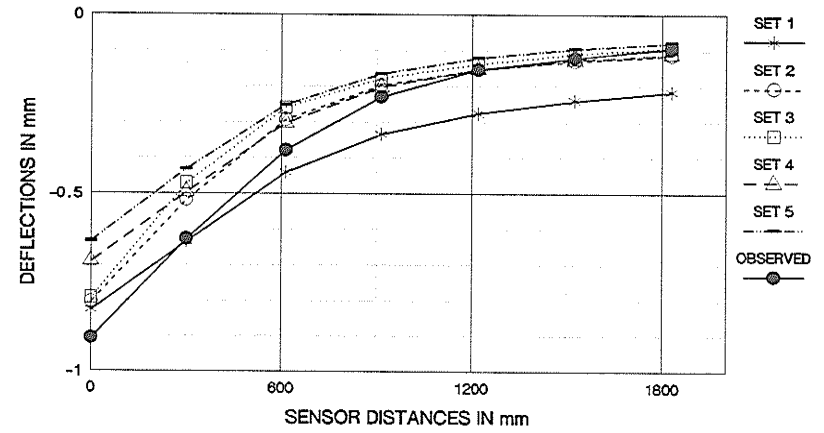
BRANDON: RWY . 08-26: STA . 6+ 300: LOAD 824 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

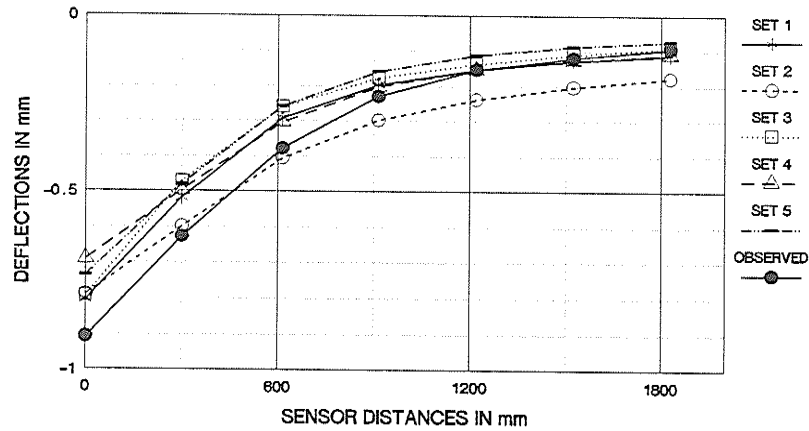
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

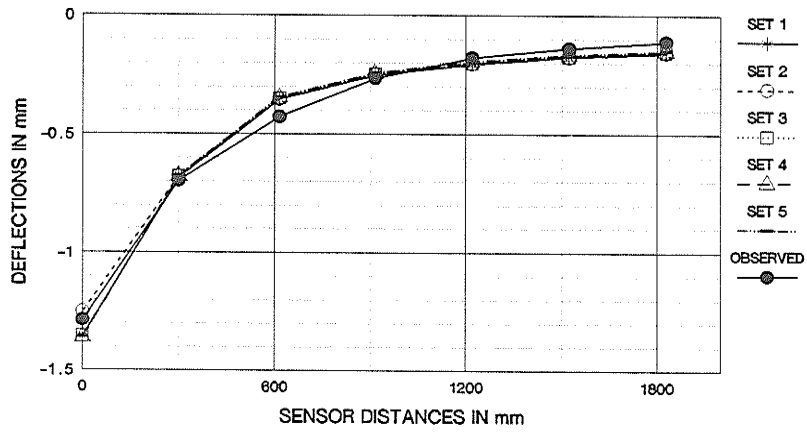


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

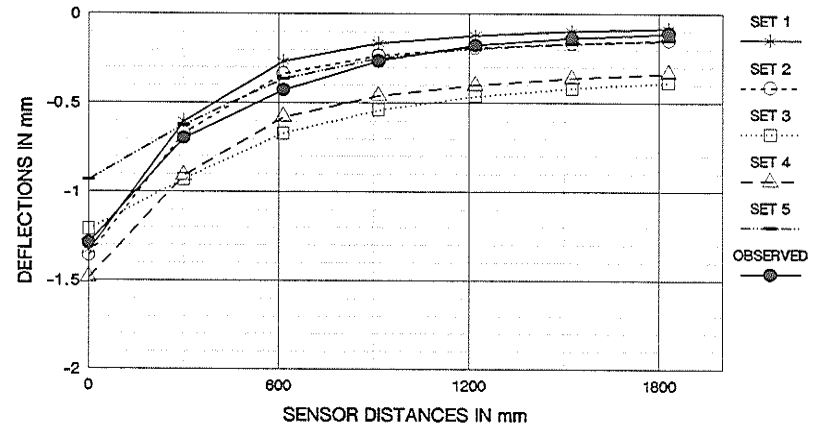
BRANDON: RWY . 08-26: STA . 6+ 300: LOAD 1173 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

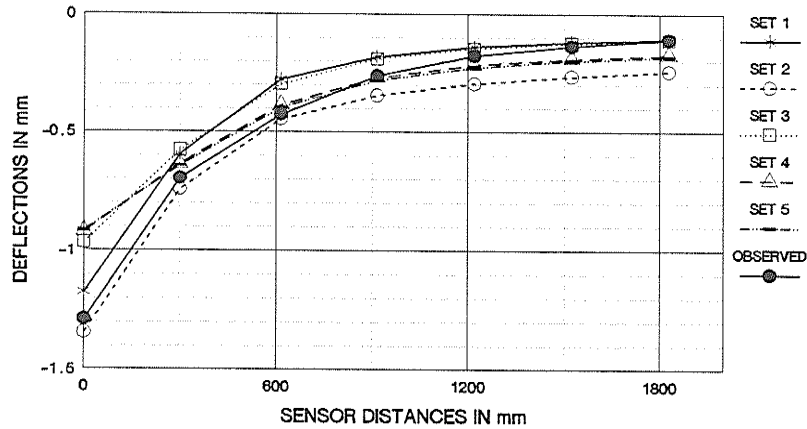
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

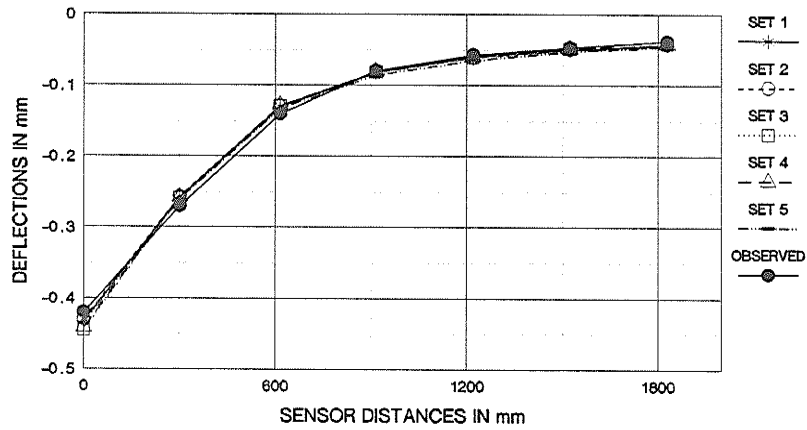


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

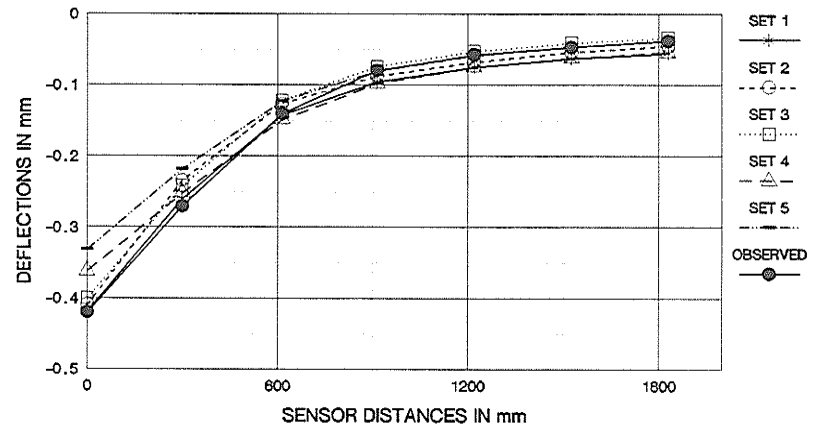
BRANDON: RWY. 08-26: STA. 6+ 300: LOAD 1341 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

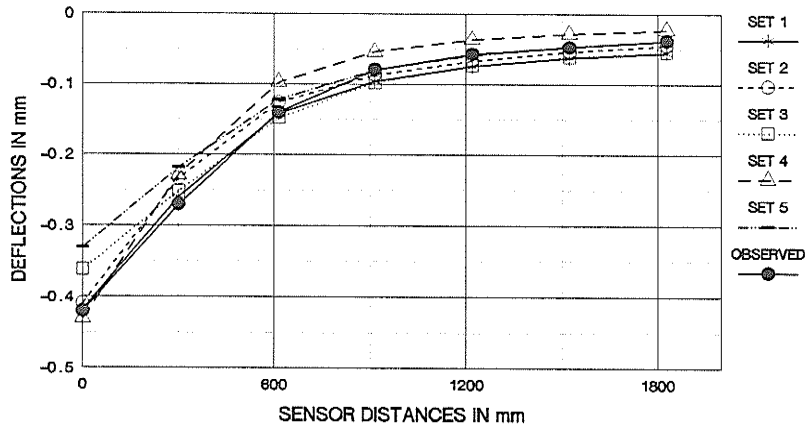
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

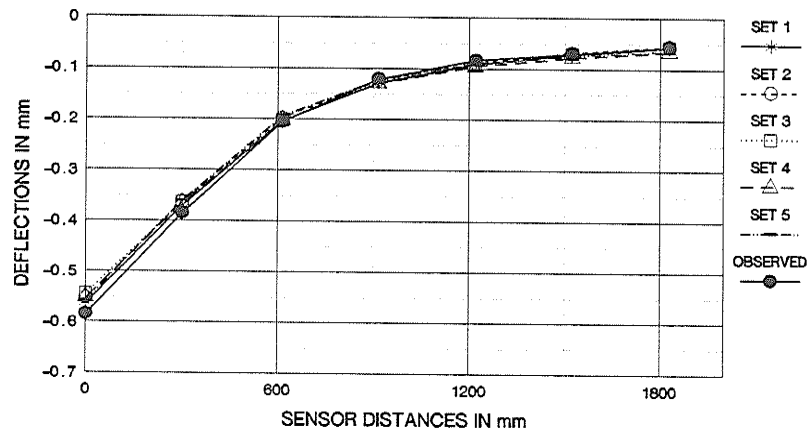


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

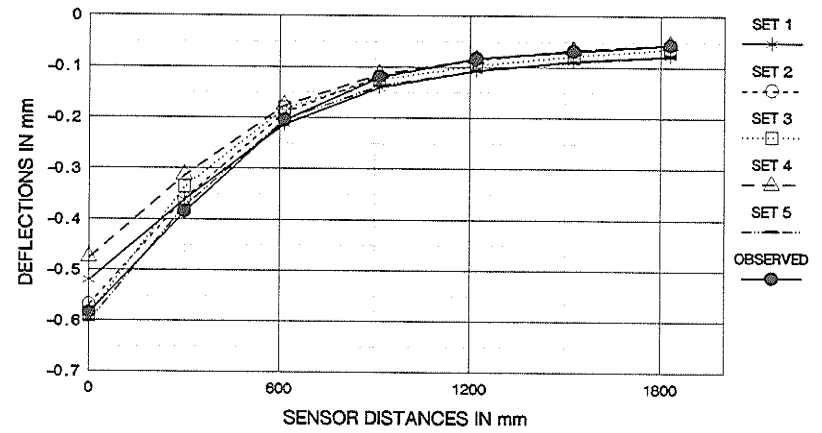
BRANDON: RWY . 08-26: STA . 6+ 500: LOAD 574 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

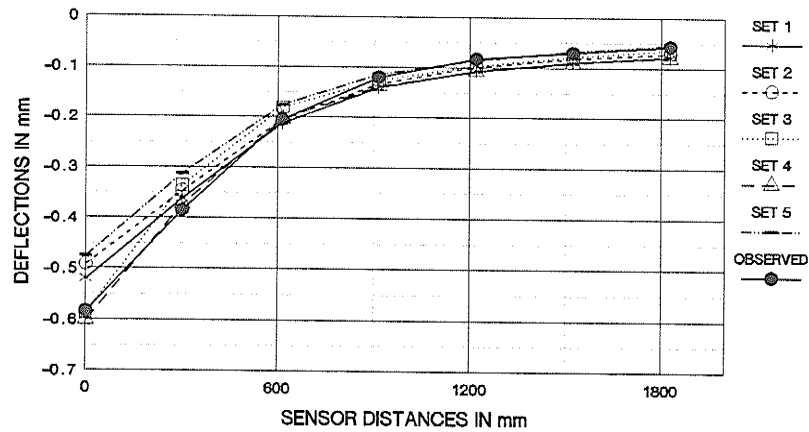
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

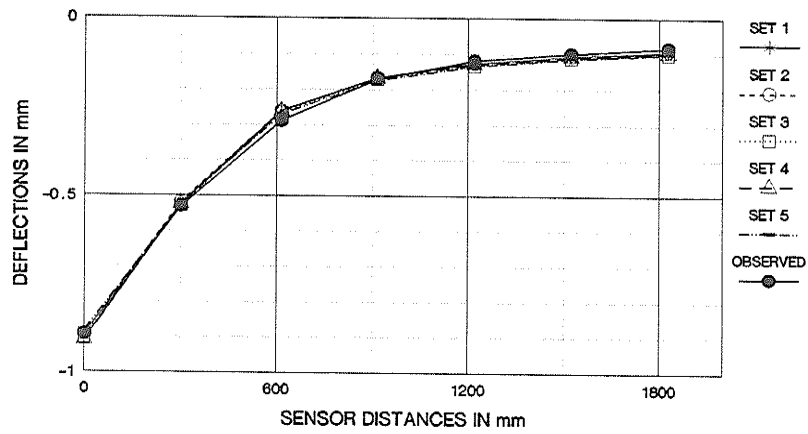


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

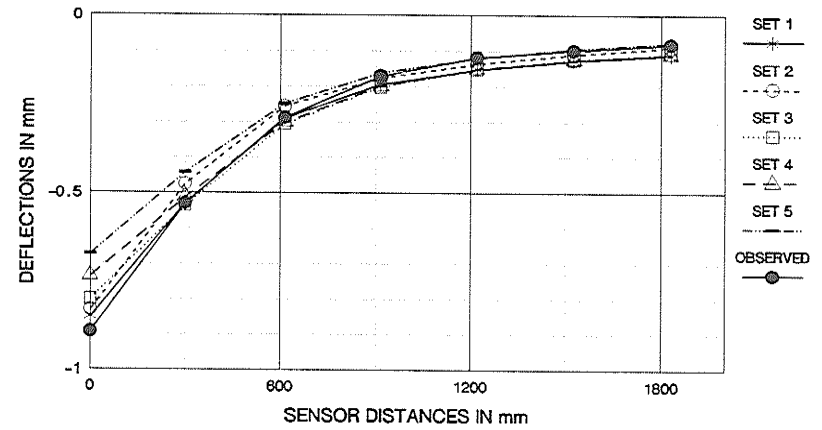
BRANDON: RWY . 08-26: STA. 6+ 500: LOAD 825 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

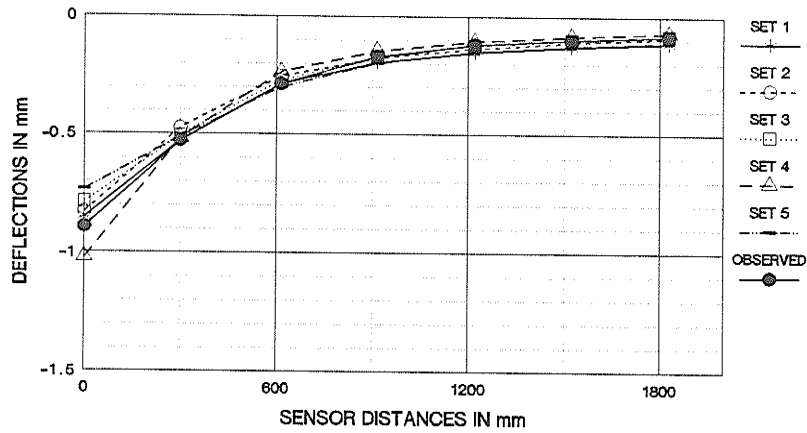
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

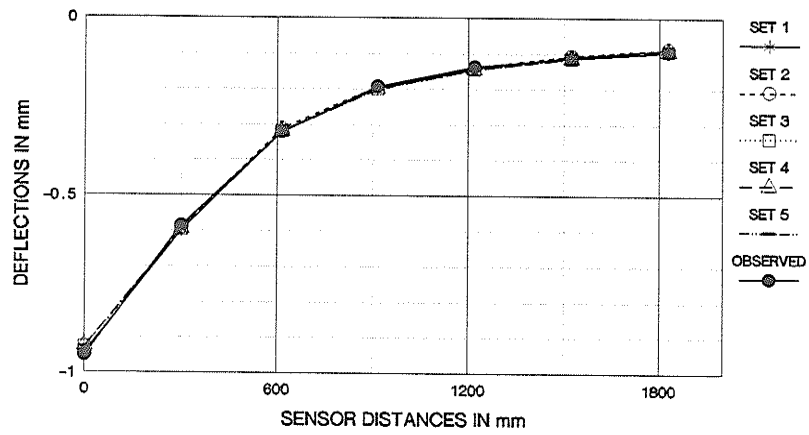


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

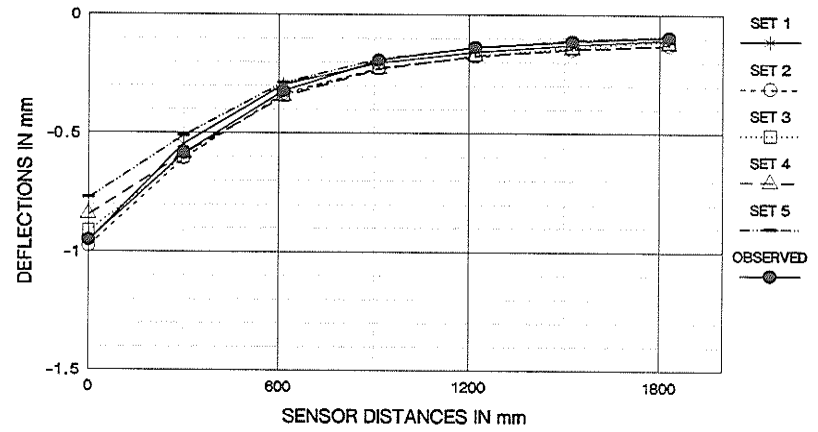
BRANDON: RWY . 08-26: STA . 6+ 500: LOAD 1167 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

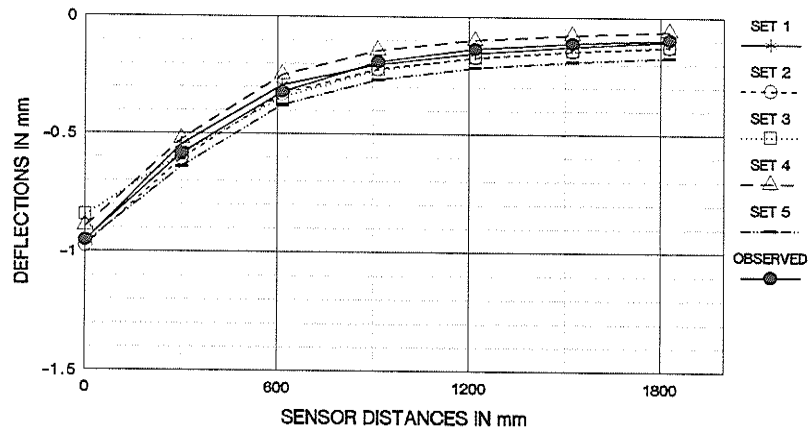
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

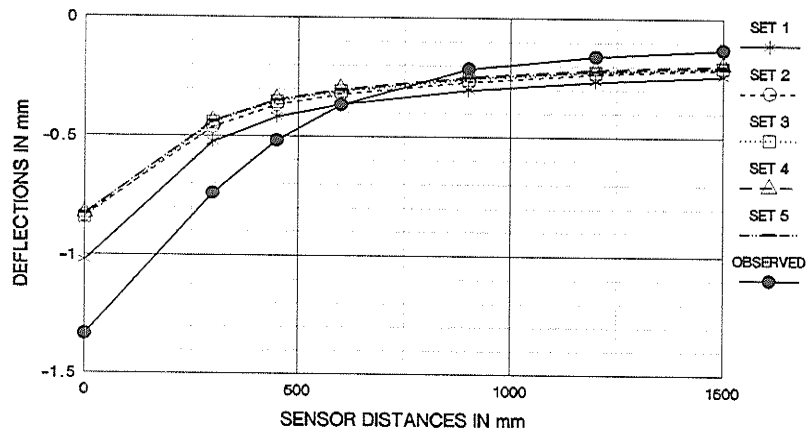


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

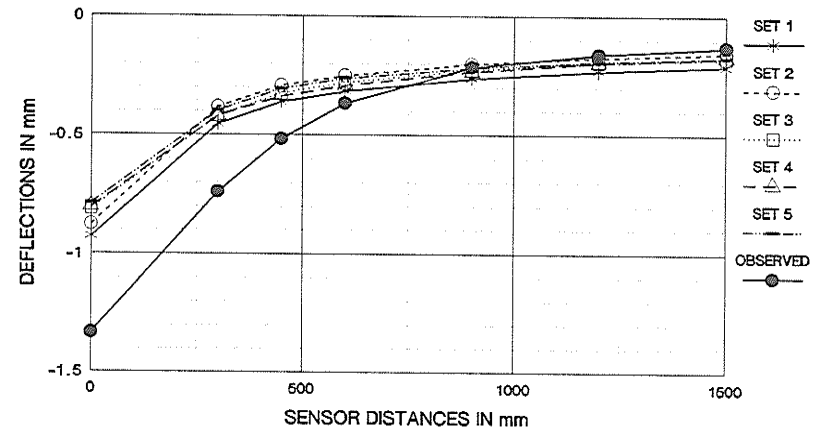
BRANDON: RWY. 08-26: STA. 6+ 500: LOAD 1340 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

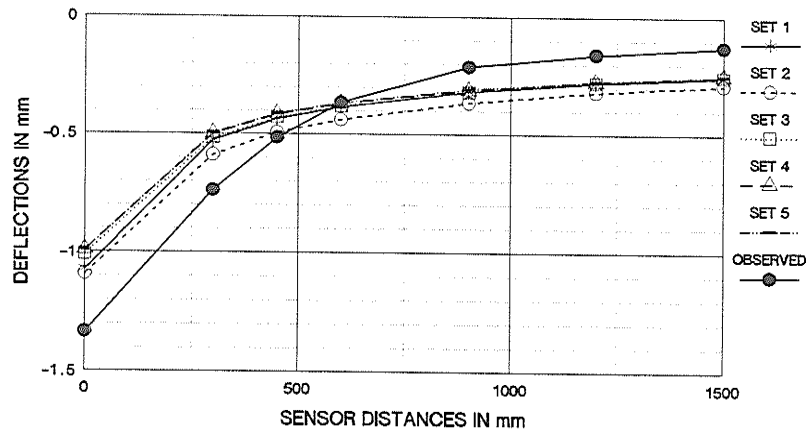
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

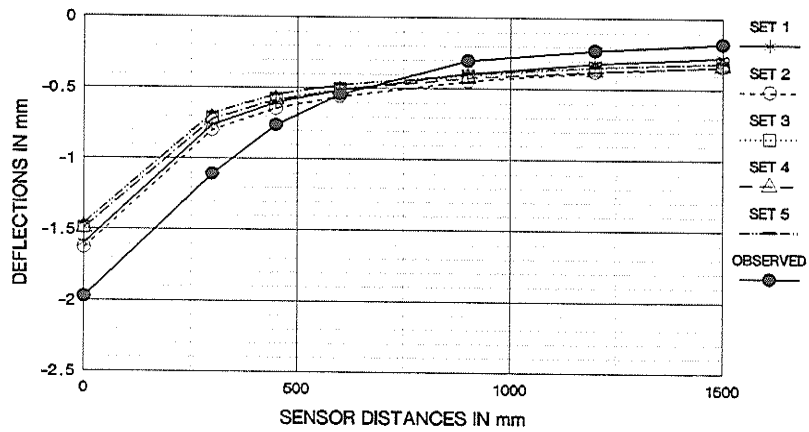


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

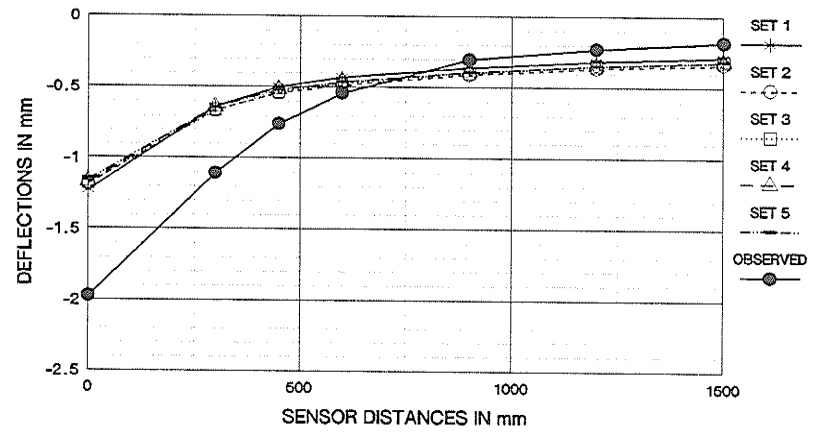
ST. ANDREWS: RWY 13-31: STA. 5+ 030: LOAD 522 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

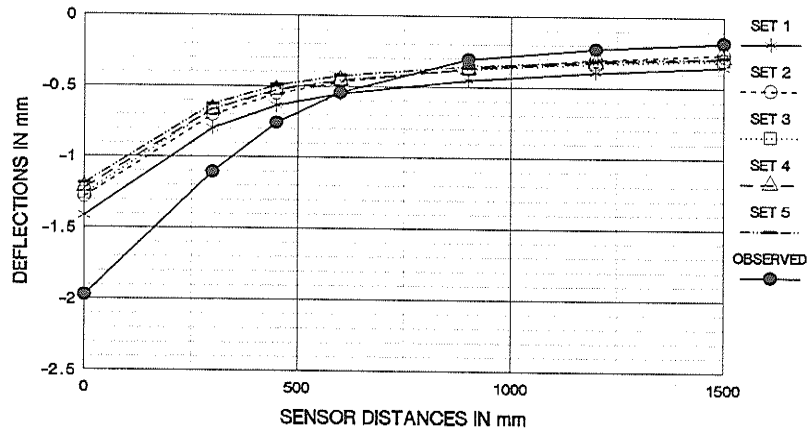
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

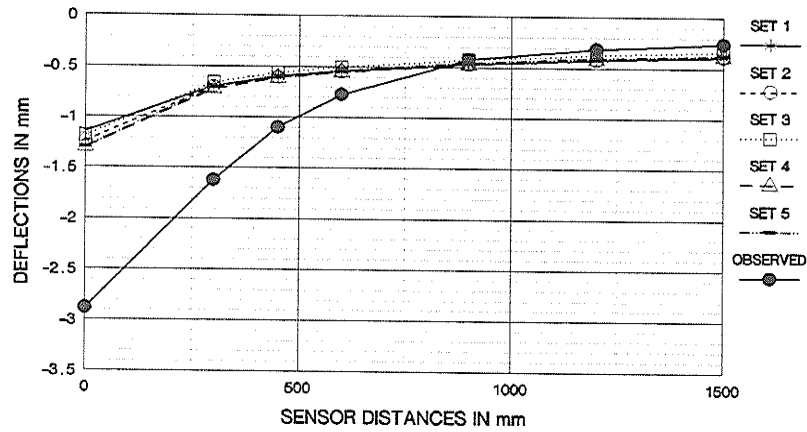


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

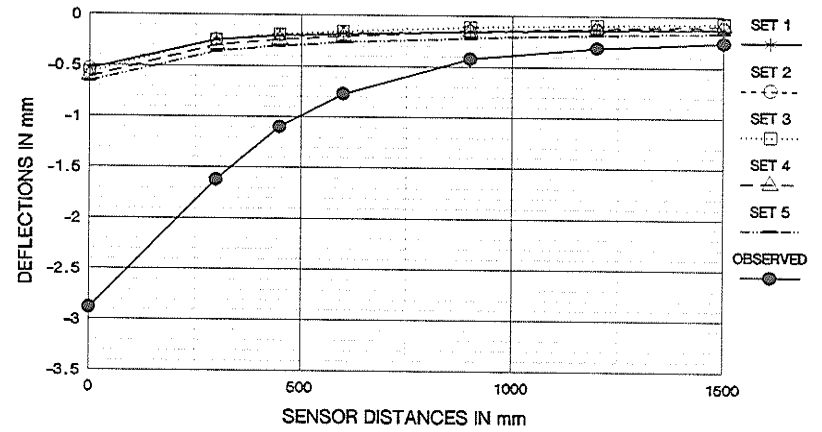
ST. ANDREWS: RWY 13-31: STA. 5+ 030: LOAD 708 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

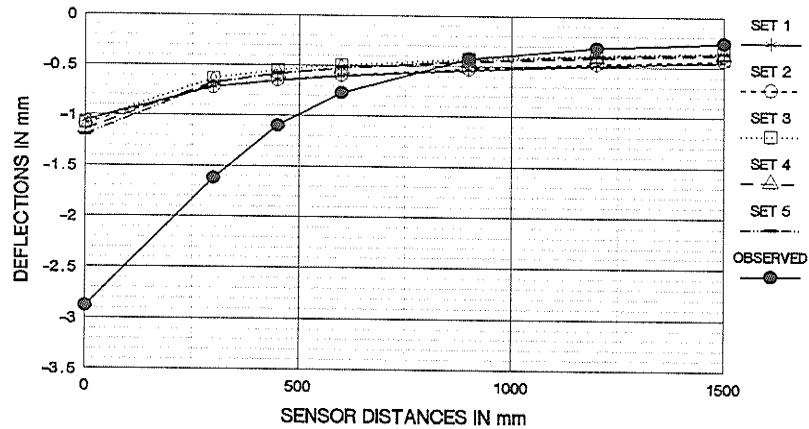
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

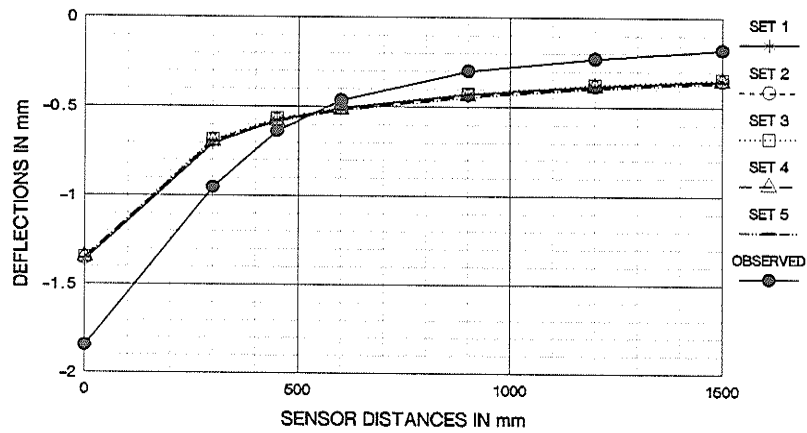


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

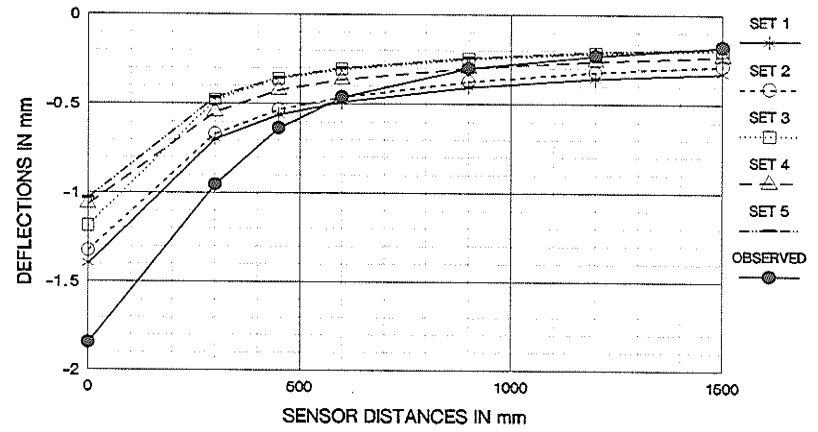
ST. ANDREWS: RWY 13-31: STA. 5+ 030: LOAD 960 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

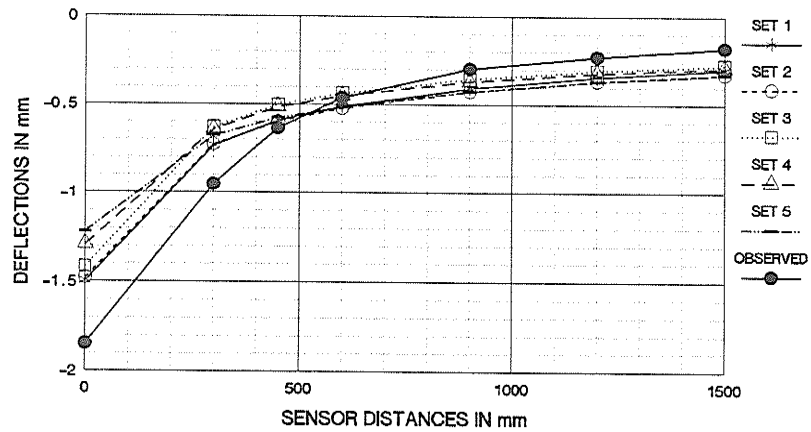
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

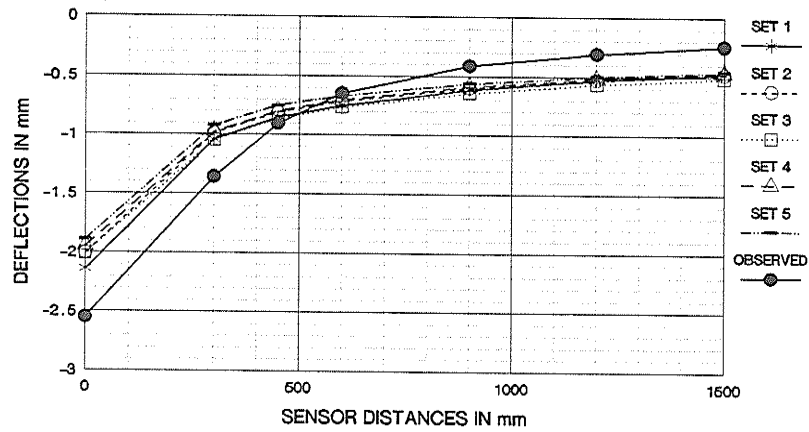


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

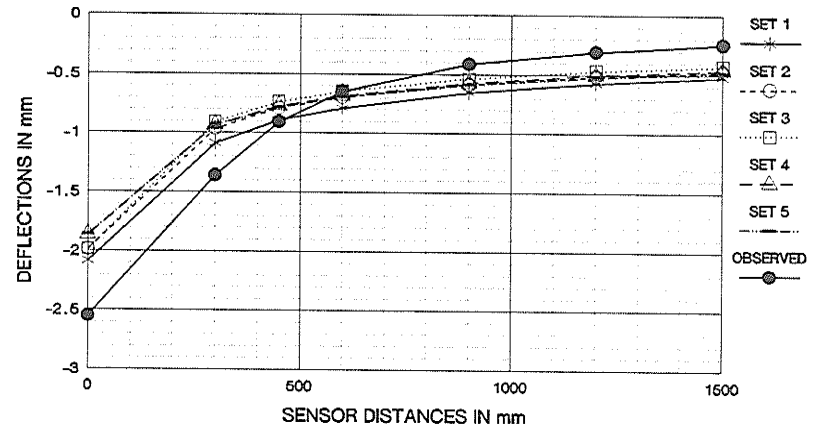
ST. ANDREWS: RWY 13-31: STA. 5+ 120: LOAD 686 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

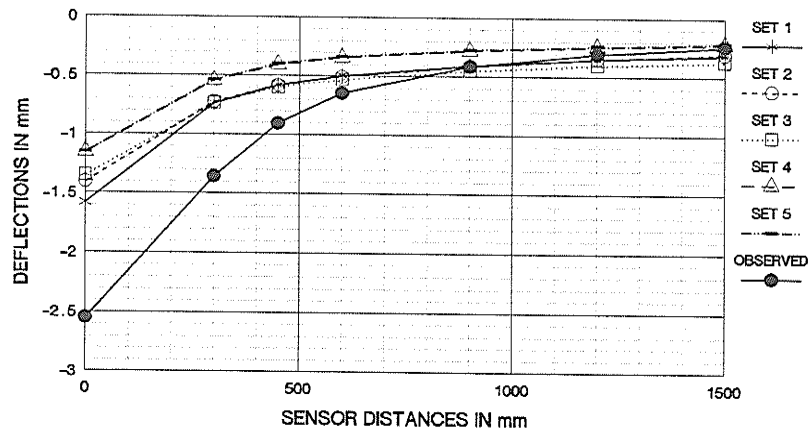
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

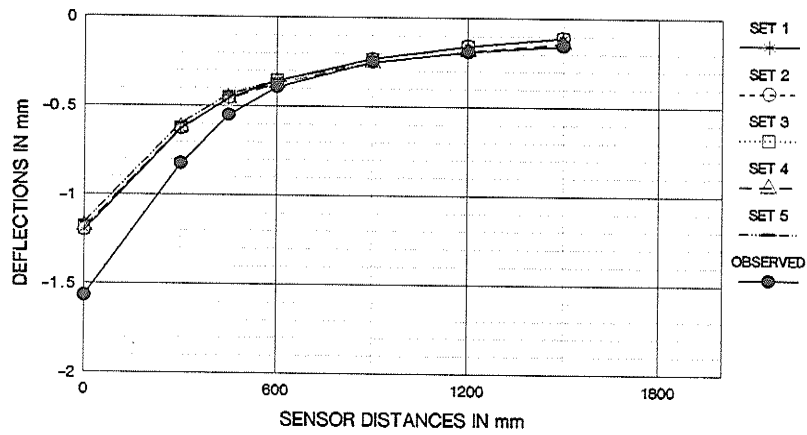


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

ST. ANDREWS: RWY 13-31: STA. 5+ 120: LOAD 936 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

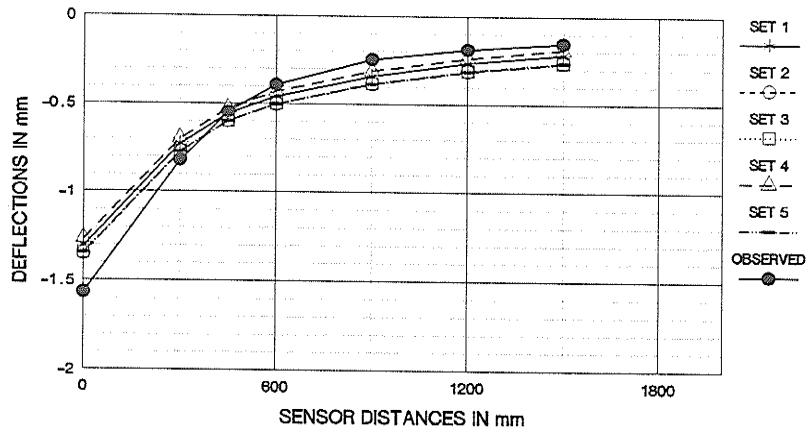
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

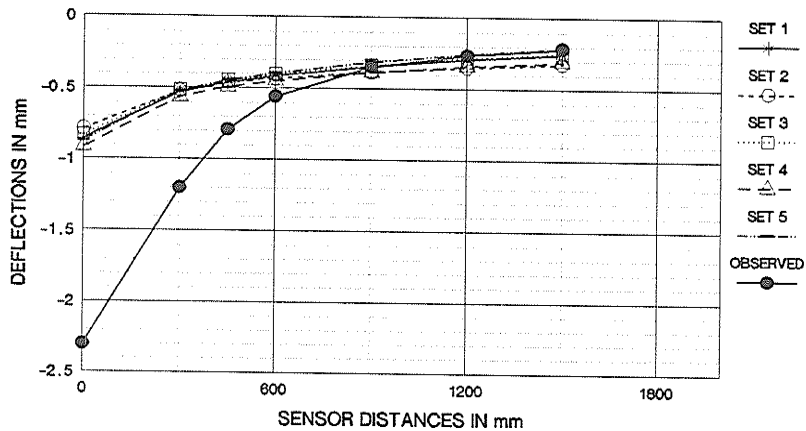


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

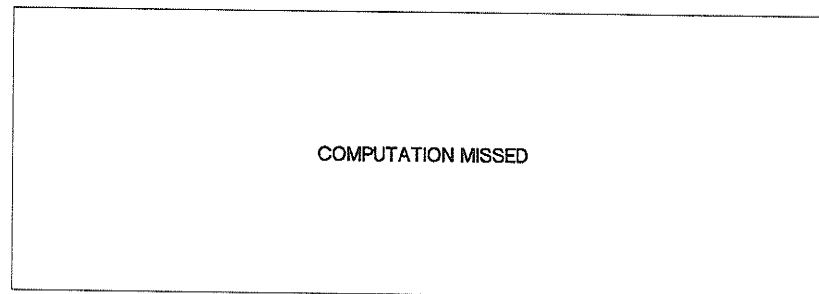
ST. ANDREWS: RWY 13-31: STA. 5+ 210: LOAD 676 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

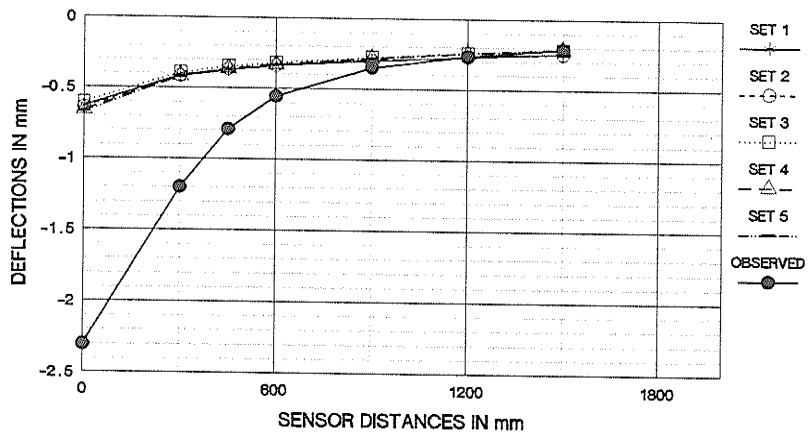
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

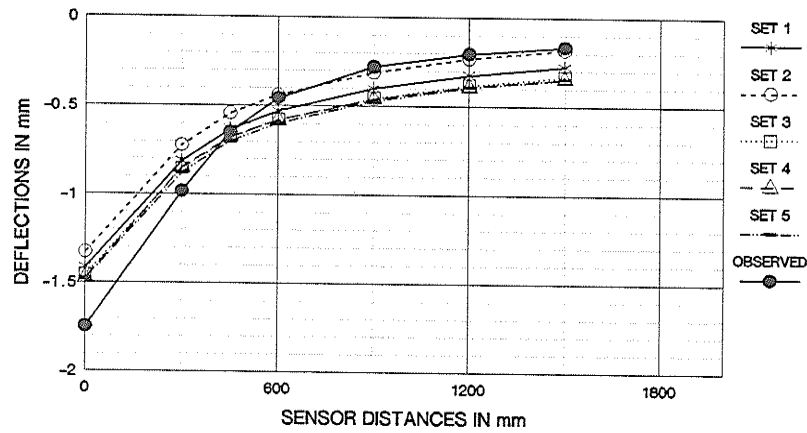


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

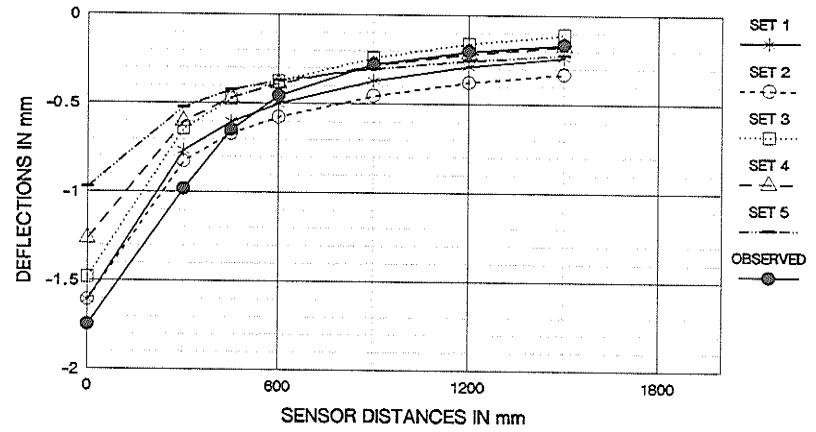
ST. ANDREWS: RWY 13-31: STA. 5+ 210: LOAD 942 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

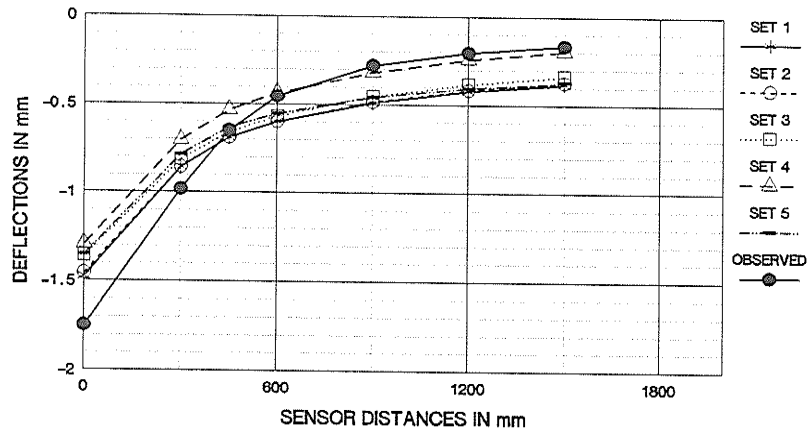
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

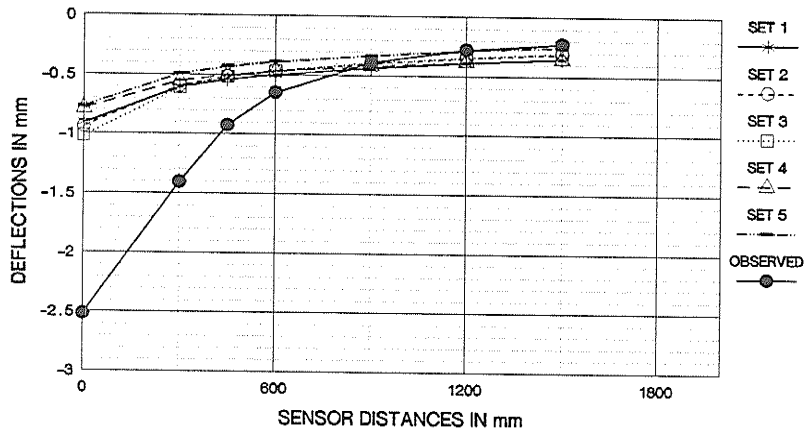


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

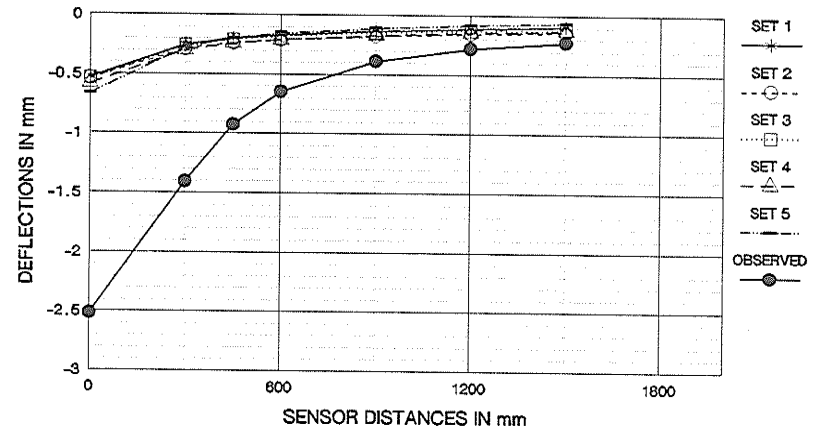
ST. ANDREWS: RWY 13-31: STA. 5+ 300: LOAD 675 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

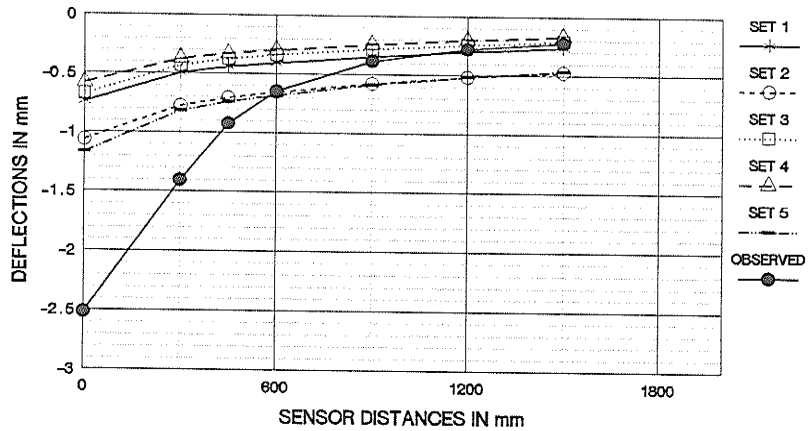
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

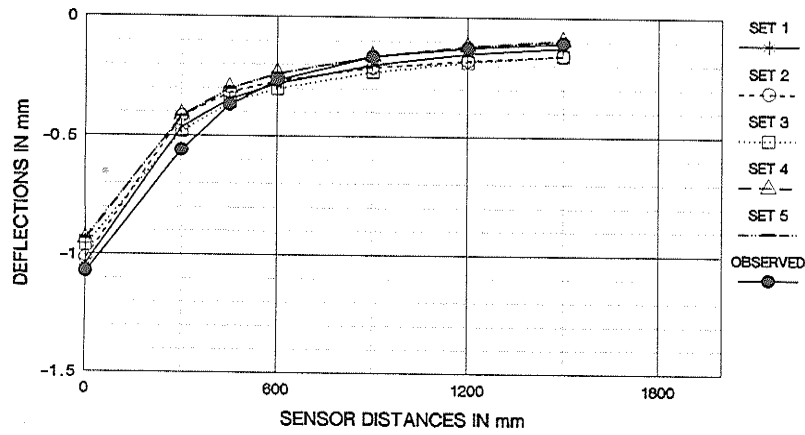


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

ST. ANDREWS: RWY 13-31: STA. 5+ 300: LOAD 913 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

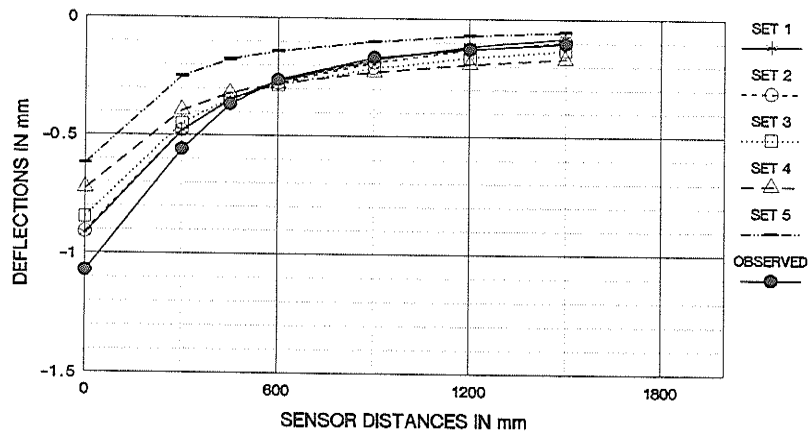
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

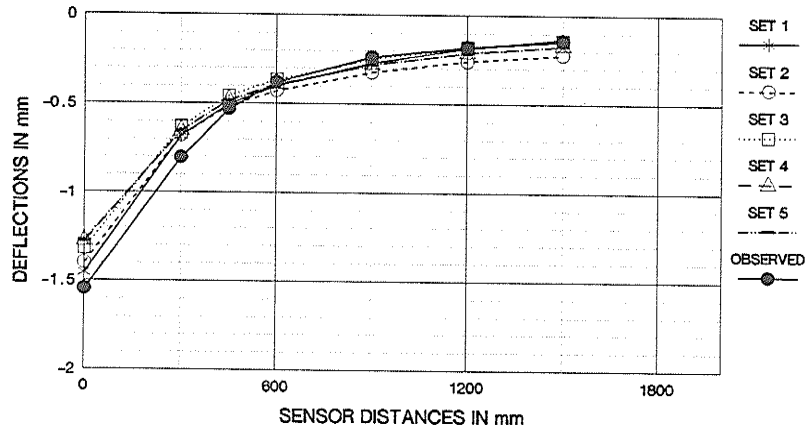


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

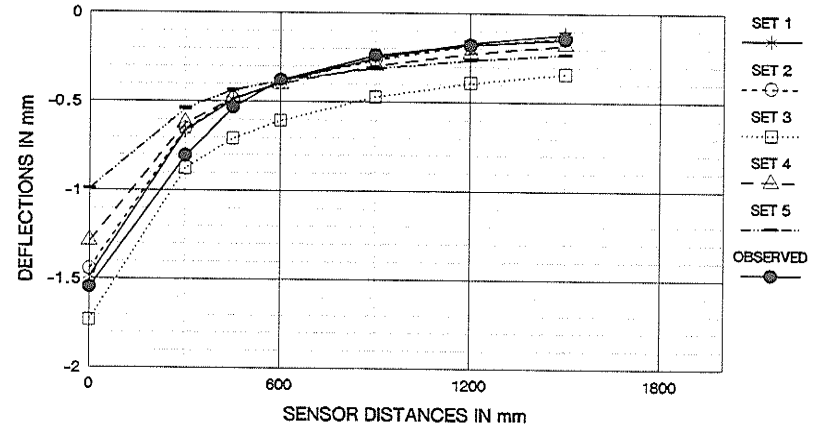
ST. ANDREWS: RWY 13-31: STA. 5+ 390: LOAD 513 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

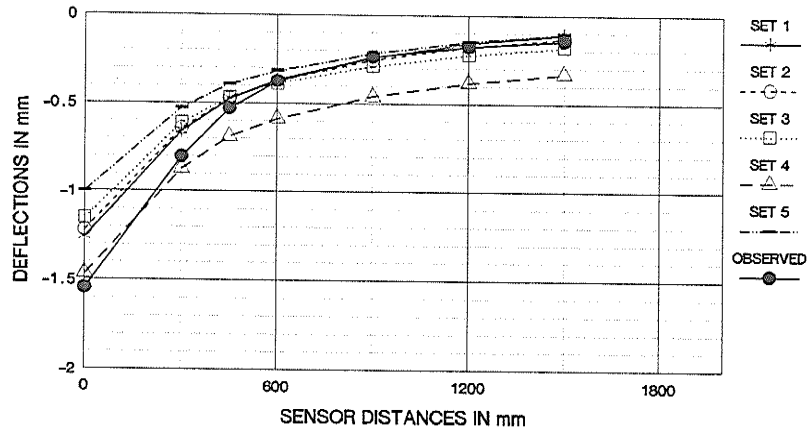
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

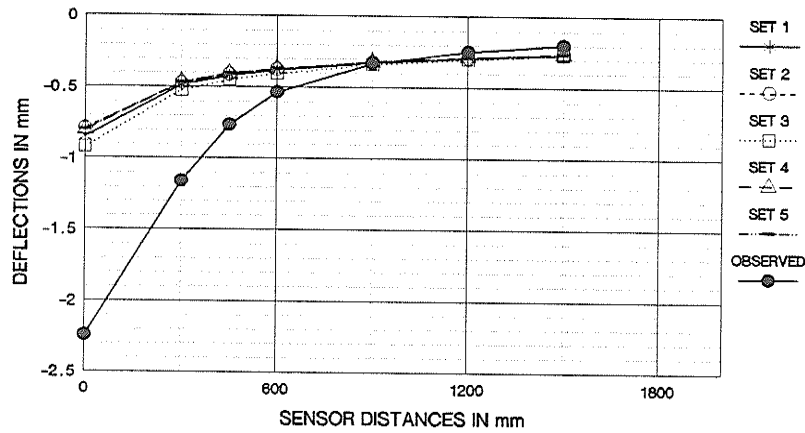


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

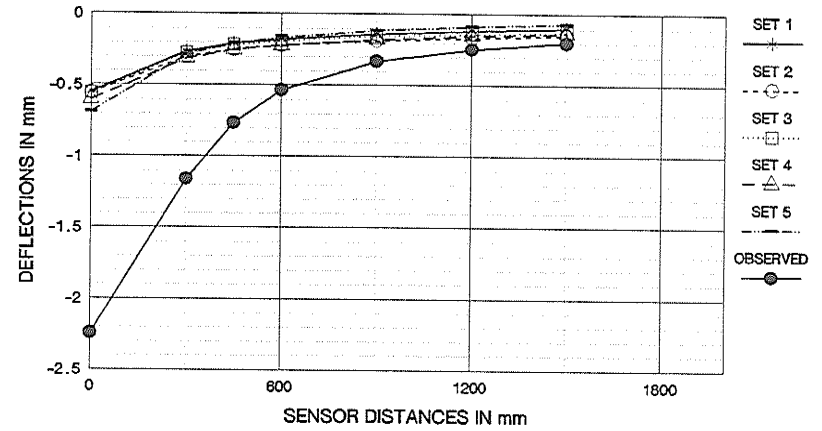
ST . ANDREWS: RWY 13-31: STA . 5+ 390: LOAD 698 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

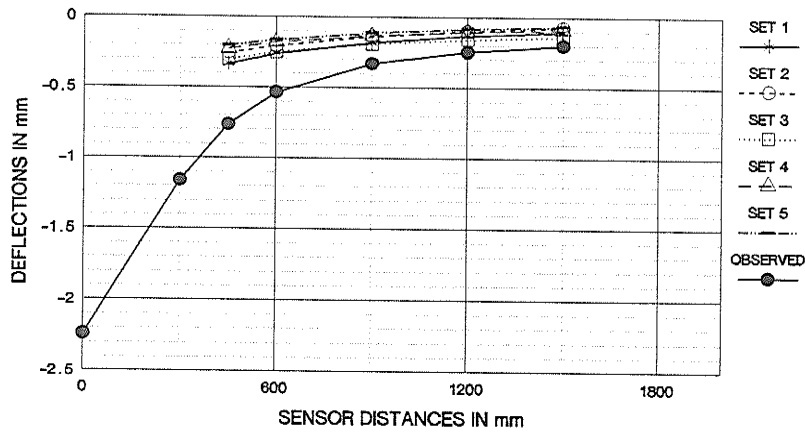
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

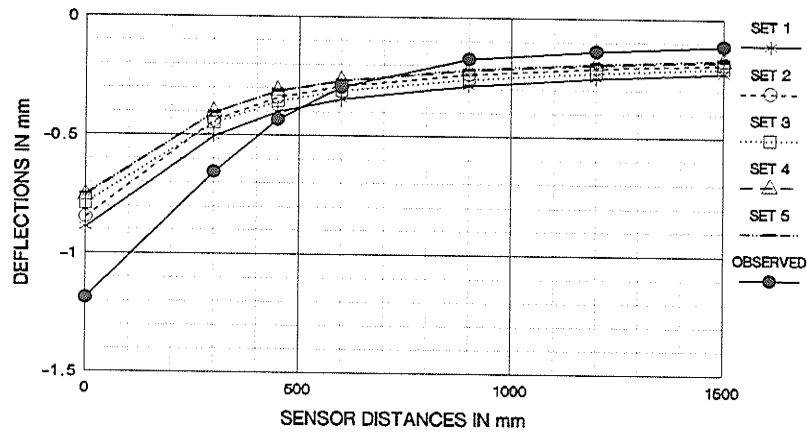


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

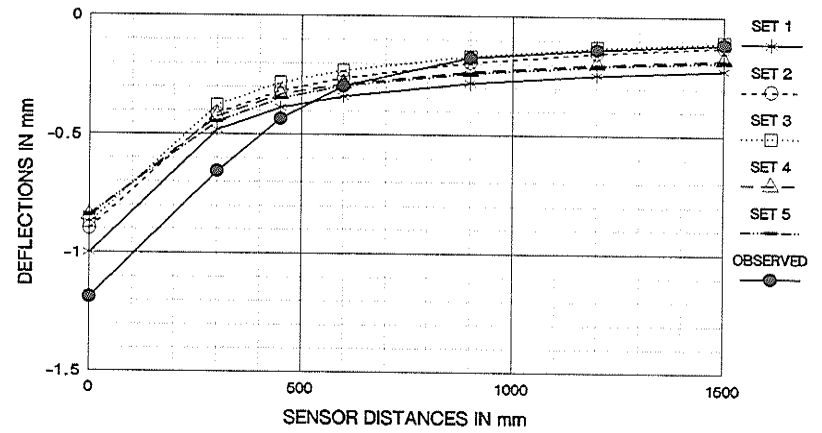
ST. ANDREWS: RWY 13-31: STA. 5+ 390: LOAD 959 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

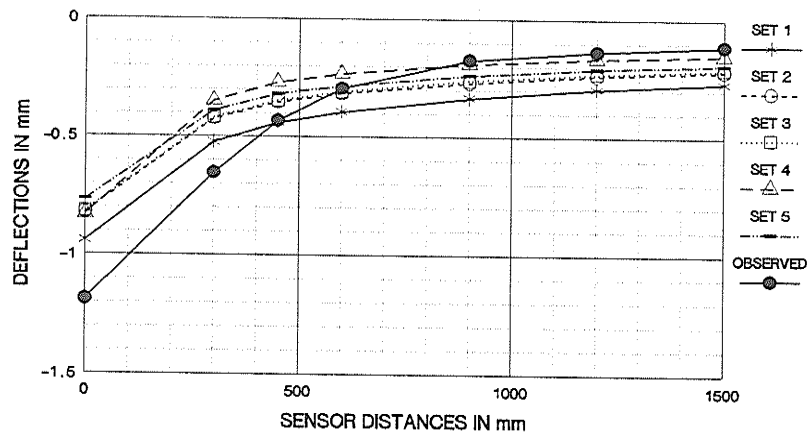
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

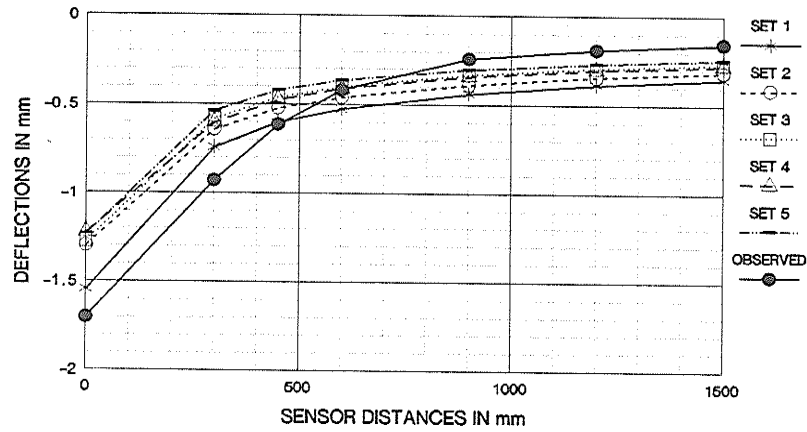


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

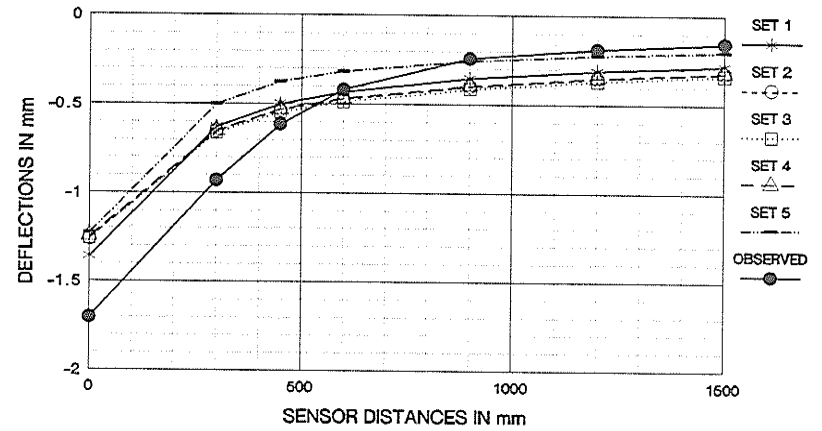
ST. ANDREWS: RWY 13-31: STA. 5+ 480: LOAD 500 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

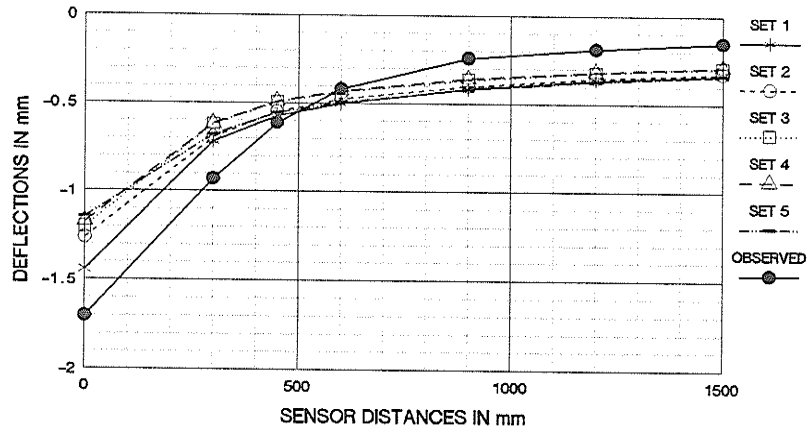
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

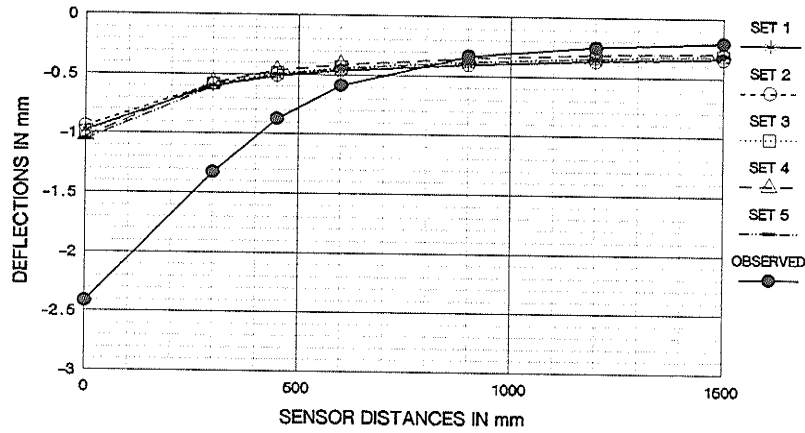


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

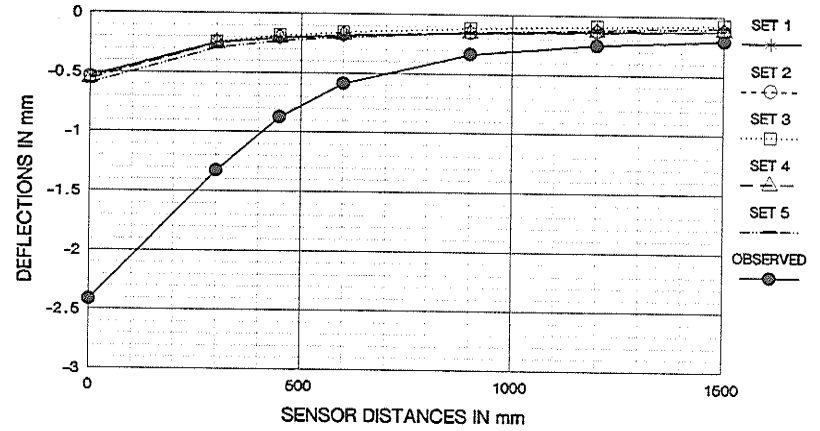
ST. ANDREWS: RWY 13-31: STA. 5+ 480: LOAD 704 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

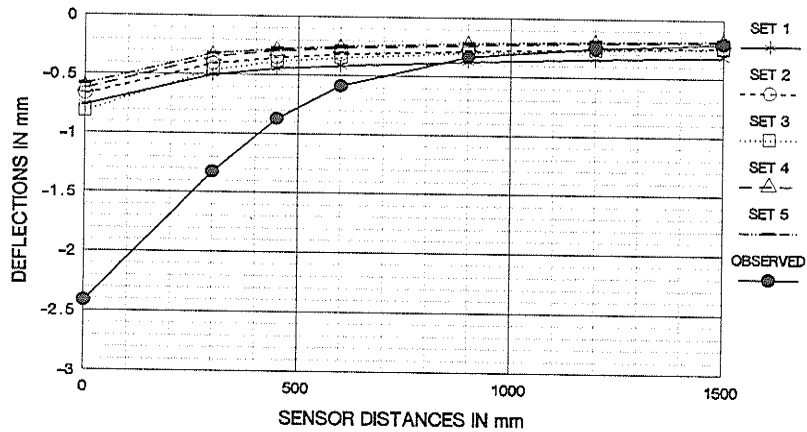
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

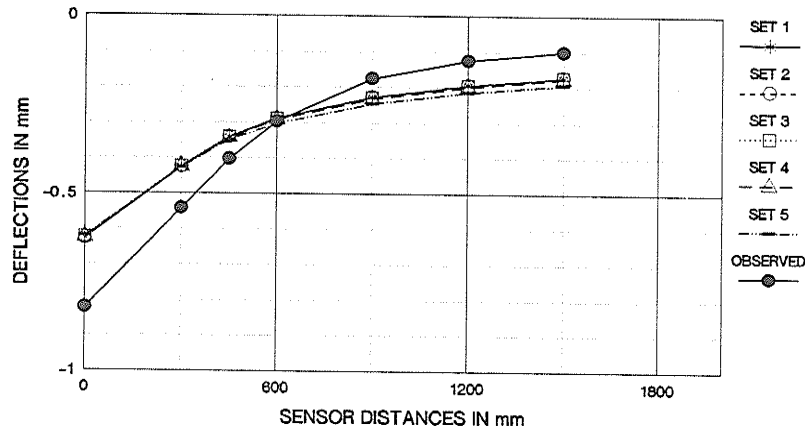


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

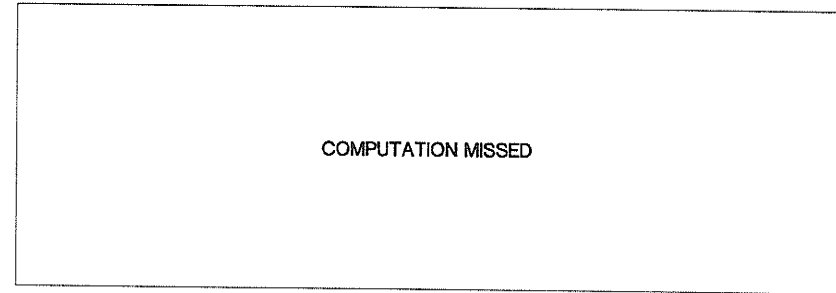
ST. ANDREWS: RWY 13-31: STA. 5+ 480: LOAD 962 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

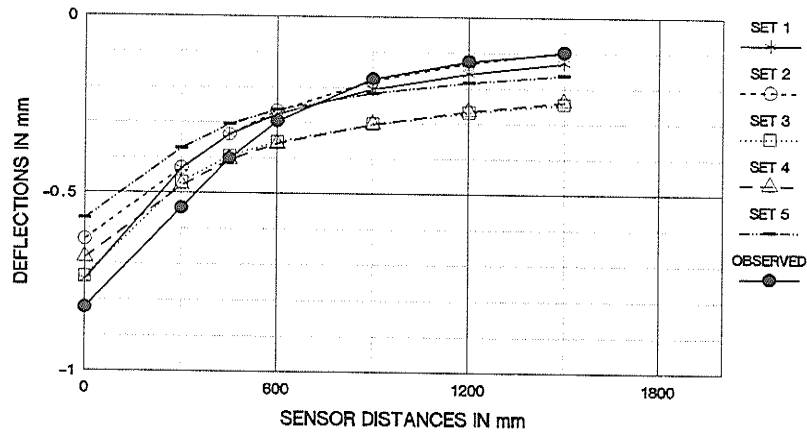
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

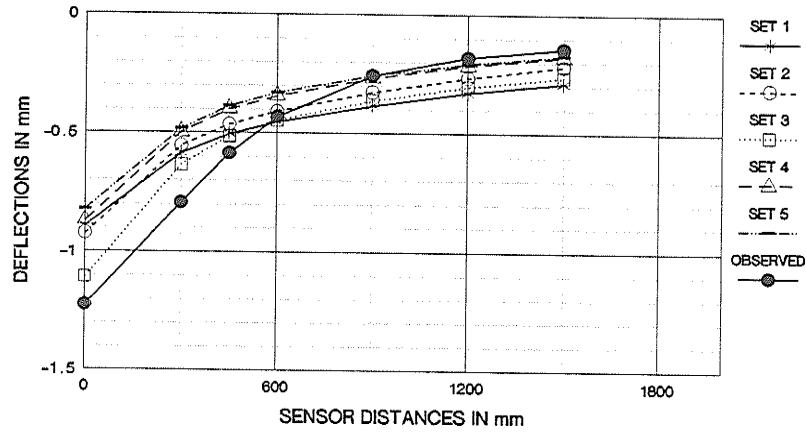


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

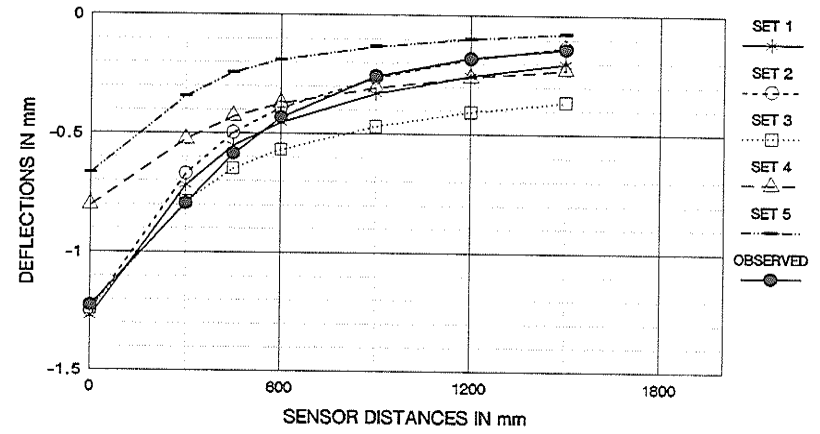
ST . ANDREWS: RWY 13-31: STA . 5+ 570: LOAD 493 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

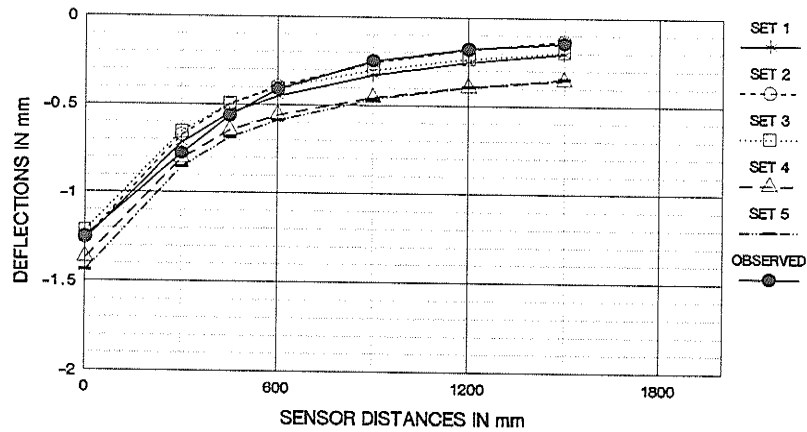
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

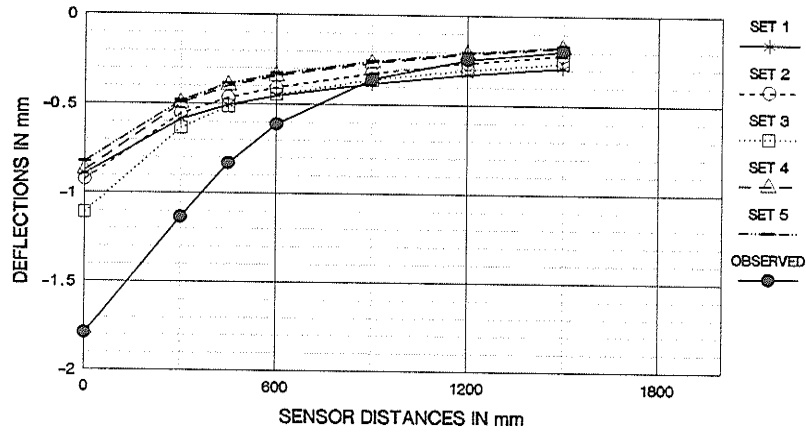


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

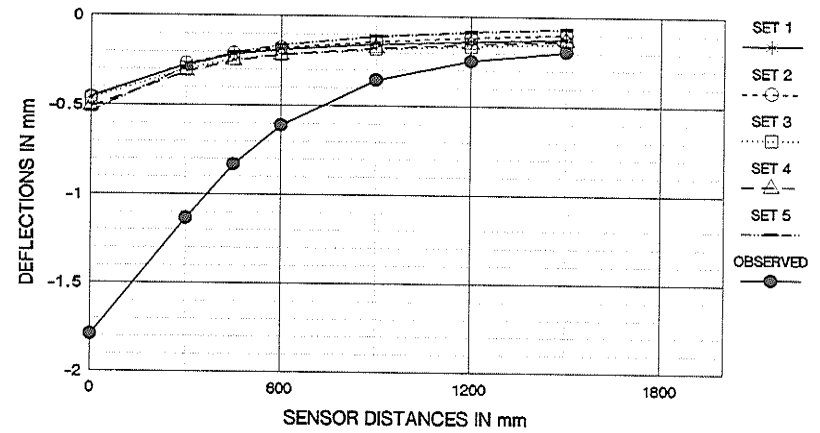
ST. ANDREWS: RWY 13-31: STA. 5+ 570: LOAD 710 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

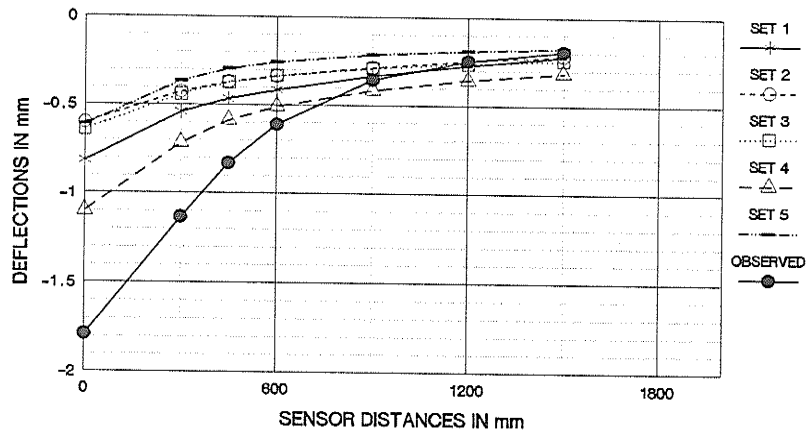
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

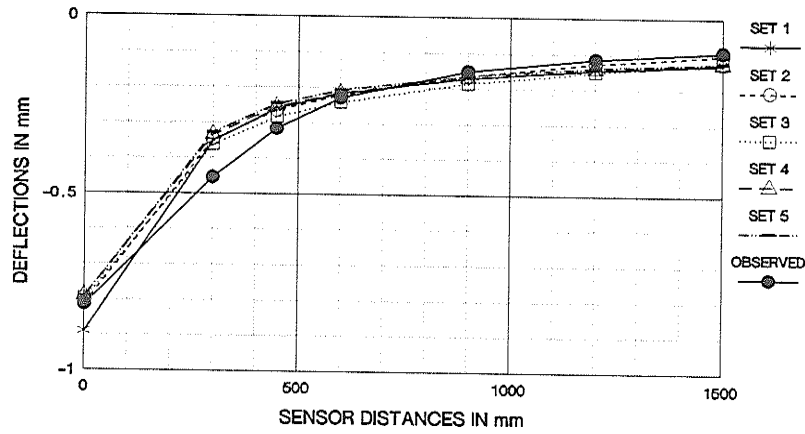


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

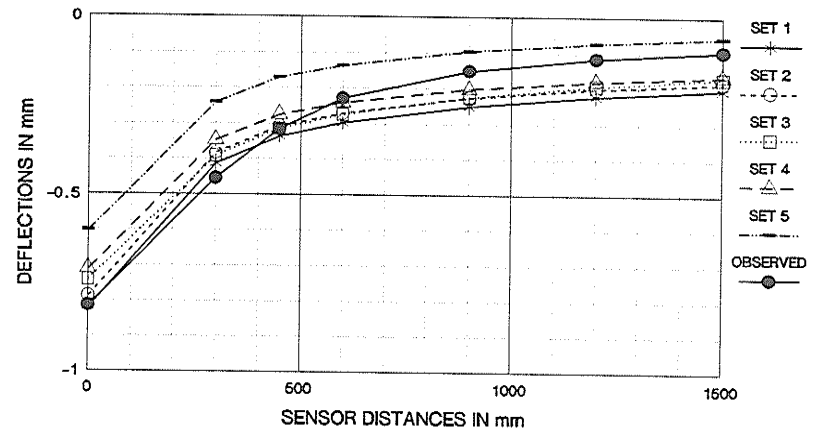
ST. ANDREWS: RWY 13-31: STA. 5+ 570: LOAD 967 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

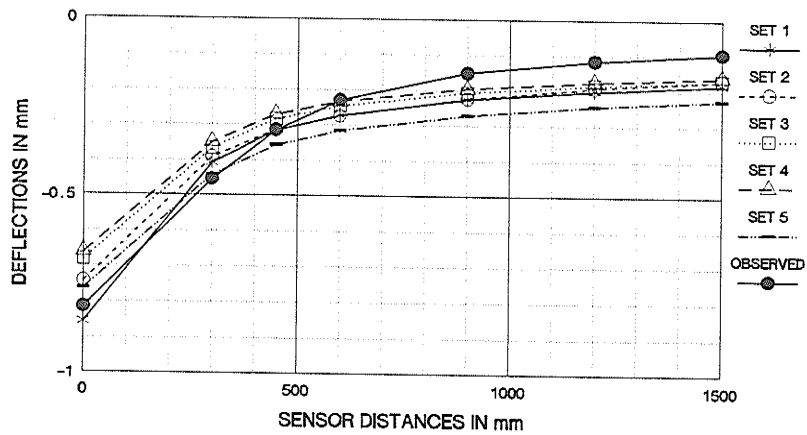
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

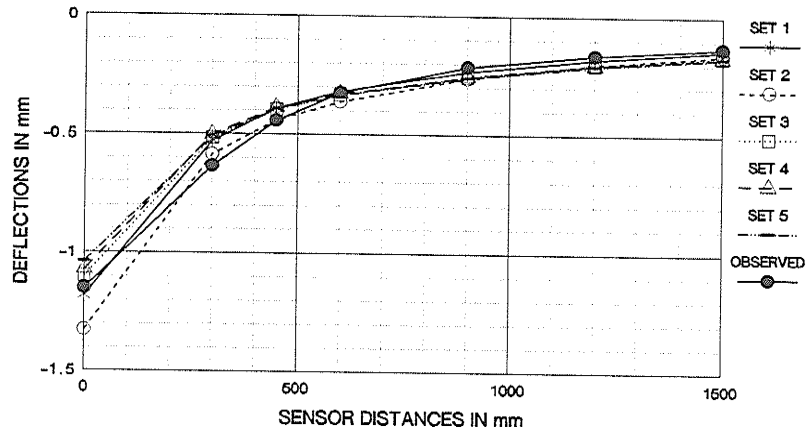


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

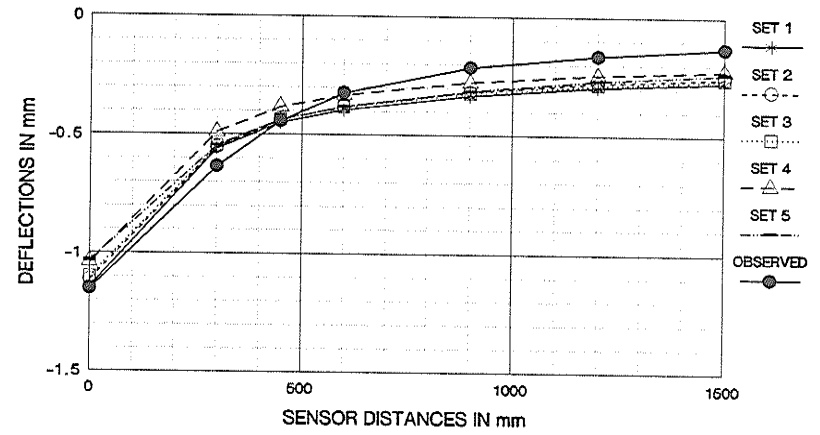
ST. ANDREWS: RWY 13-31: STA. 5+ 660: LOAD 511 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

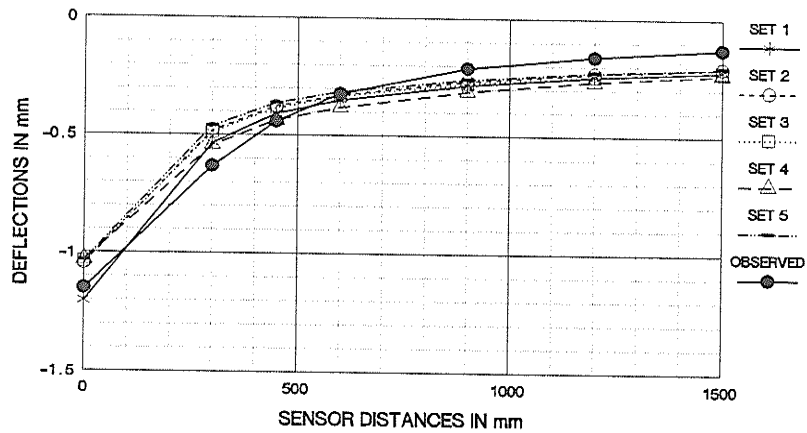
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

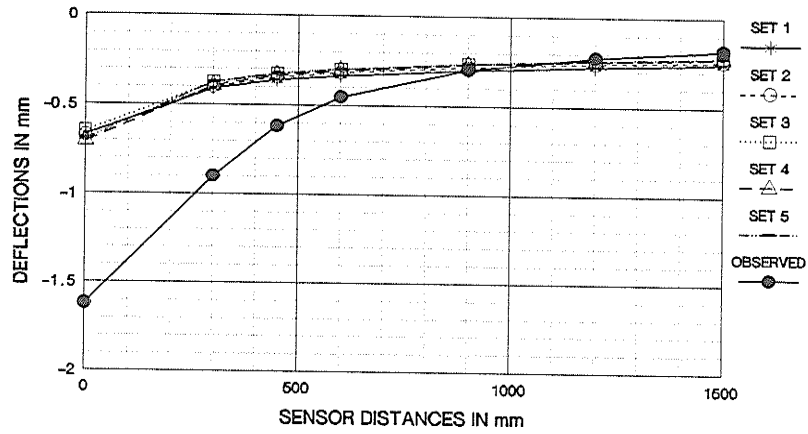


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

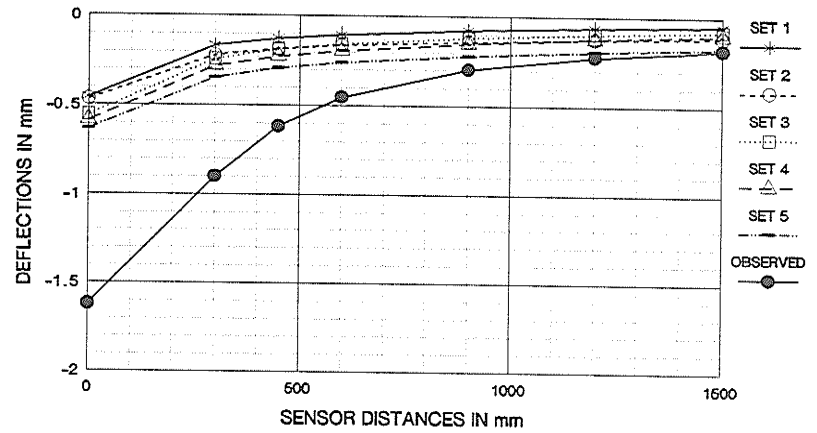
ST. ANDREWS: RWY 13-31: STA. 5+ 660: LOAD 711 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

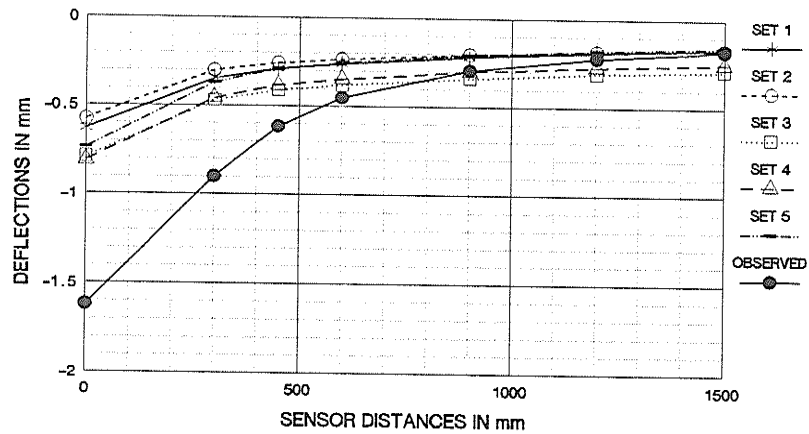
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

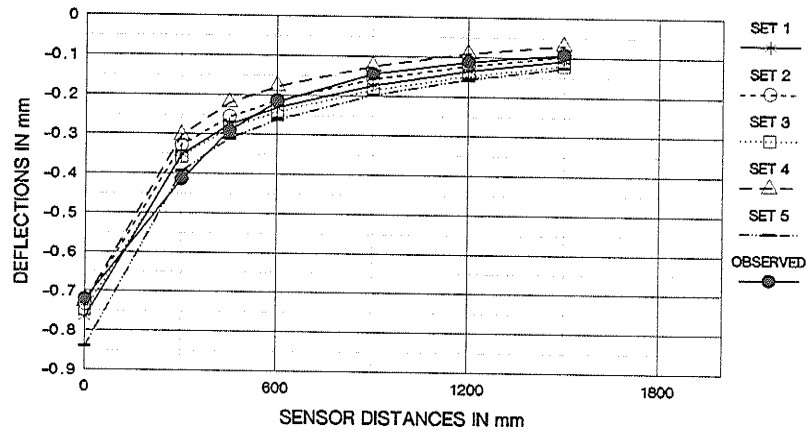


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

ST. ANDREWS: RWY 13-31: STA. 5+ 660: LOAD 982 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

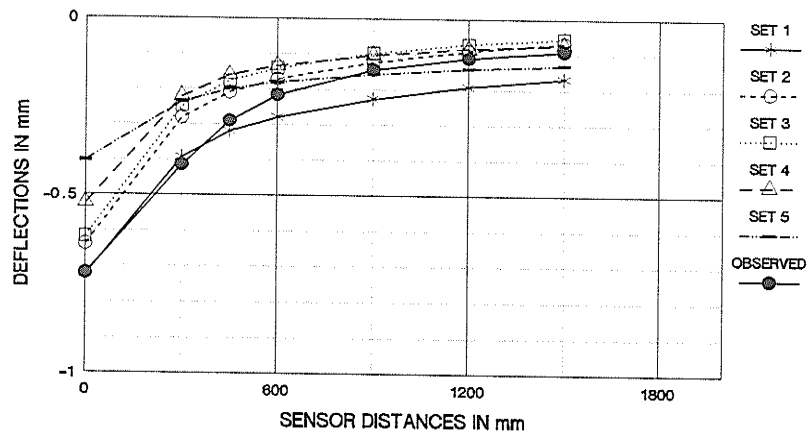
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

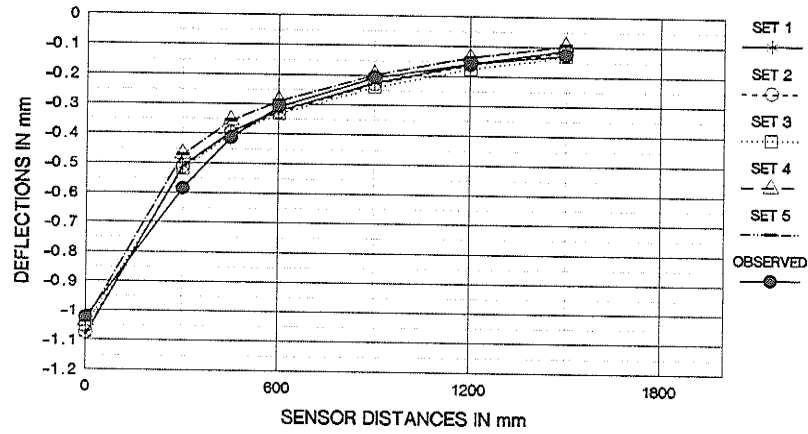


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

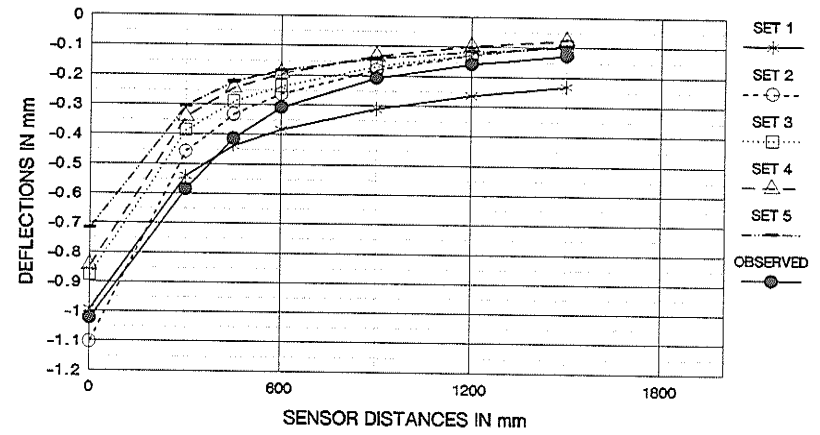
ST. ANDREWS: RWY 13-31: STA. 5+ 750: LOAD 511 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

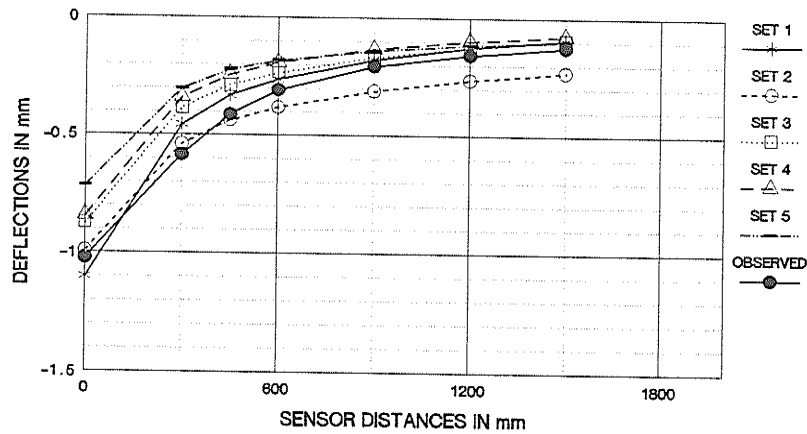
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

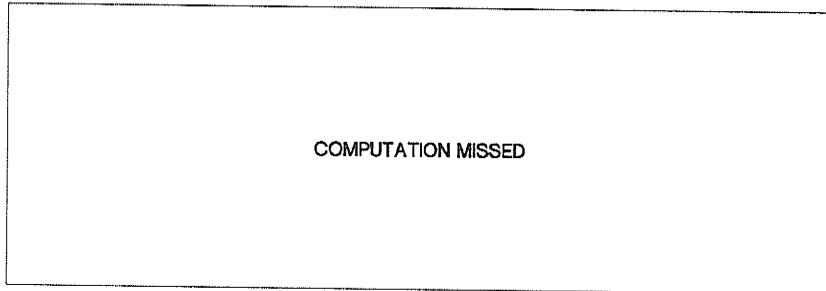


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

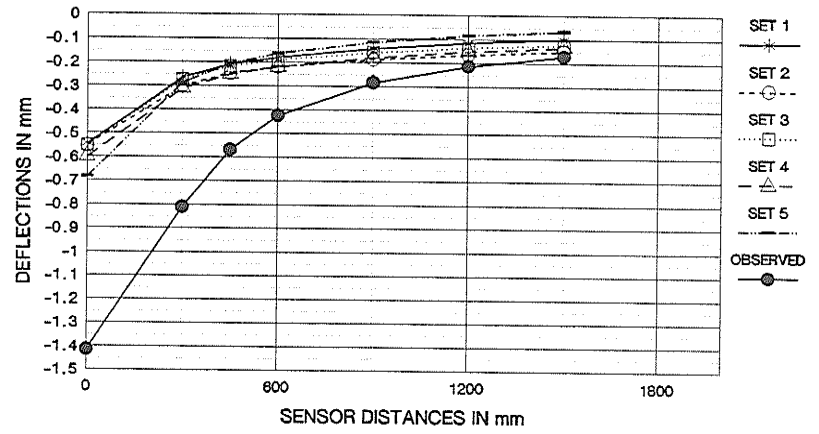
ST. ANDREWS: RWY 13-31: STA. 5+ 750: LOAD 701 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

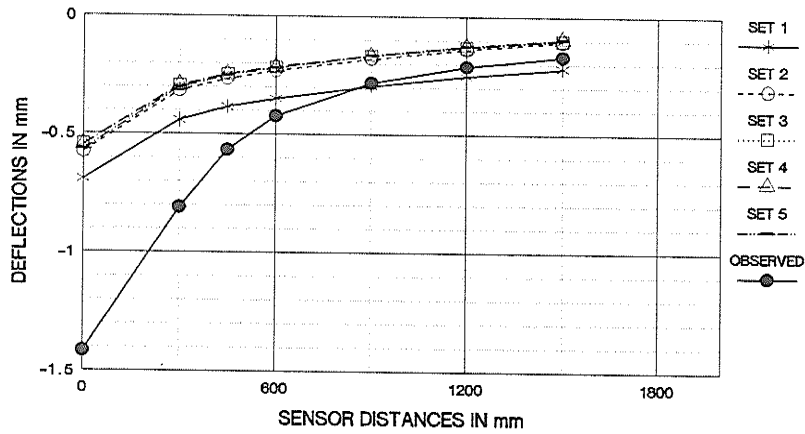
OPTIMIZATION CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

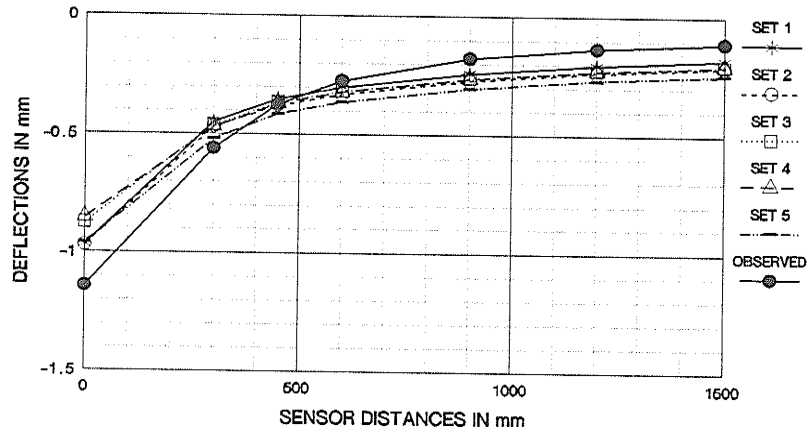


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

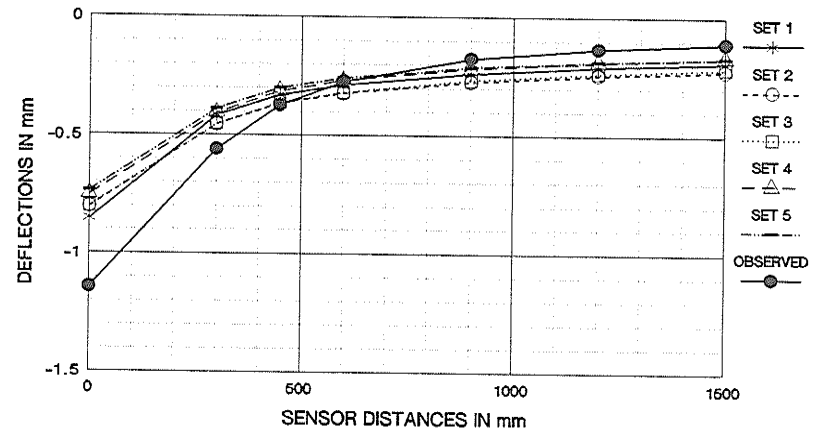
ST. ANDREWS: RWY 13-31: STA. 5+ 750: LOAD 951 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

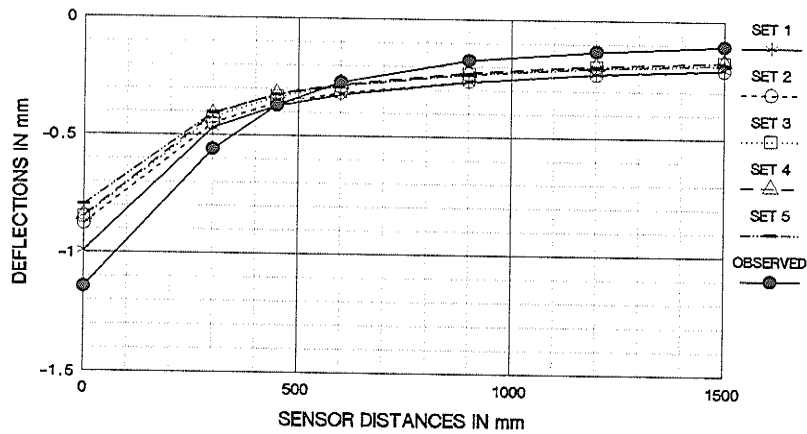
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

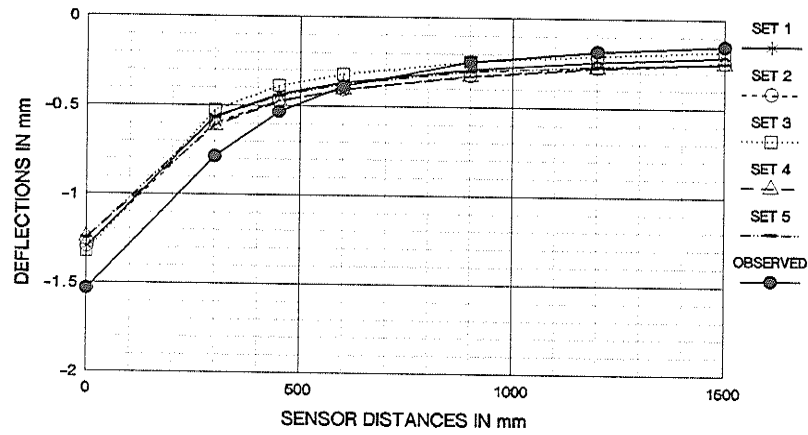


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

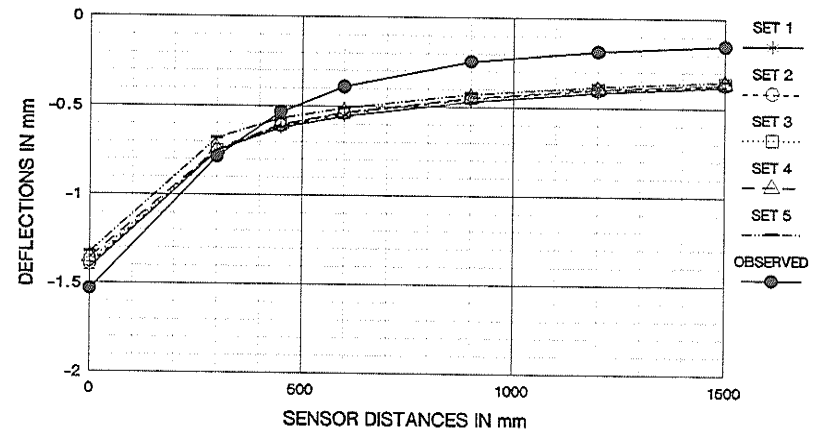
ST. ANDREWS: RWY 13-31: STA. 5+ 840: LOAD 498 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

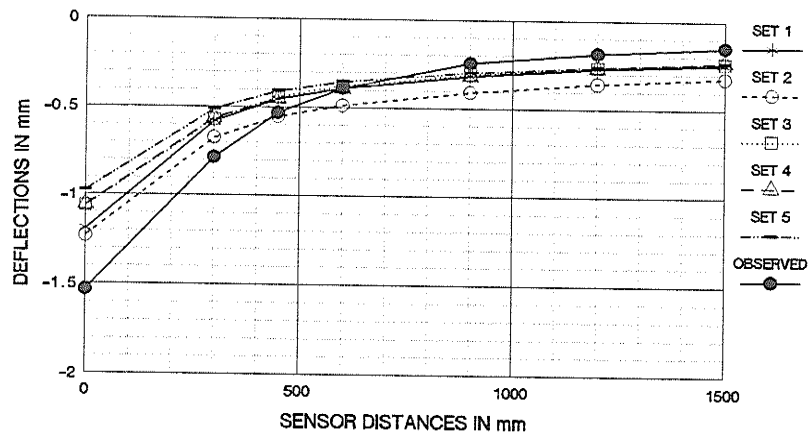
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

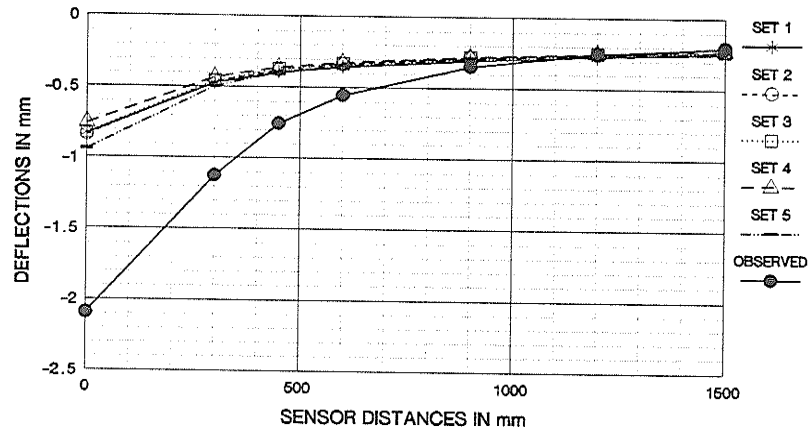


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

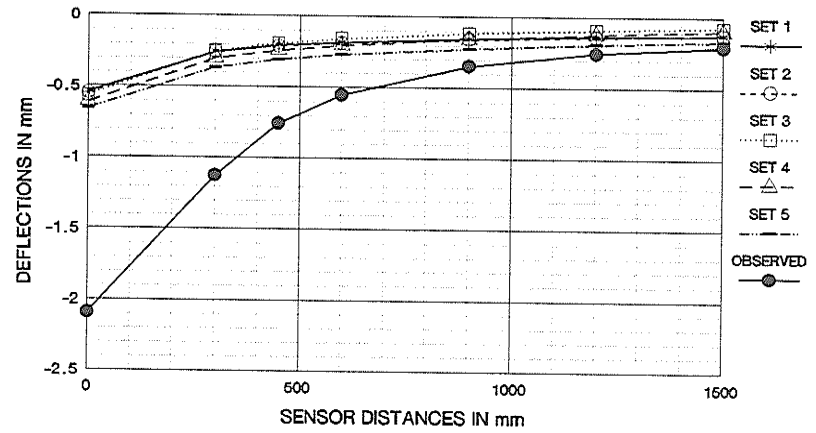
ST . ANDREWS: RWY 13-31: STA . 5+ 840: LOAD 703 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

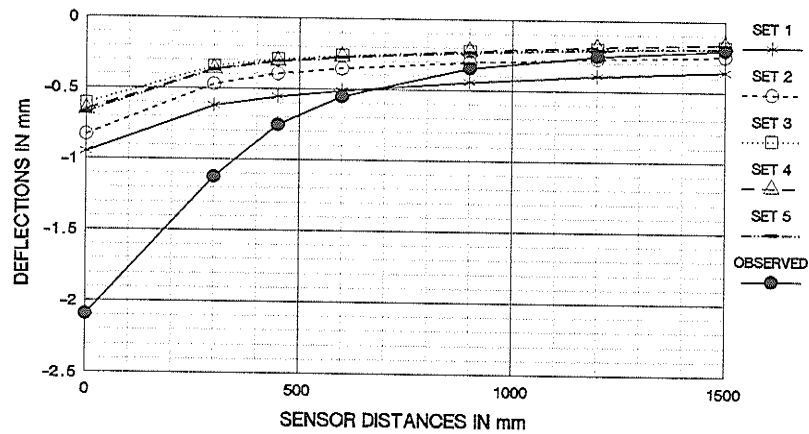
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

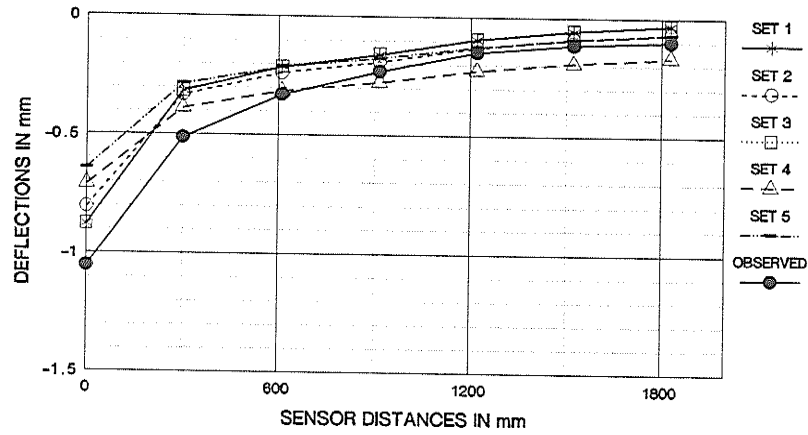


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

ST. ANDREWS: RWY 13-31: STA. 5+ 840: LOAD 972 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

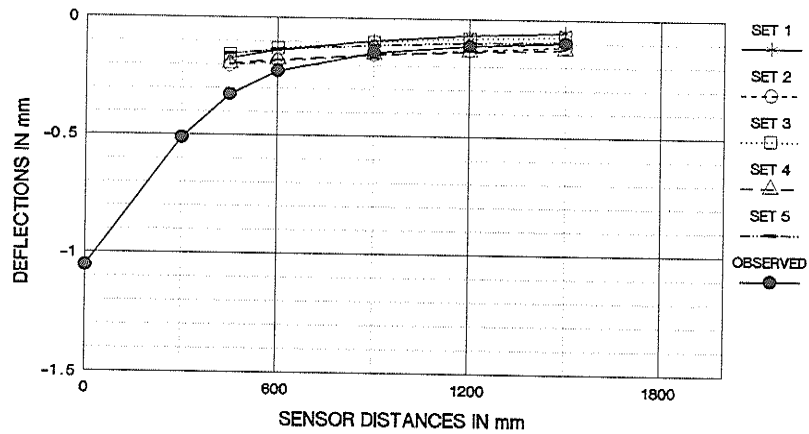
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

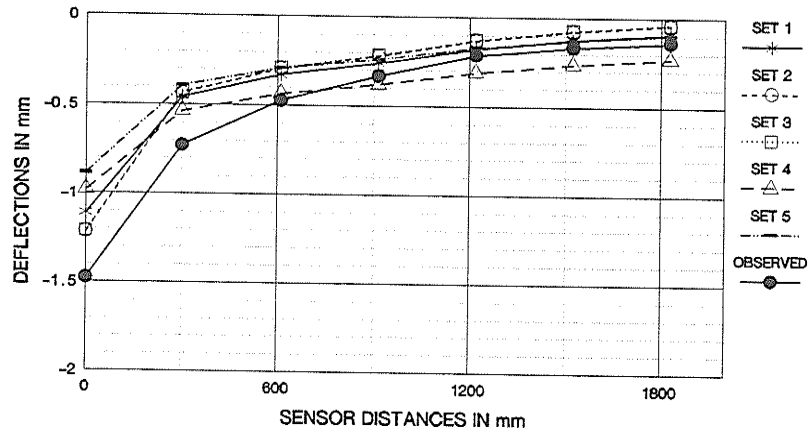


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

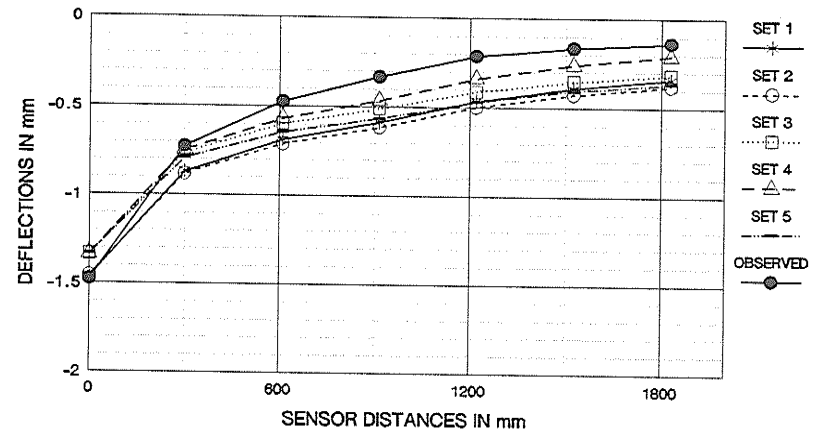
ST. ANDREWS: RWY 13-31: STA. 5+ 900: LOAD 503 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

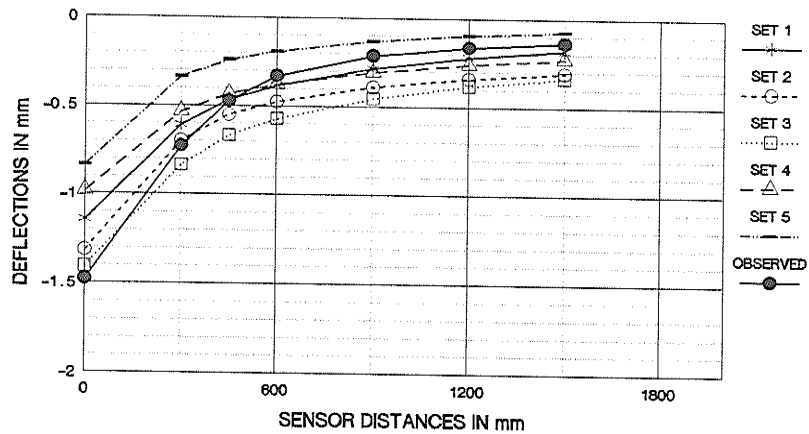
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

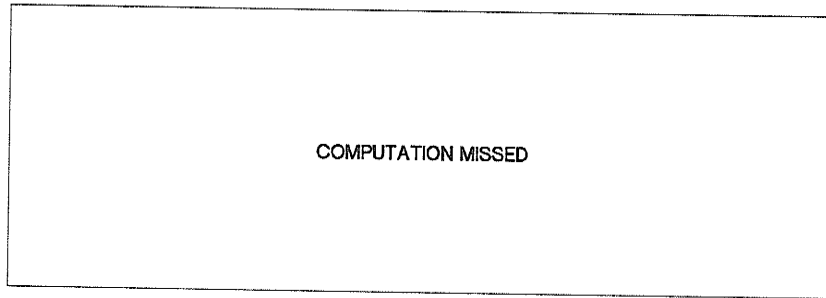


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

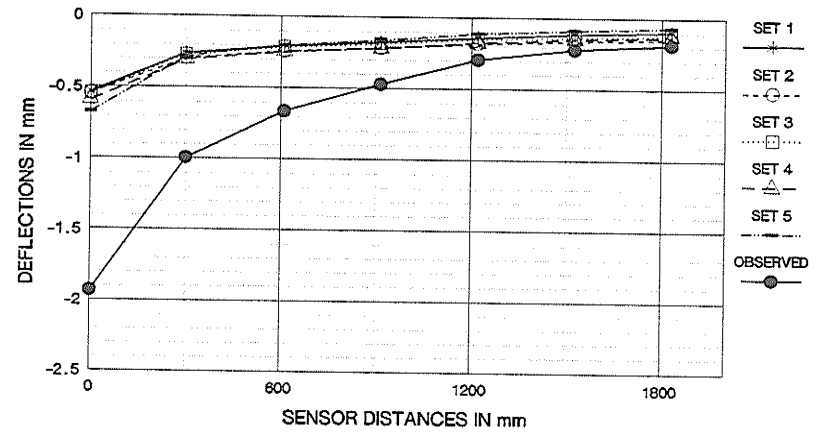
ST. ANDREWS: RWY 13-31: STA. 5+ 900: LOAD 694 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

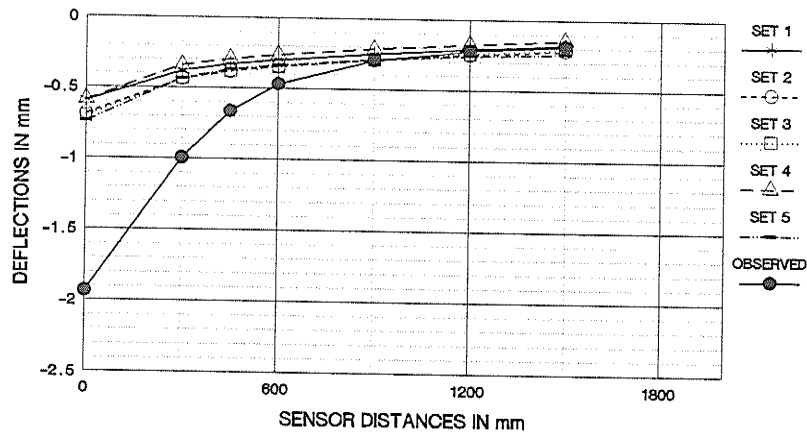
OPTIMIZATION CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

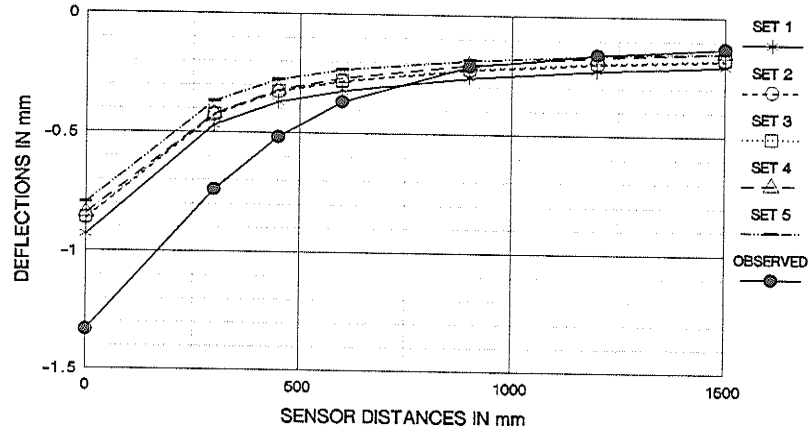


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

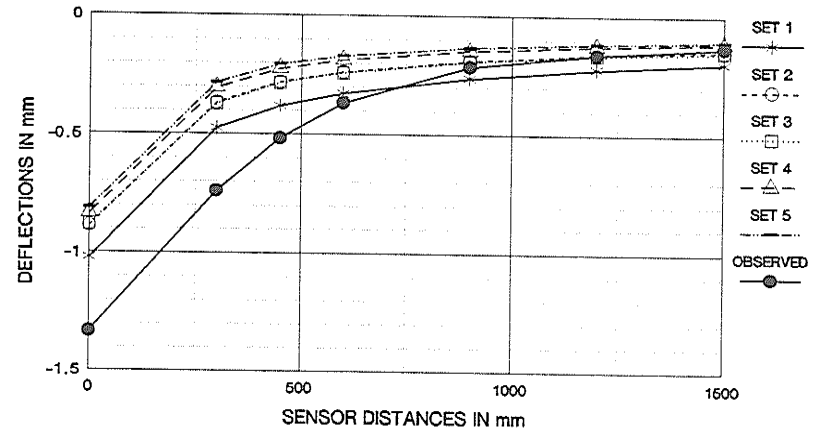
ST. ANDREWS: RWY 13-31: STA. 5+ 900: LOAD 939 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

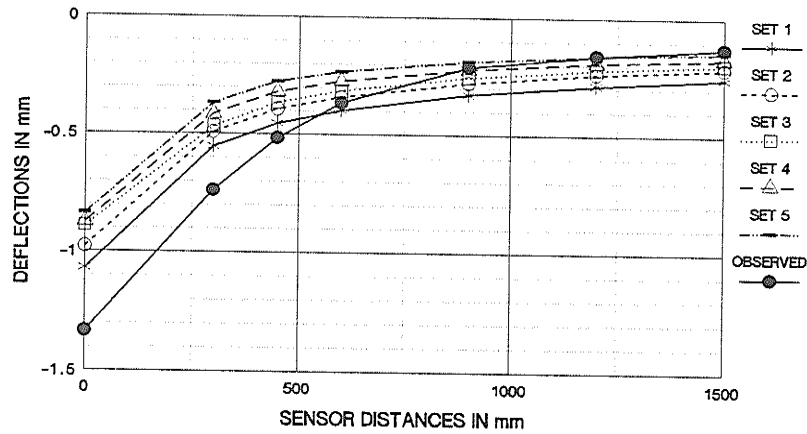
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

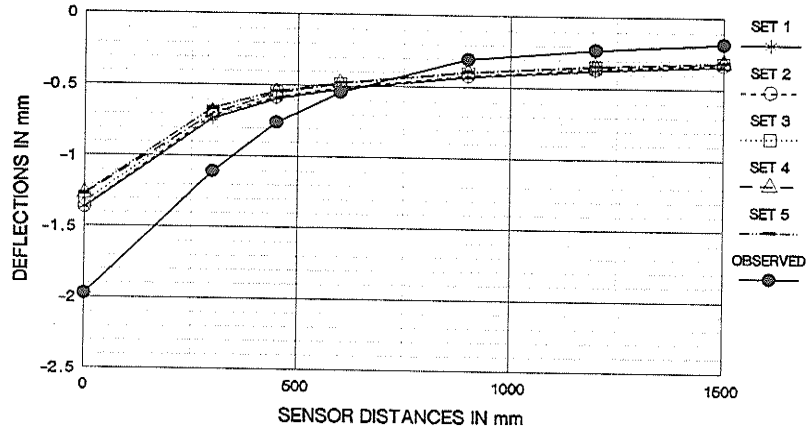


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

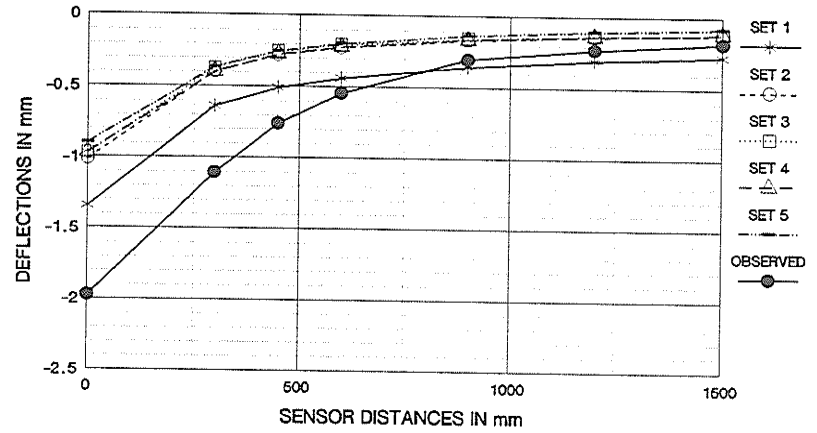
ST. ANDREWS: RWY 13-31: STA. 5 + 030: LOAD 522 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

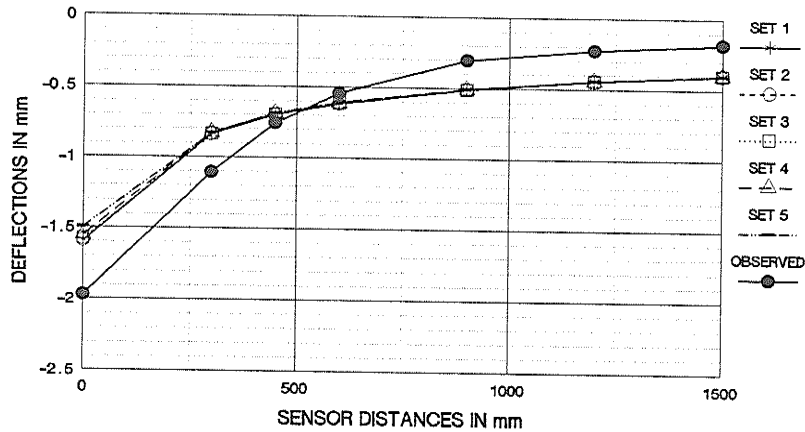
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

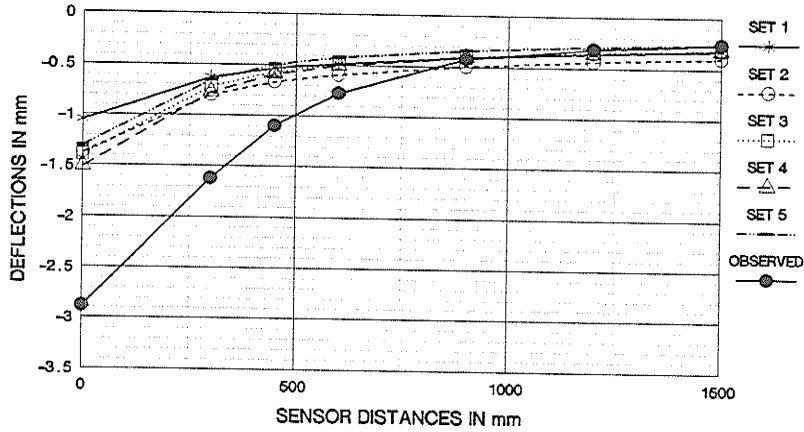


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

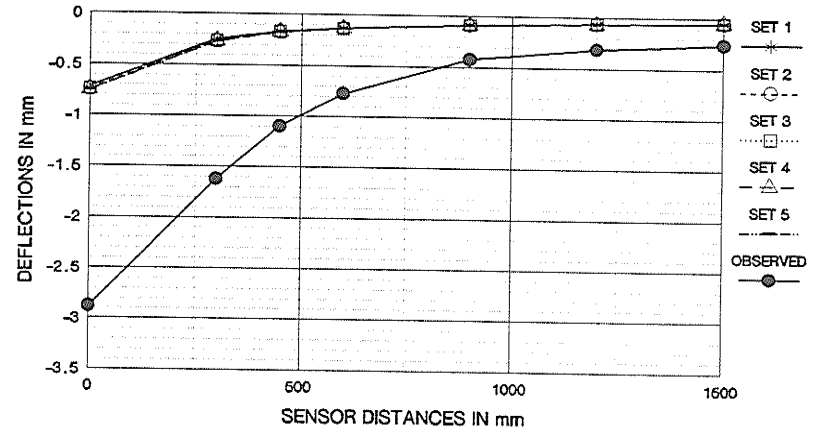
ST. ANDREWS: RWY 13-31: STA. 5 + 030: LOAD 708 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

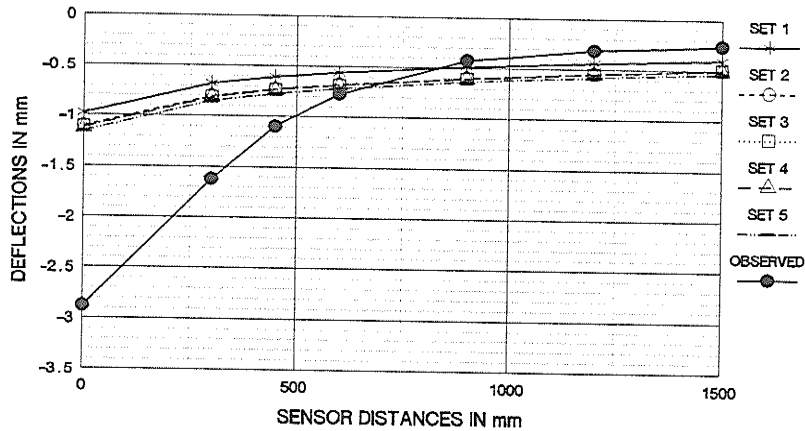
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

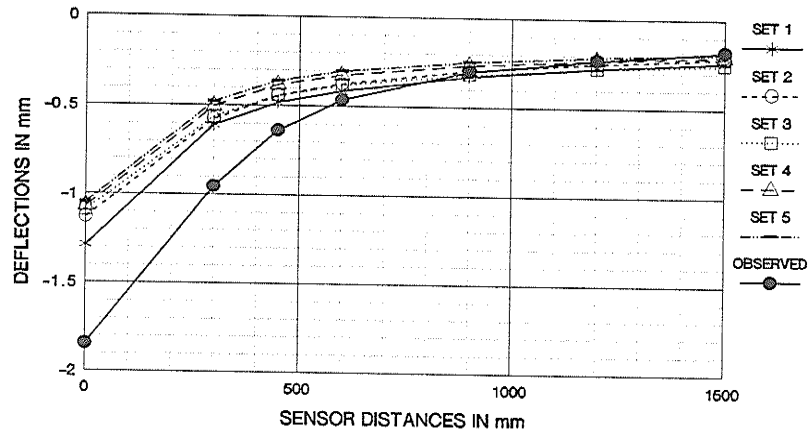


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

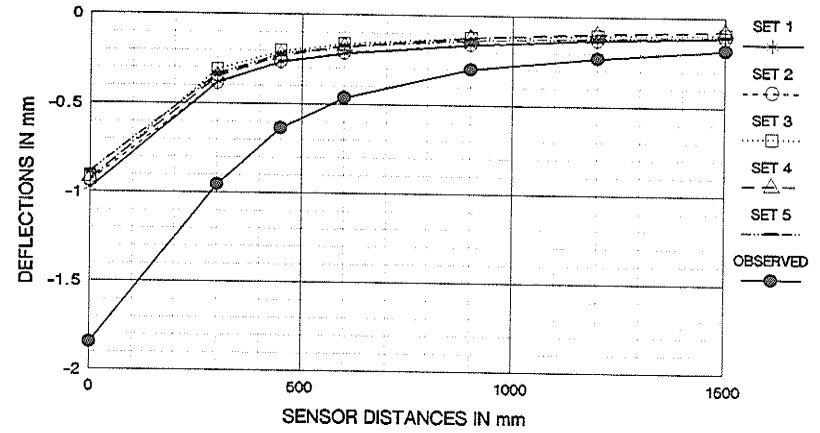
ST. ANDREWS: RWY 13-31: STA. 5 + 030: LOAD 960 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

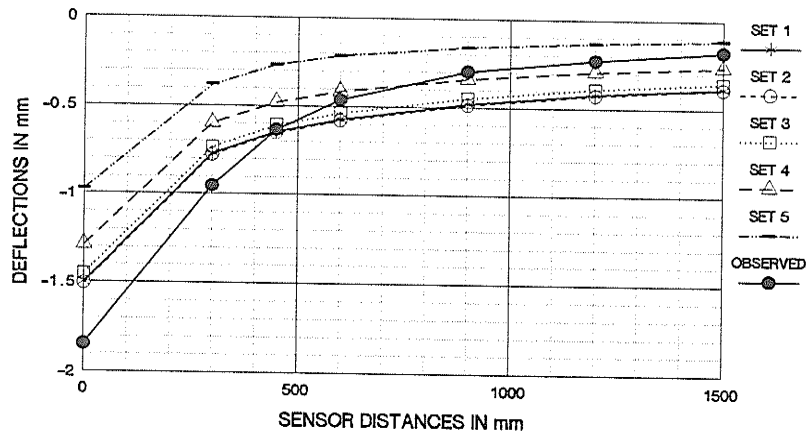
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

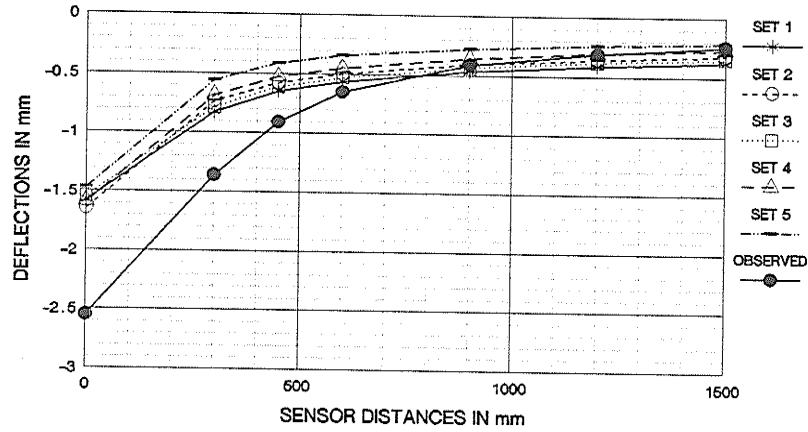


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

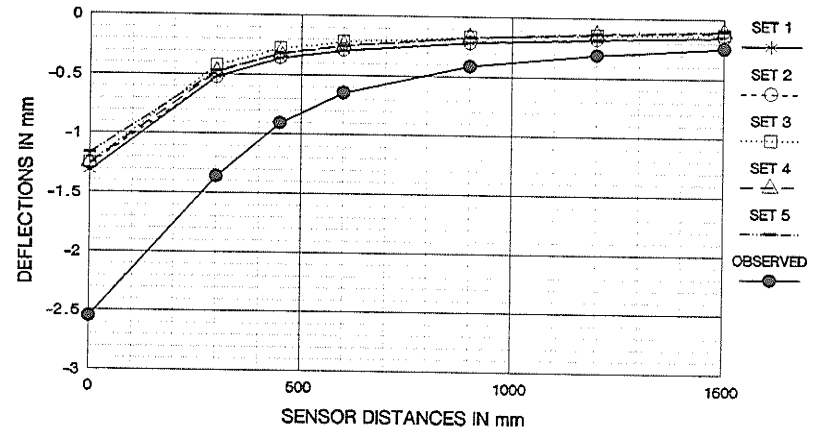
ST. ANDREWS: RWY 13-31: STA. 5 + 120: LOAD 686 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

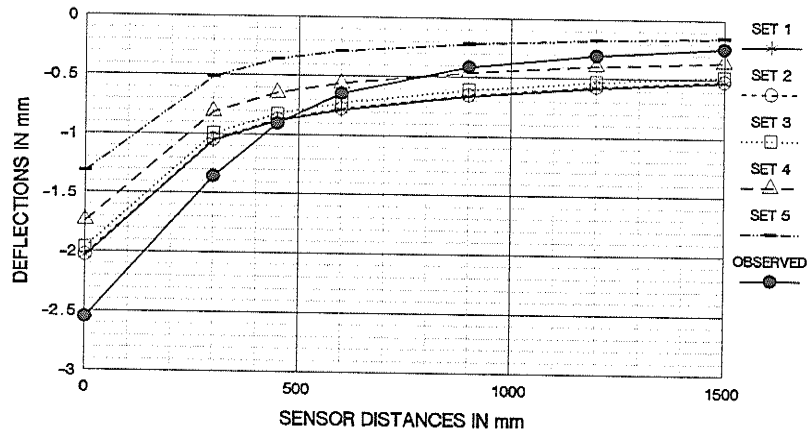
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

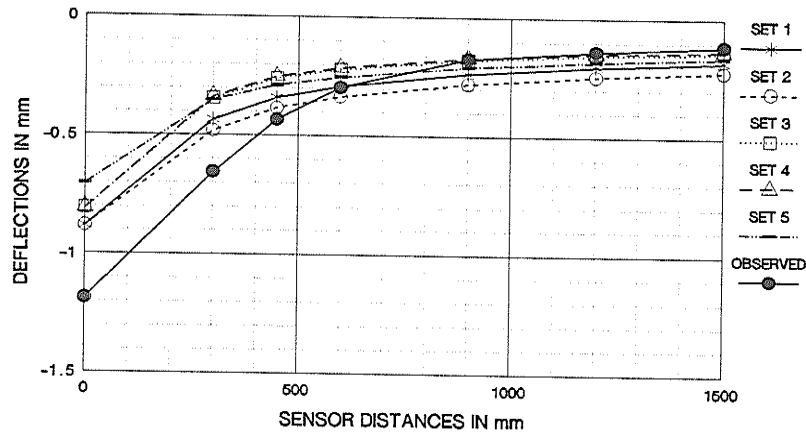


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

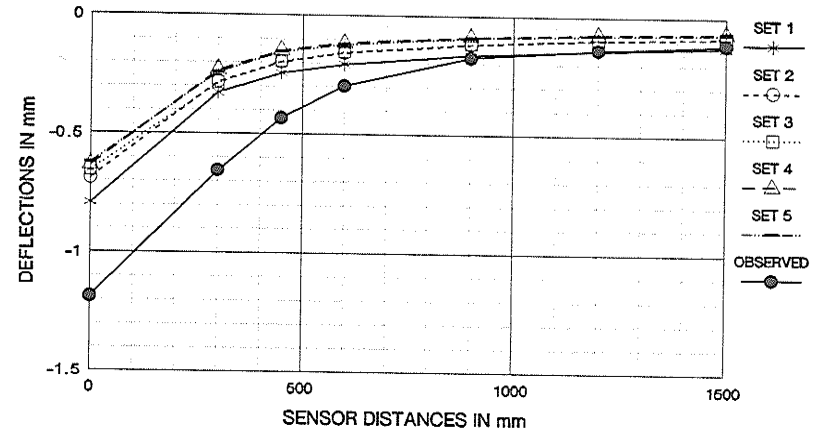
ST. ANDREWS: RWY 13-31: STA. 5 + 120: LOAD 936 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

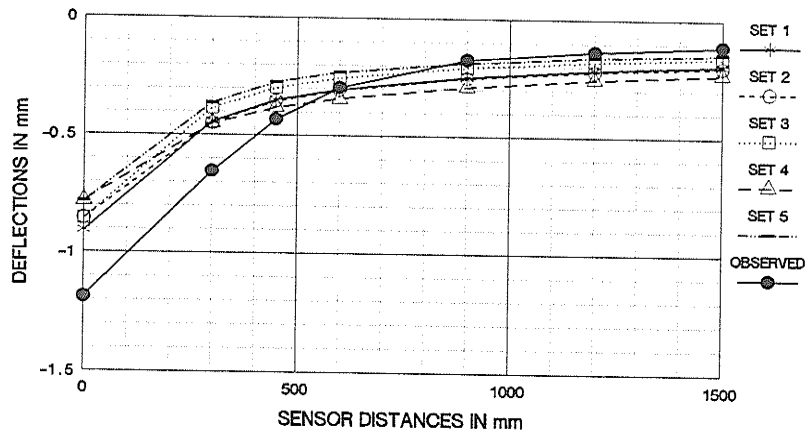
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

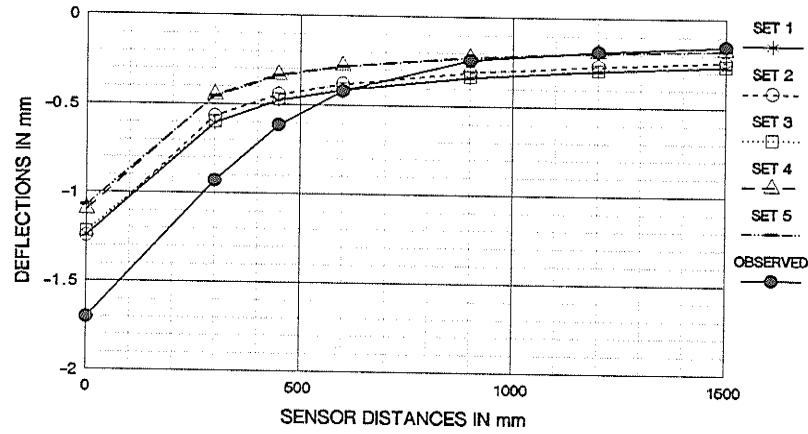


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

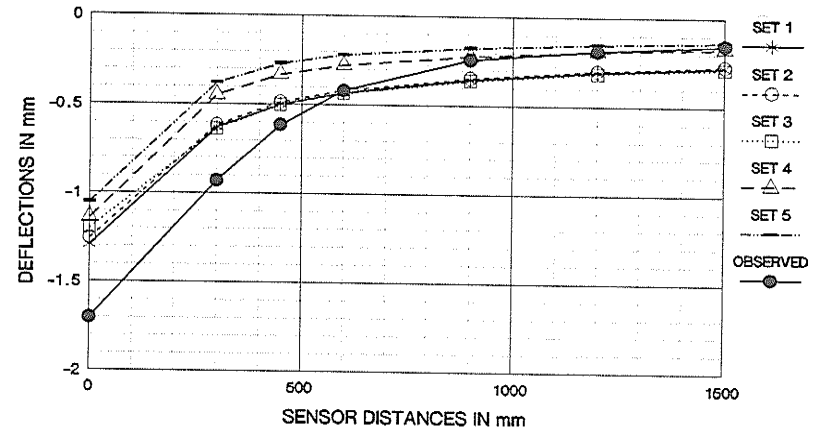
ST. ANDREWS: RWY 13-31: STA. 5 + 480: LOAD 500 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

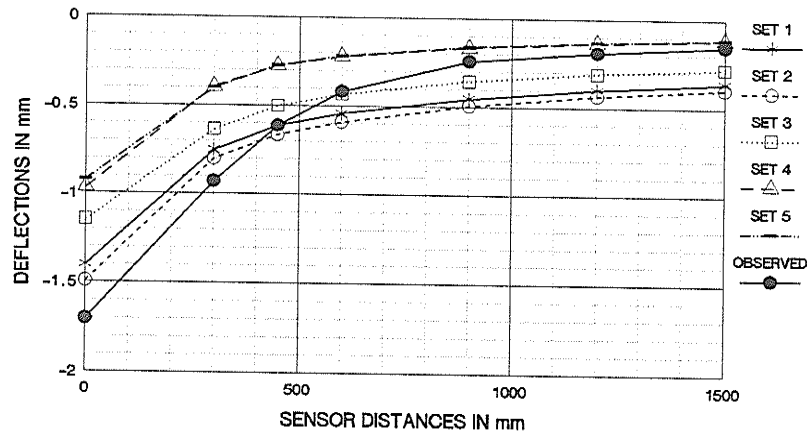
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

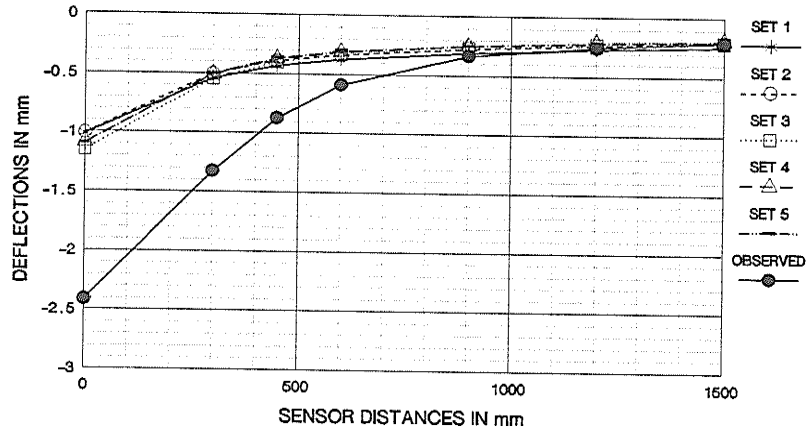


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

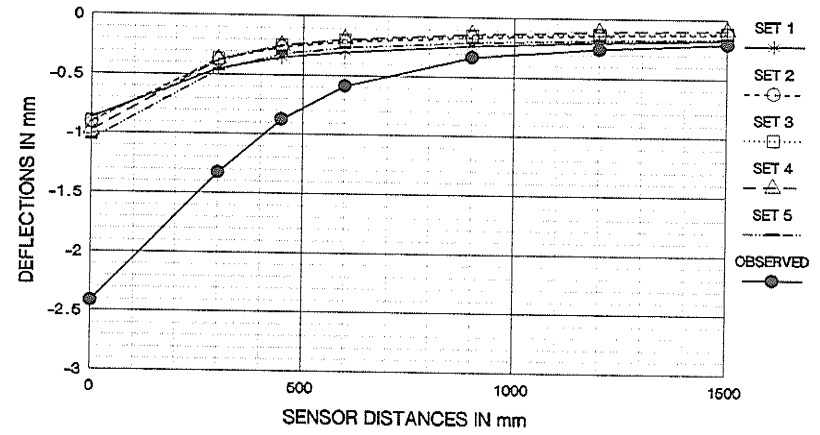
ST. ANDREWS: RWY 13-31: STA. 5 + 480: LOAD 704 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

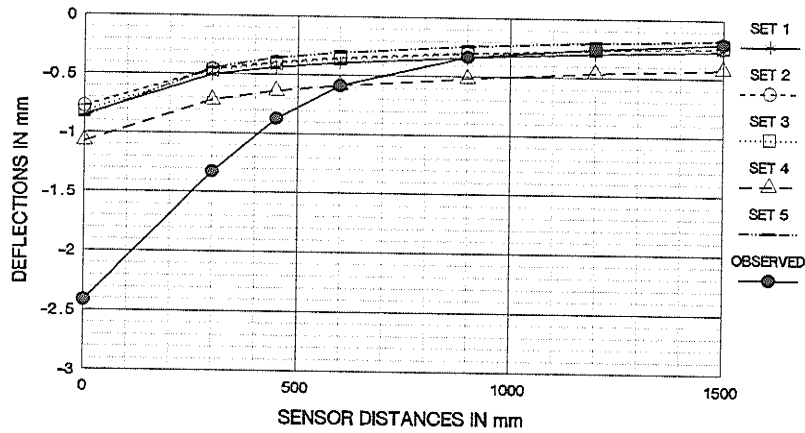
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

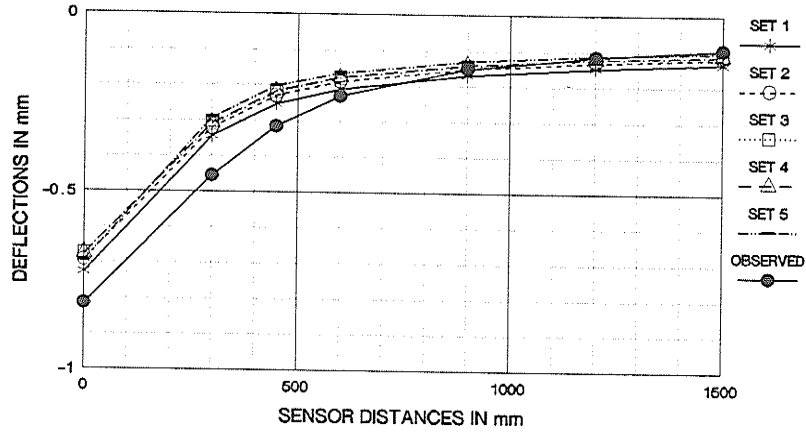


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

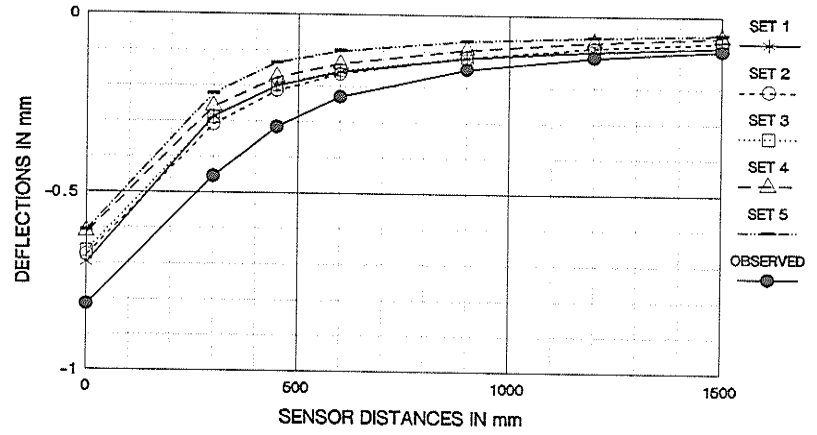
ST. ANDREWS: RWY 13-31: STA. 5 + 480: LOAD 962 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

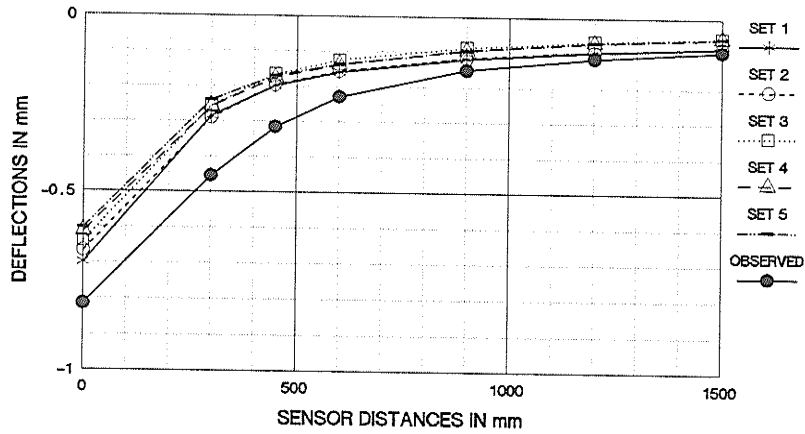
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

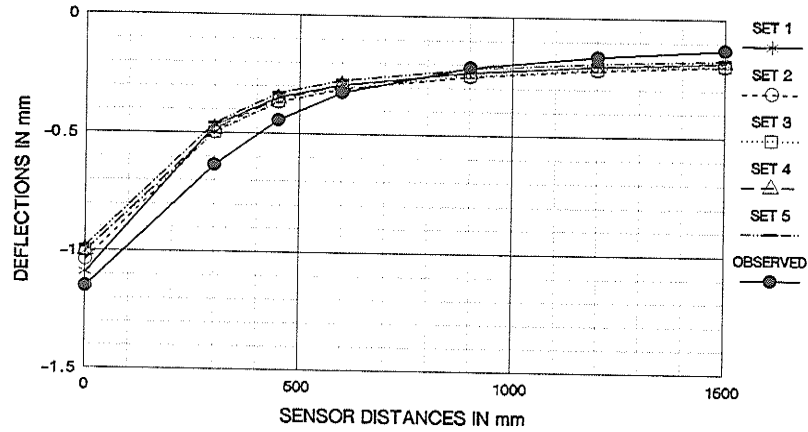


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

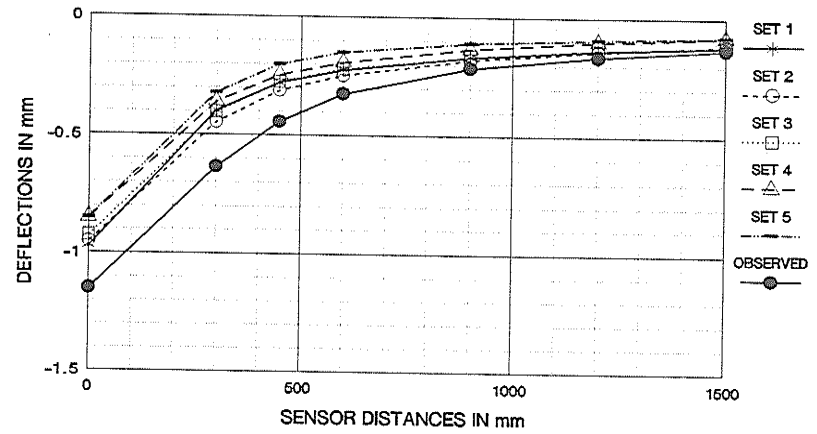
ST. ANDREWS: RWY 13-31: STA. 5 + 660: LOAD 511 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

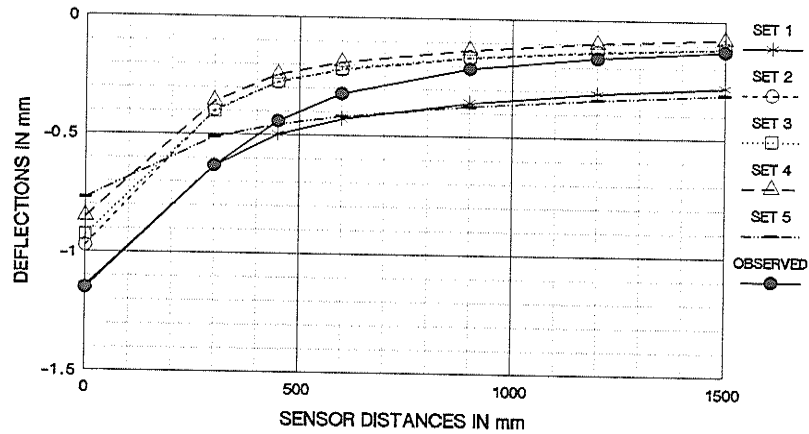
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

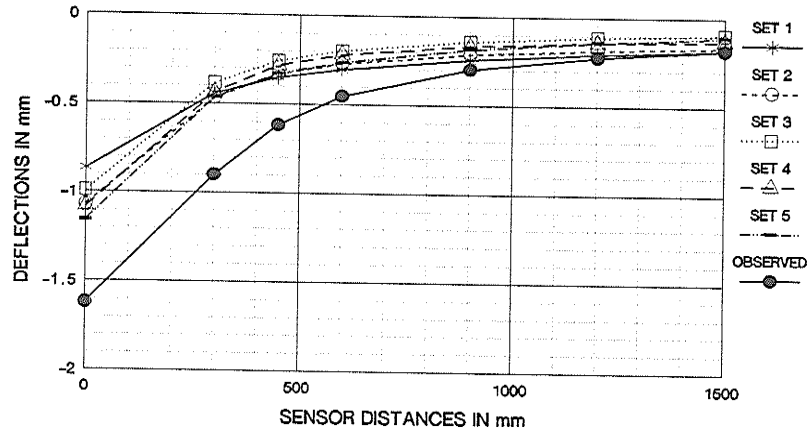


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

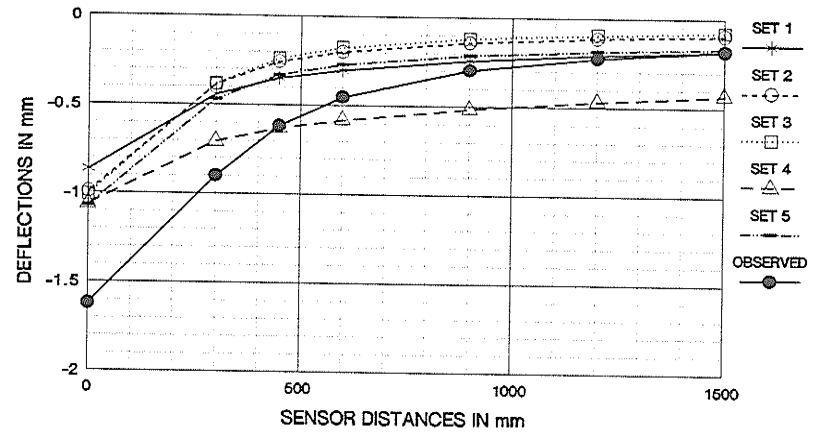
ST. ANDREWS: RWY 13-31: STA. 5 + 660: LOAD 711 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

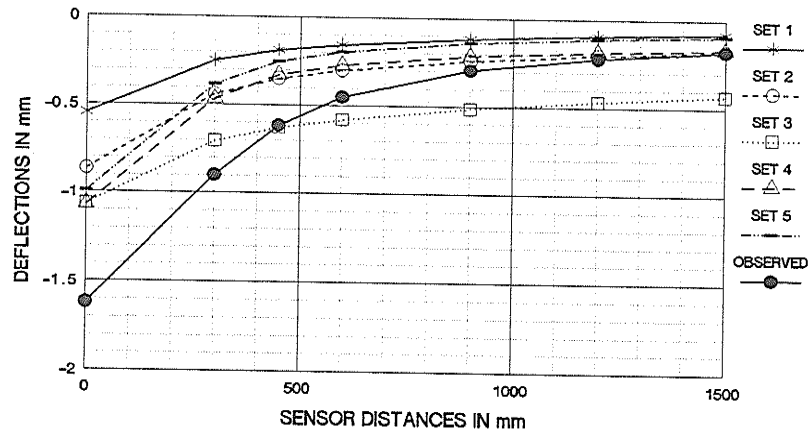
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

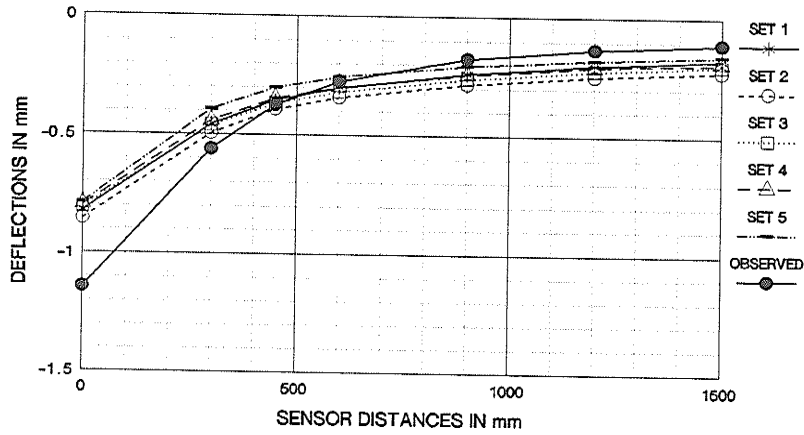


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

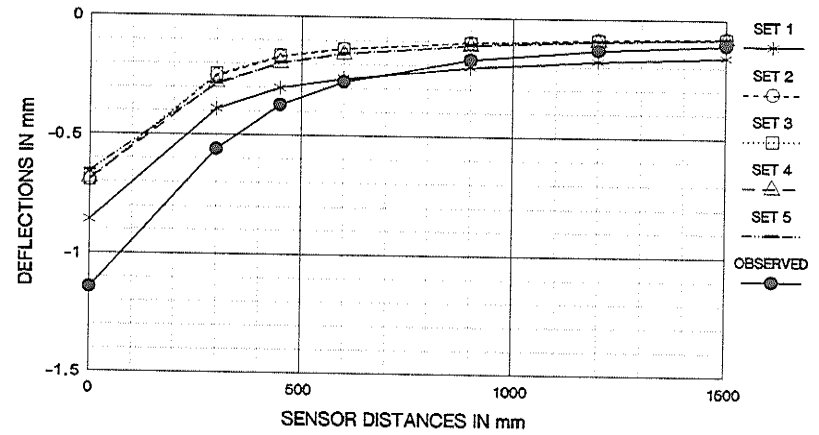
ST. ANDREWS. RWY 13-31: STA. 5 + 660: LOAD 982 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

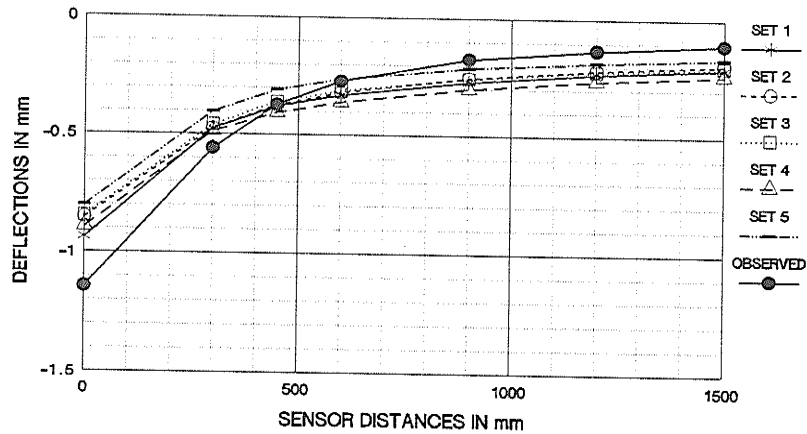
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

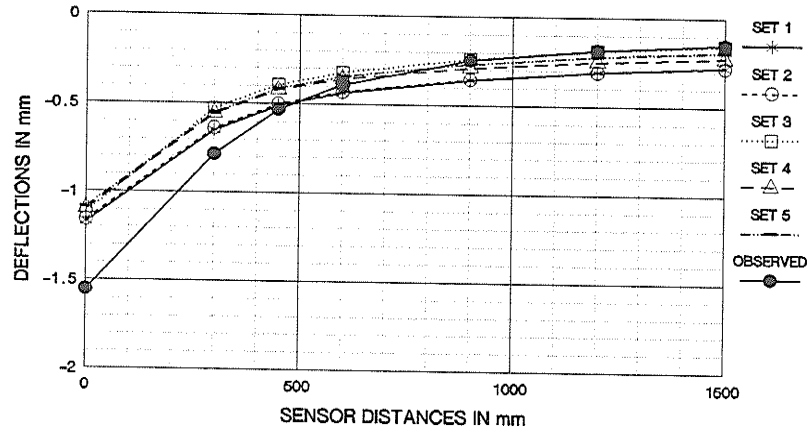


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

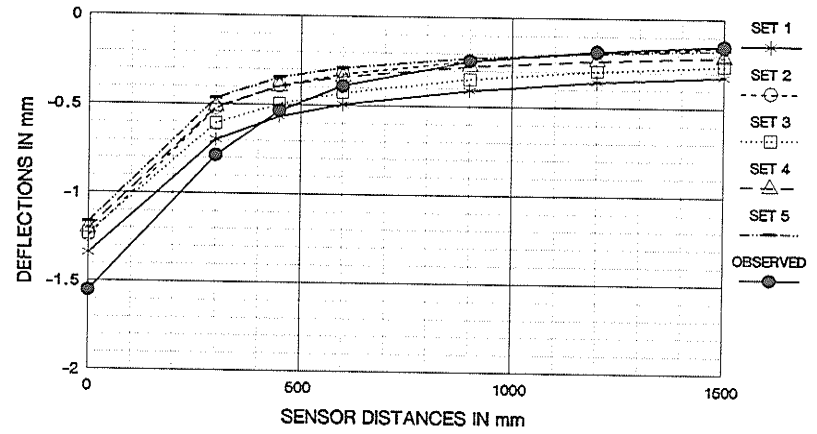
ST. ANDREWS: RWY 13-31: STA. 5 + 660: LOAD 498 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

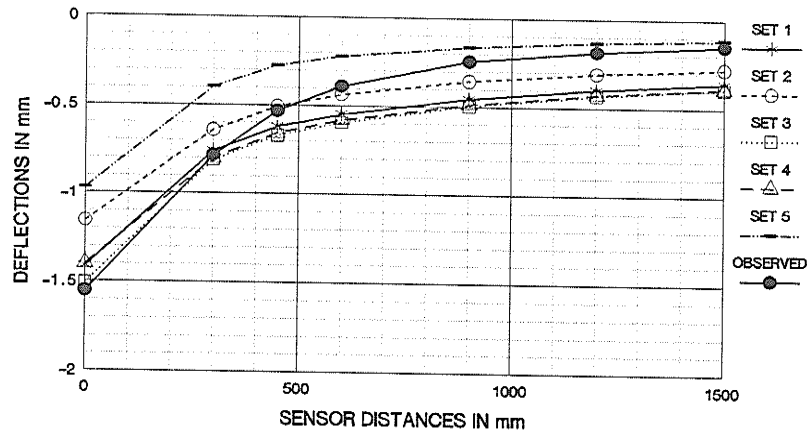
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

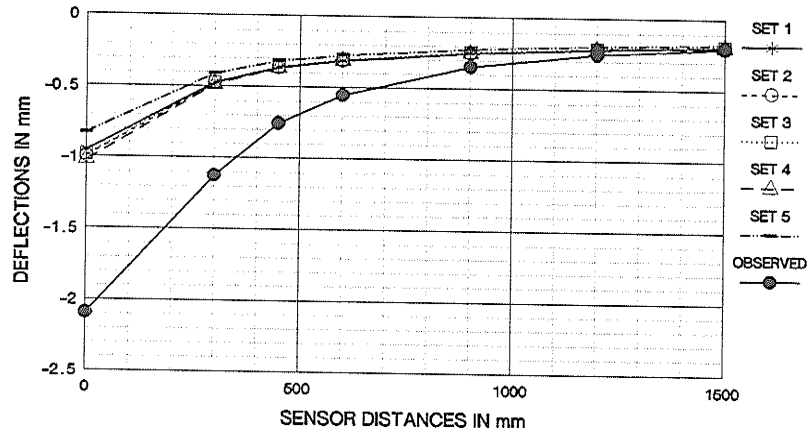


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

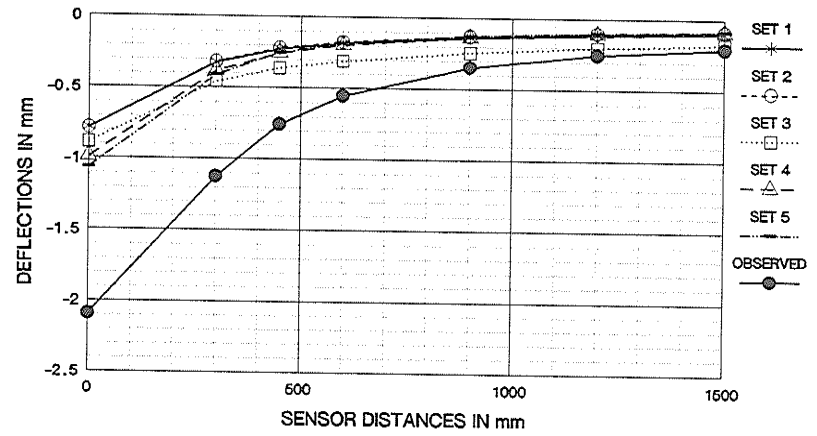
ST. ANDREWS: RWY 13-31: STA. 5 + 660: LOAD 703 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

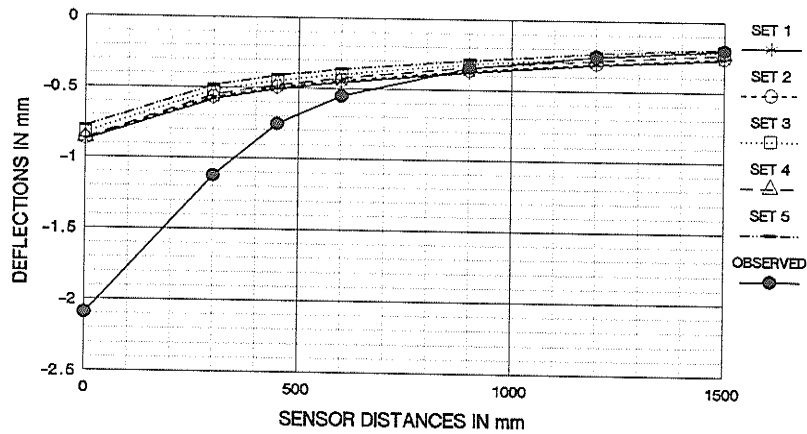
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

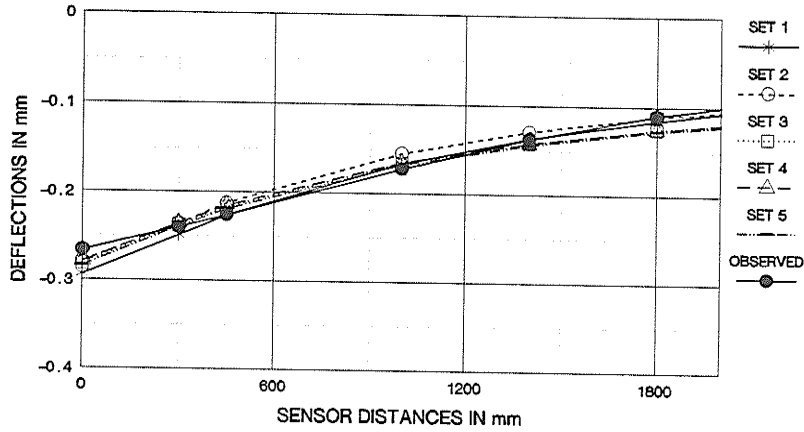


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

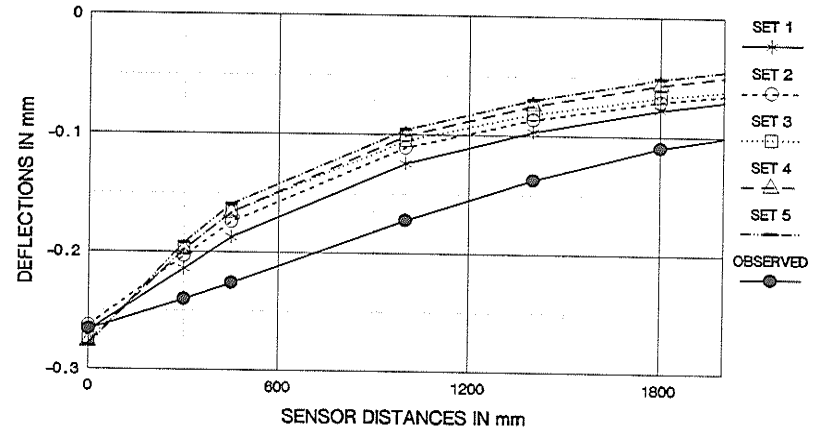
ST. ANDREWS: RWY 13-31: STA. 5 + 660: LOAD 972 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

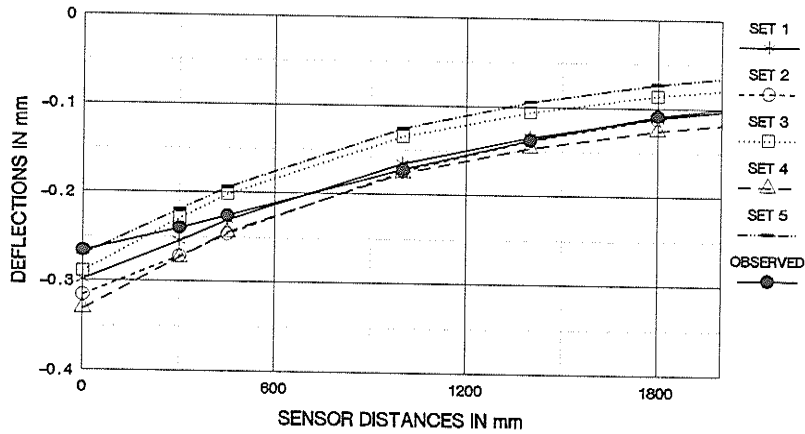
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

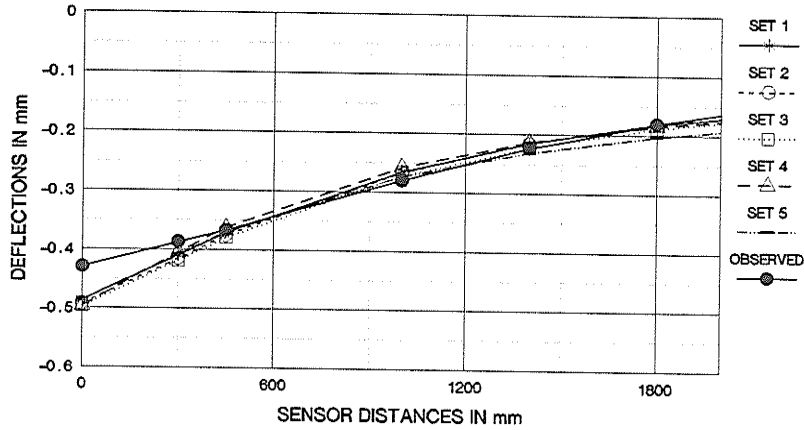


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

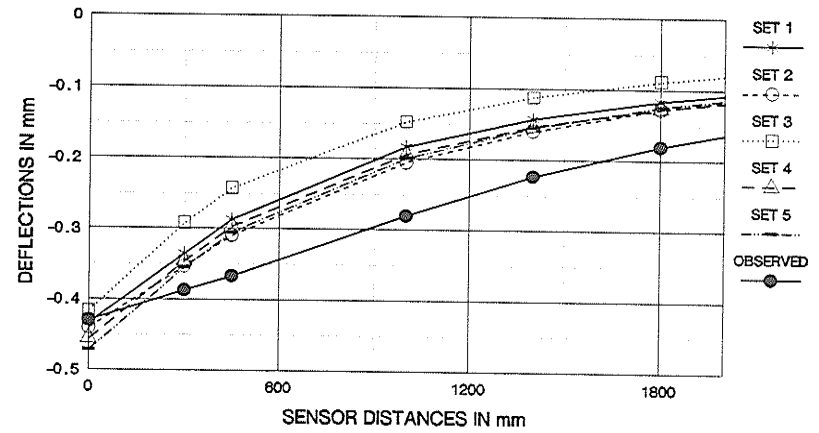
REGINA: RWY. 12-30: STA. 5 + 510: LOAD 685 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

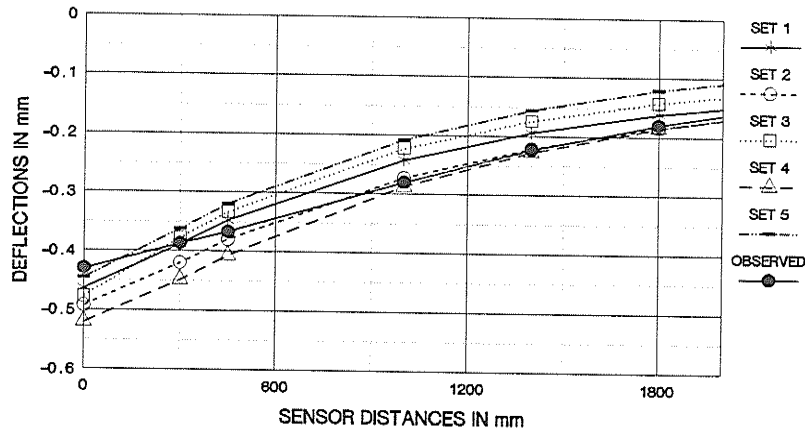
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

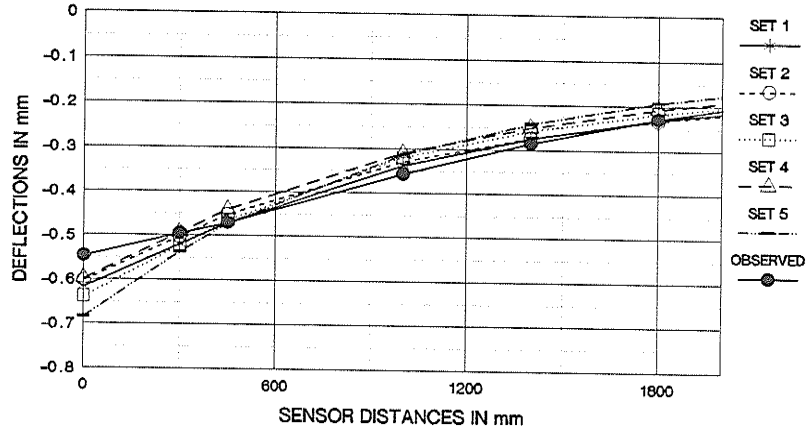


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

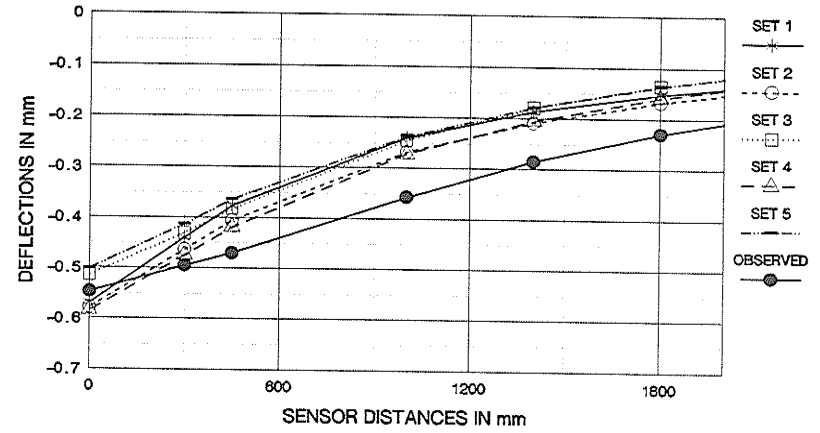
REGINA: RWY. 12-30: STA. 5 + 510: LOAD 1130 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

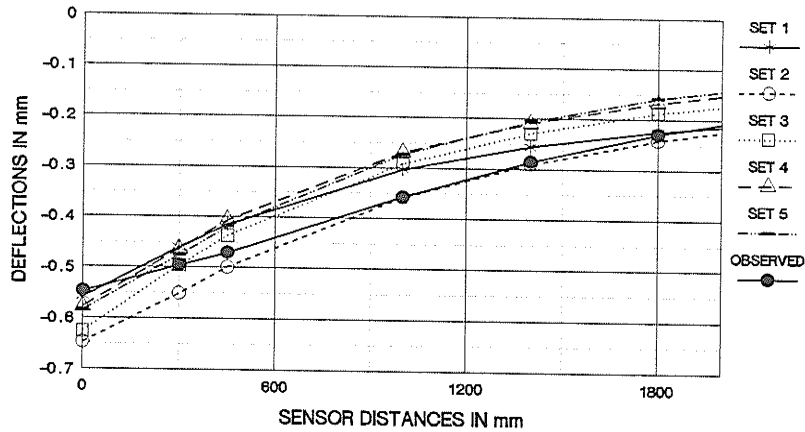
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

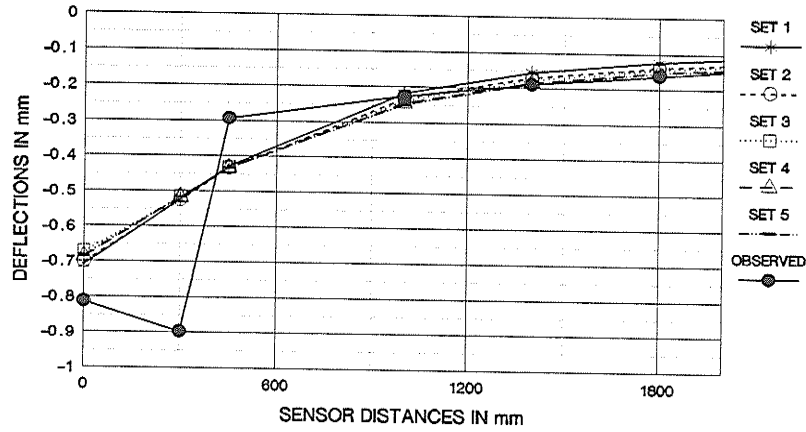


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

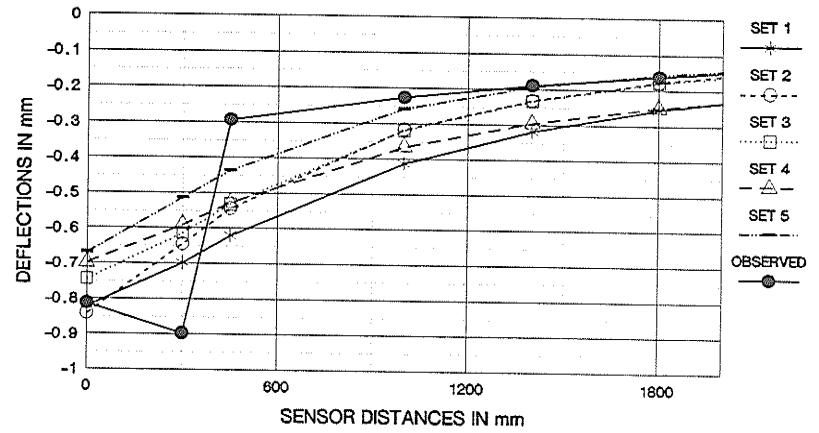
REGINA: RWY. 12-30: STA. 5 + 510: LOAD 1483 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

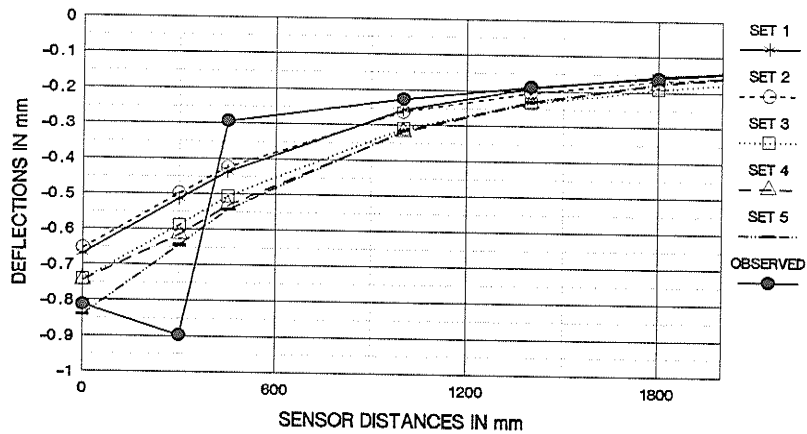
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

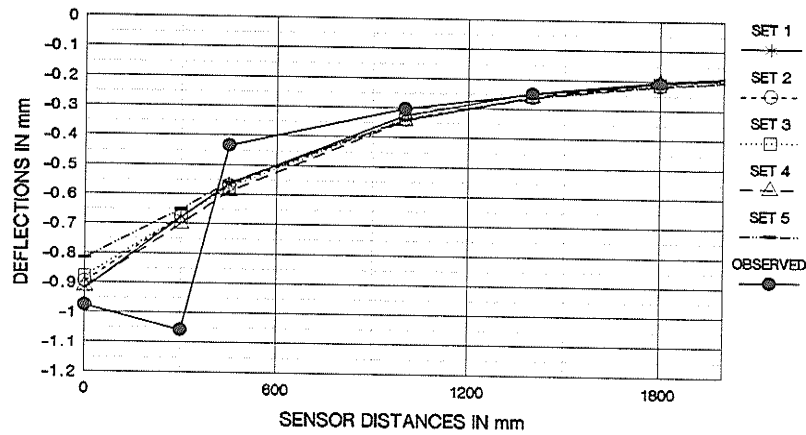


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

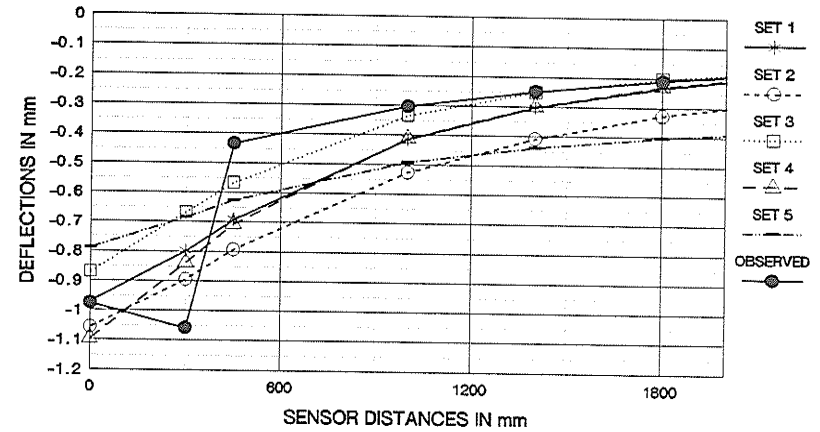
REGINA: RWY. 12-30: STA. 5 + 570: LOAD 1111 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

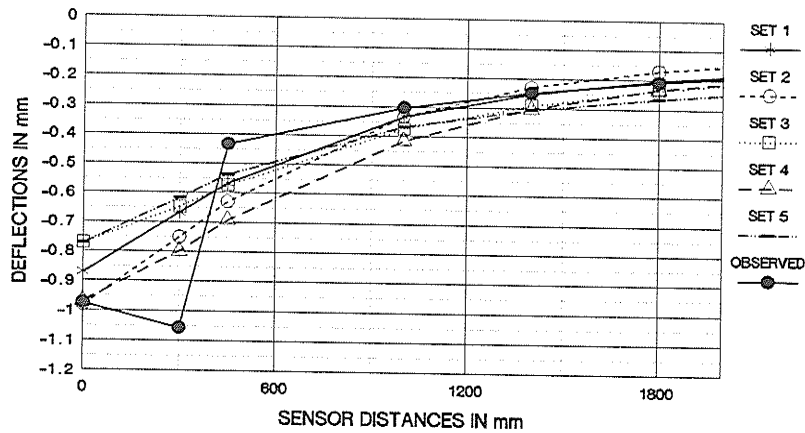
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

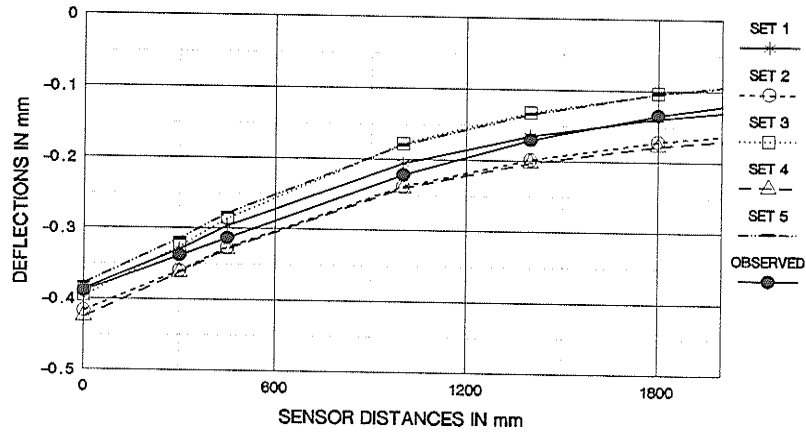


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

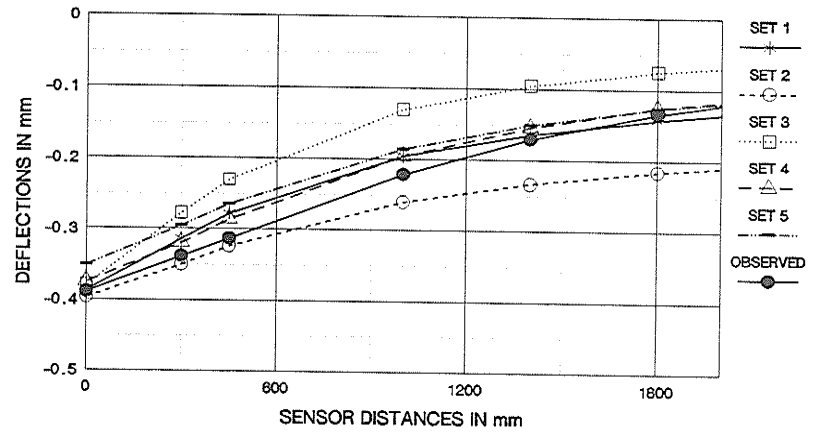
REGINA: RWY. 12-30: STA. 5 + 570: LOAD 1453 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

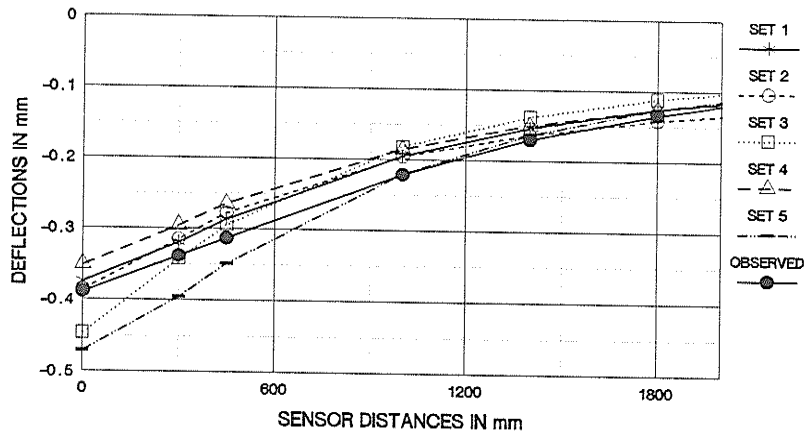
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

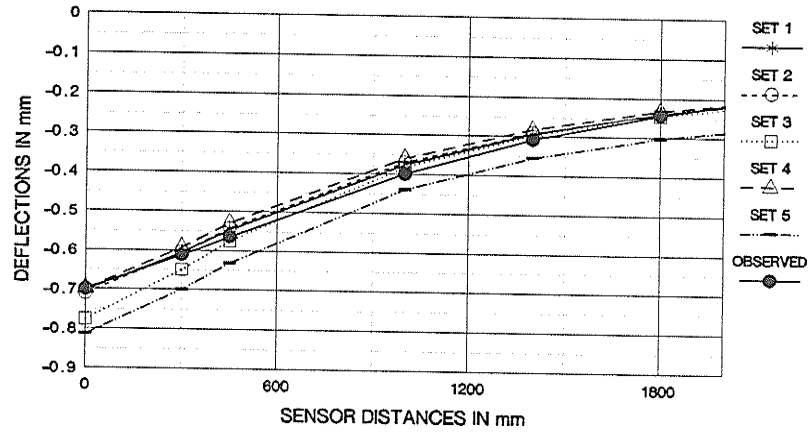


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

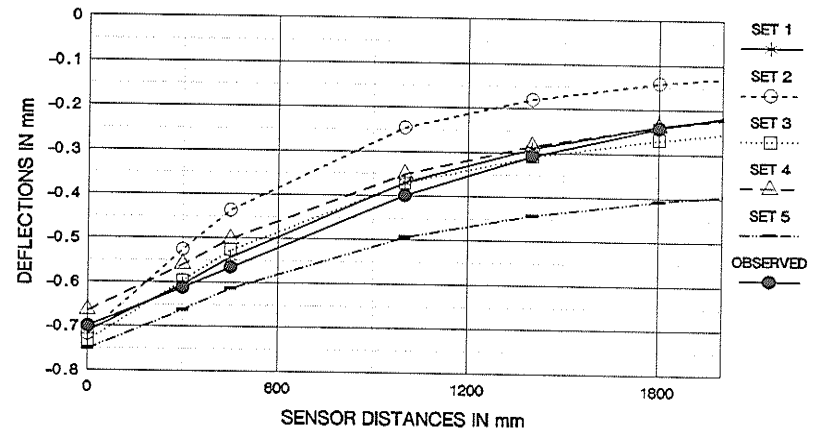
REGINA: RWY. 12-30: STA. 5 + 810: LOAD 782 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

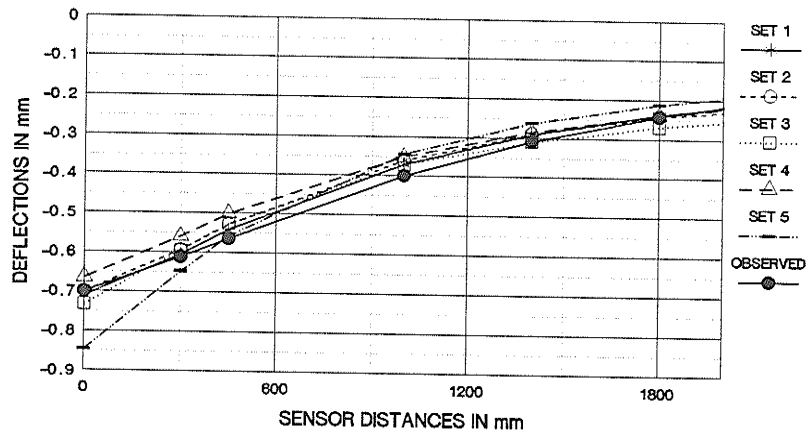
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

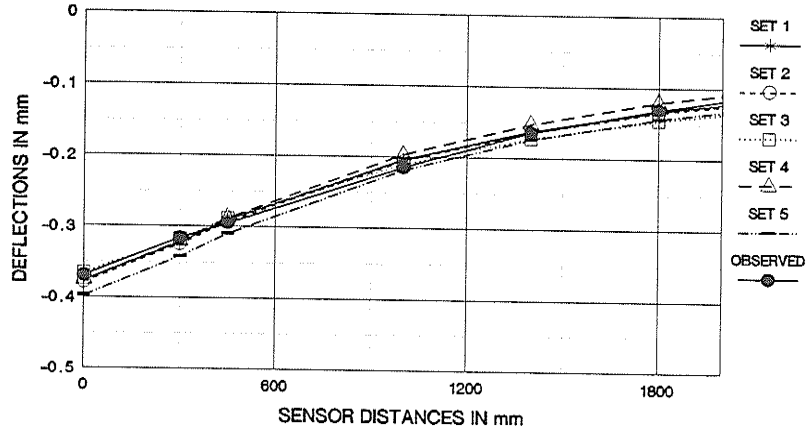


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

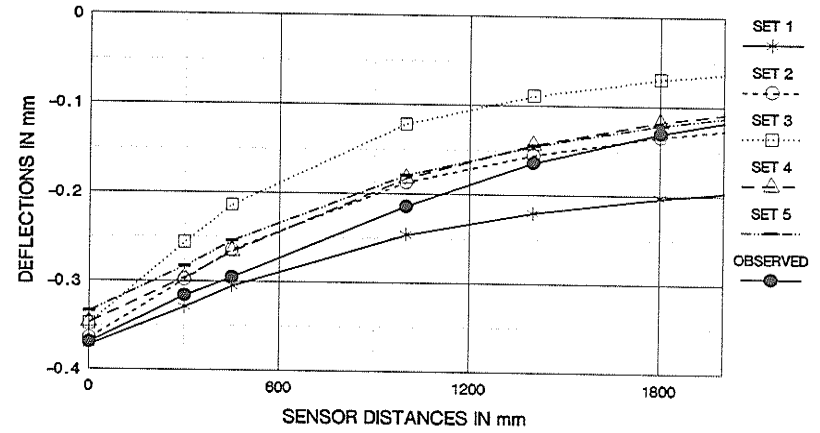
REGINA: RWY. 12-30: STA. 5 + 810: LOAD 1482 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

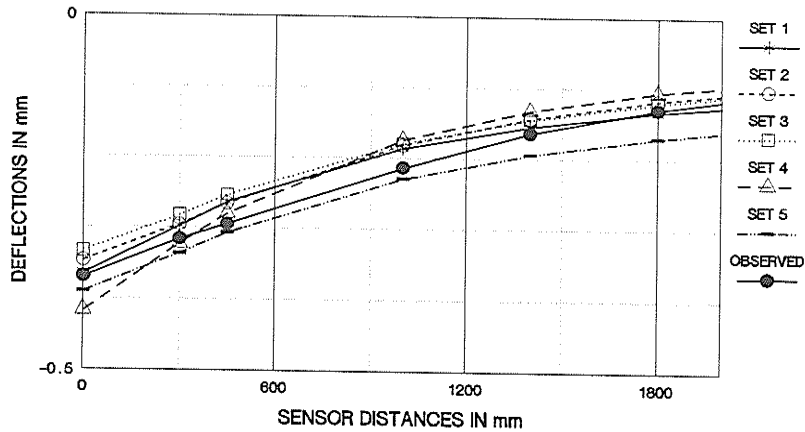
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

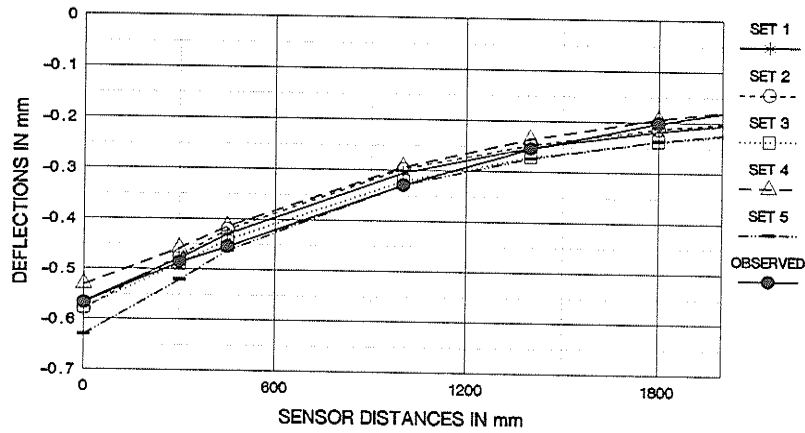


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

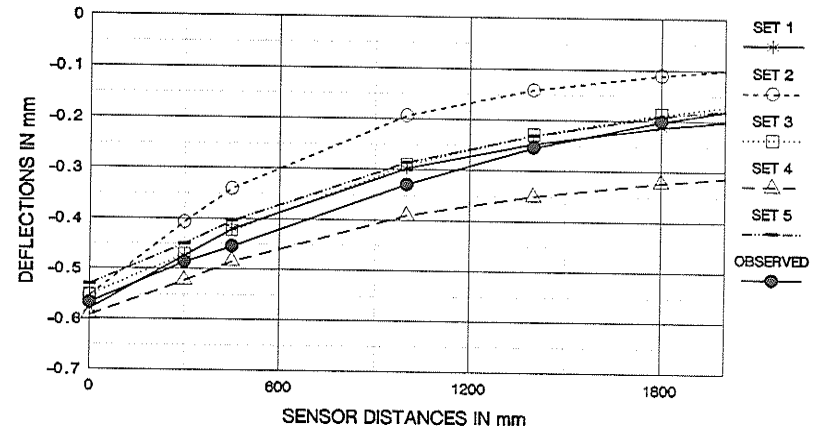
REGINA: RWY. 12-30: STA. 5 + 990: LOAD 733 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

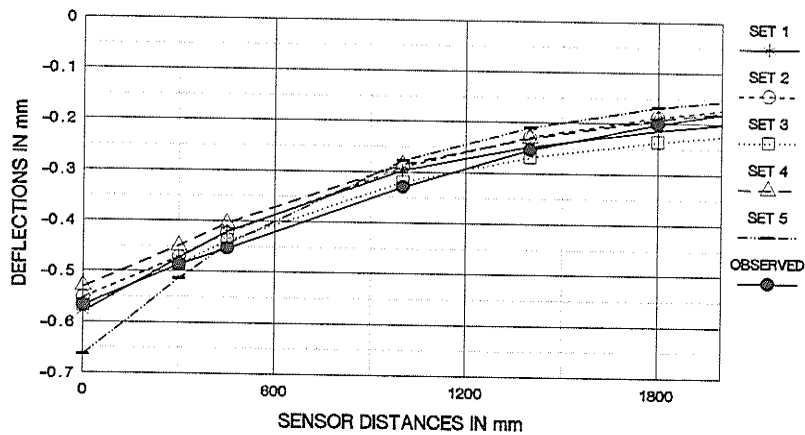
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

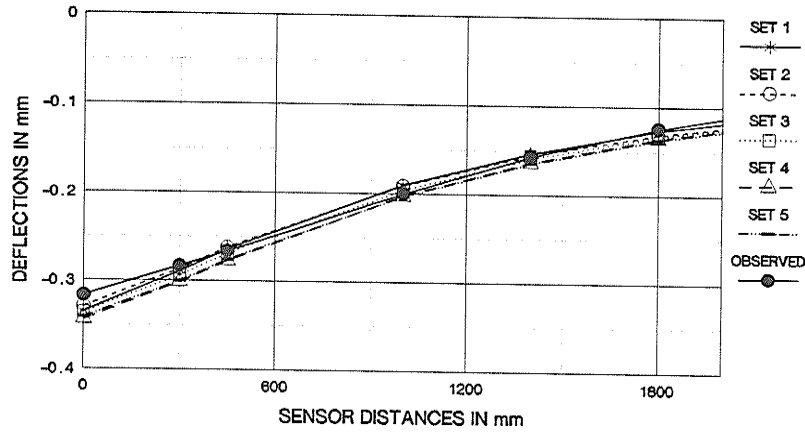


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

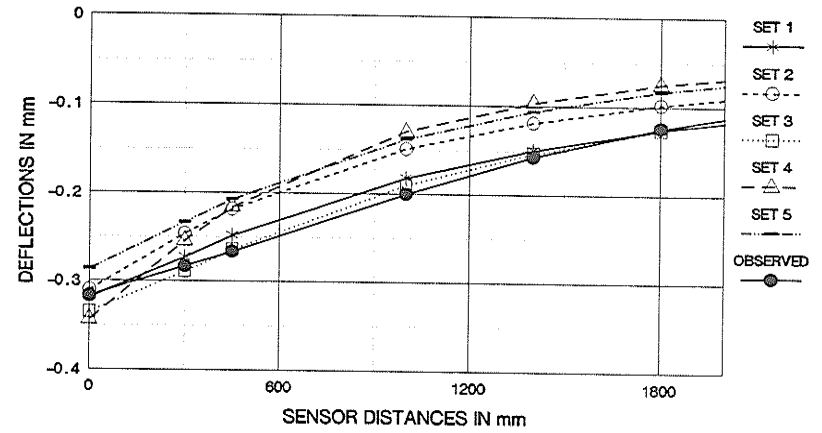
REGINA: RWY. 12-30; STA. 5 + 990; LOAD 1166 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

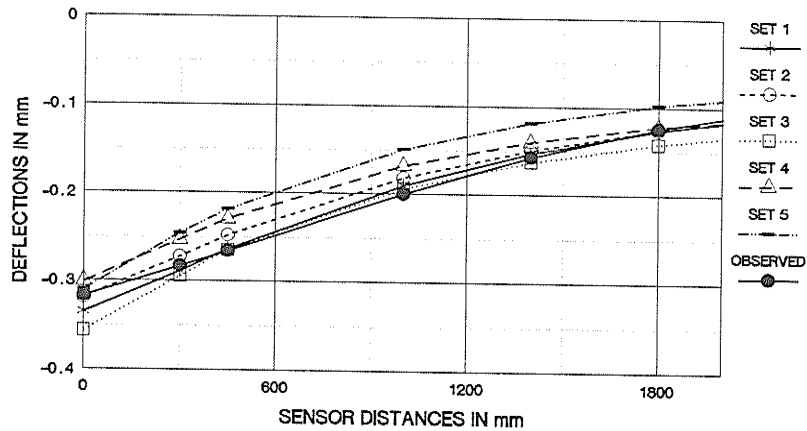
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

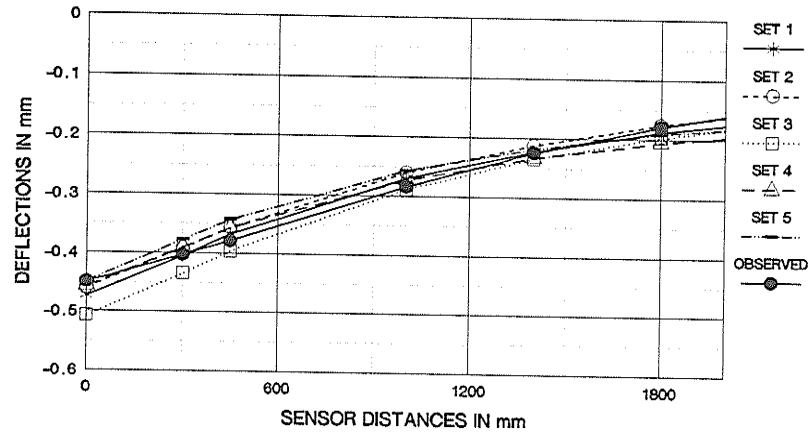


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

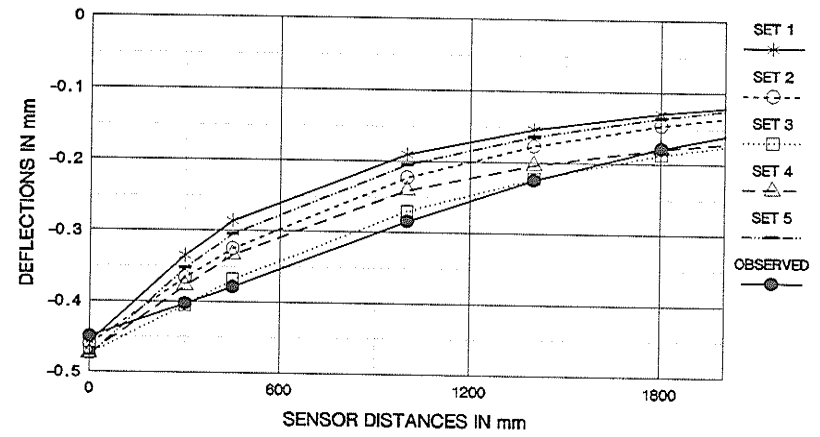
REGINA: RWY . 12-30: STA. 6 + 110: LOAD 779 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

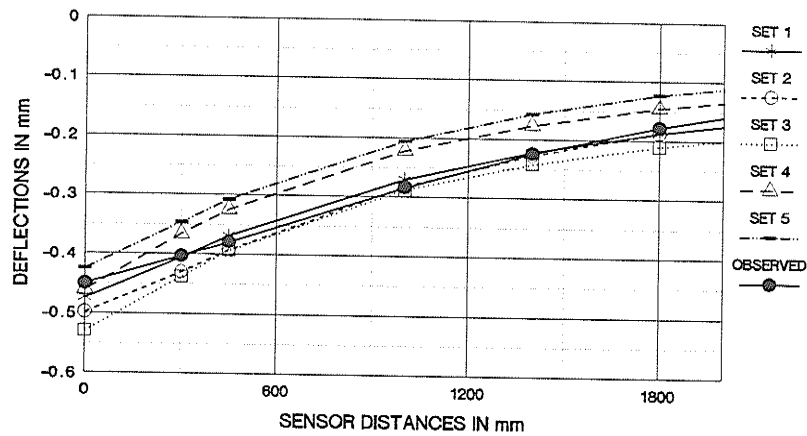
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

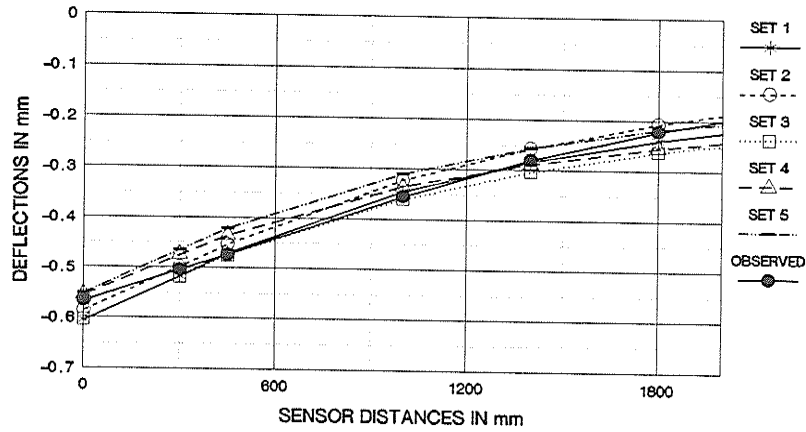


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

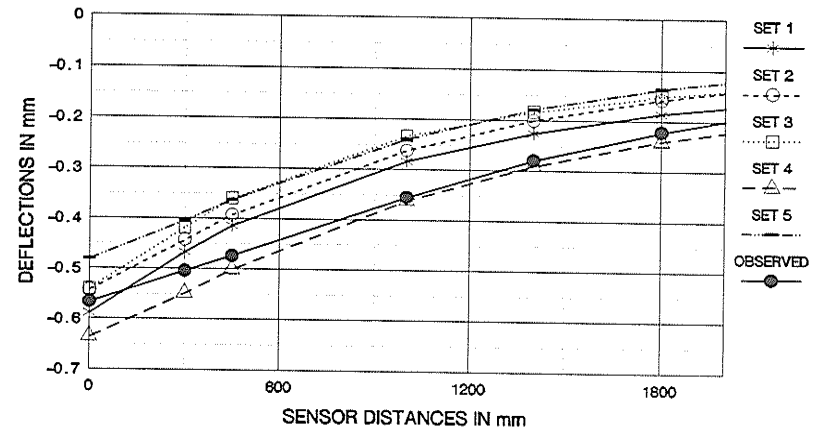
REGINA: RWY. 12-30: STA. 6 + 110: LOAD 1158 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

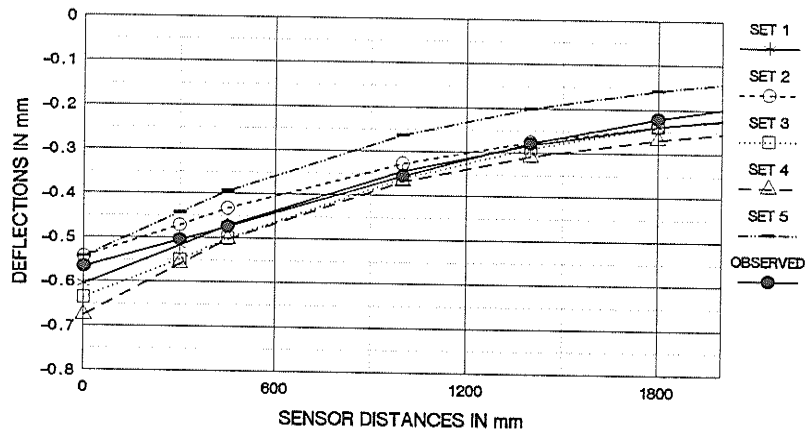
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

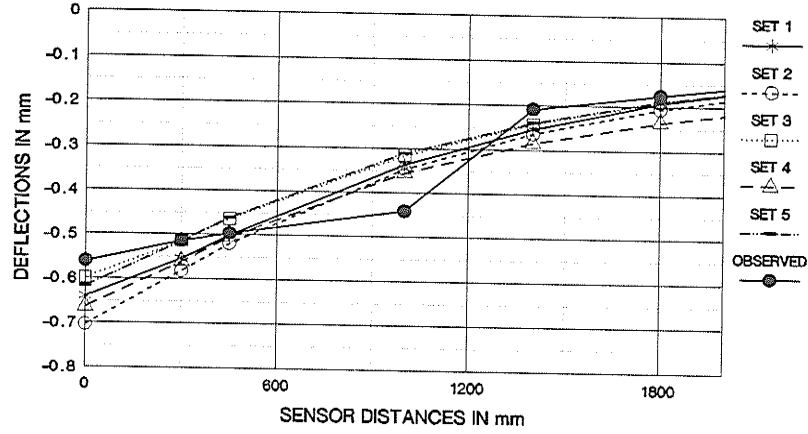


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

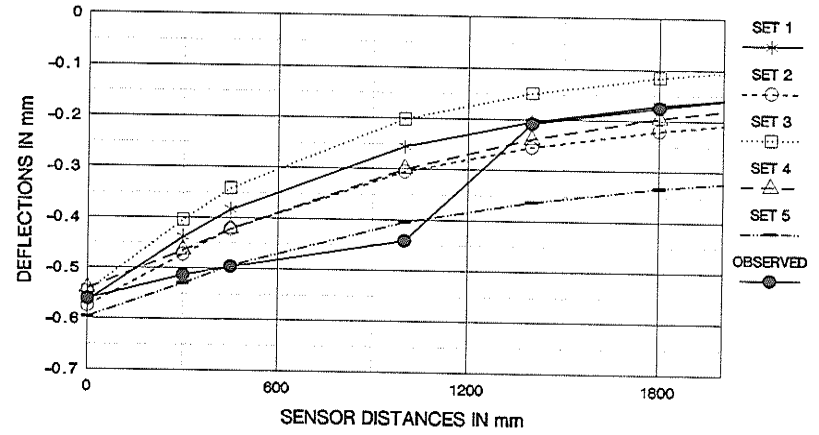
REGINA: RWY. 12-30: STA. 6 + 110: LOAD 1479 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

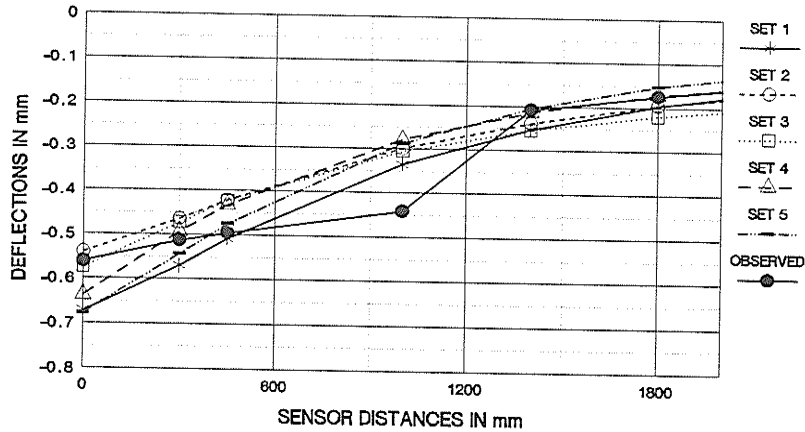
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

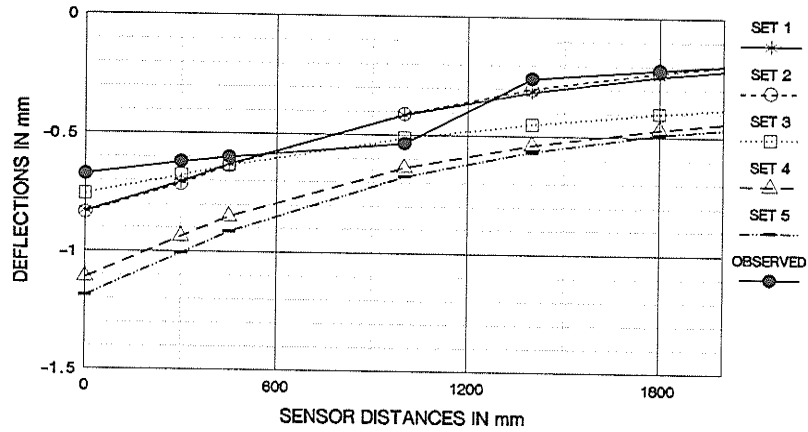


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

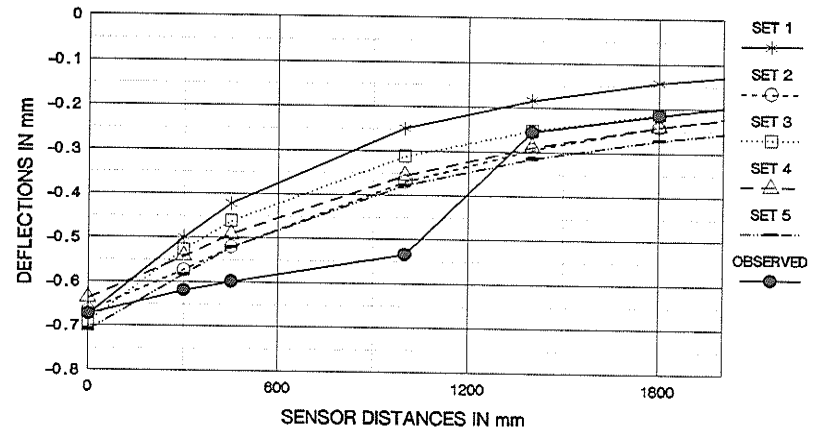
REGINA: RWY. 12-30: STA. 6 + 290: LOAD 1202 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

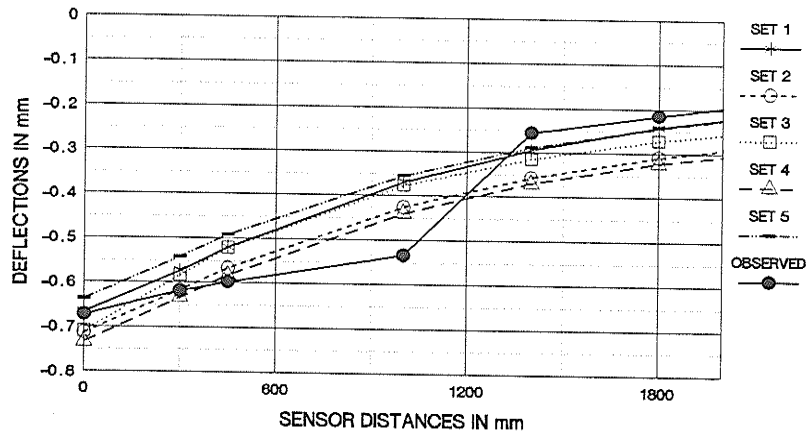
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

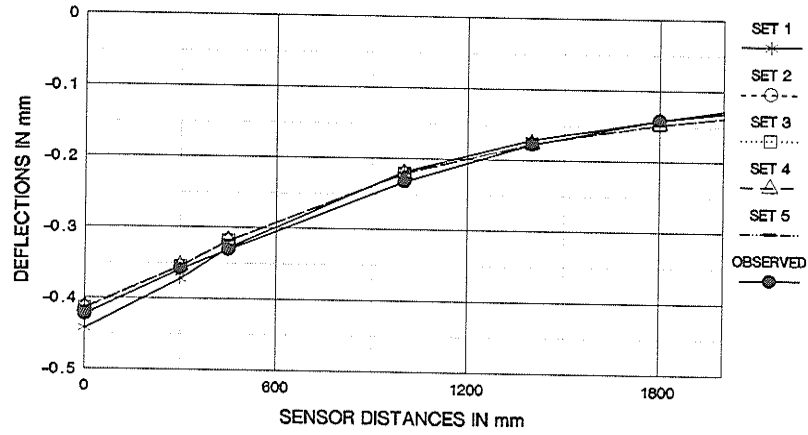


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

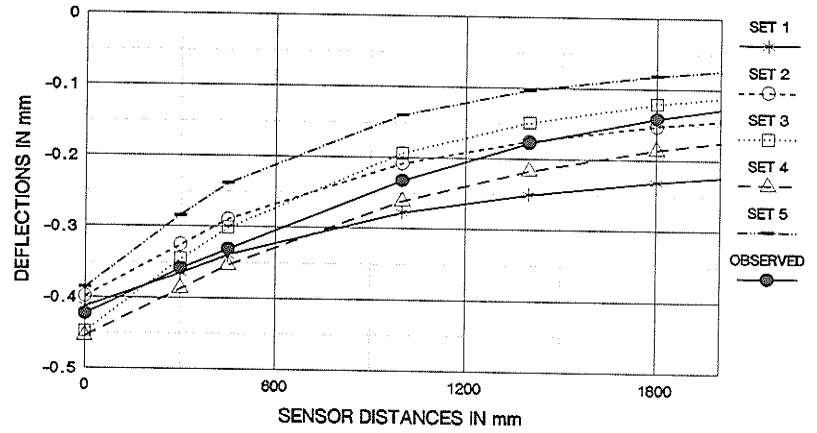
REGINA: RWY. 12-30: STA. 6 + 290: LOAD 1484 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

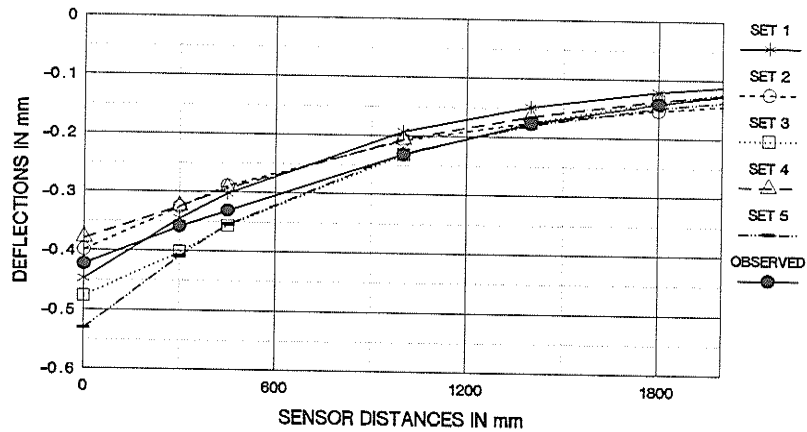
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

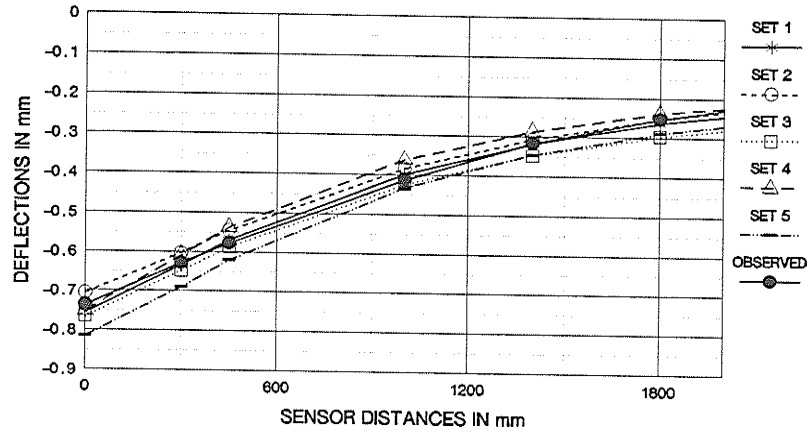


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

REGINA: RWY. 12-30: STA. 6 + 410: LOAD 842 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

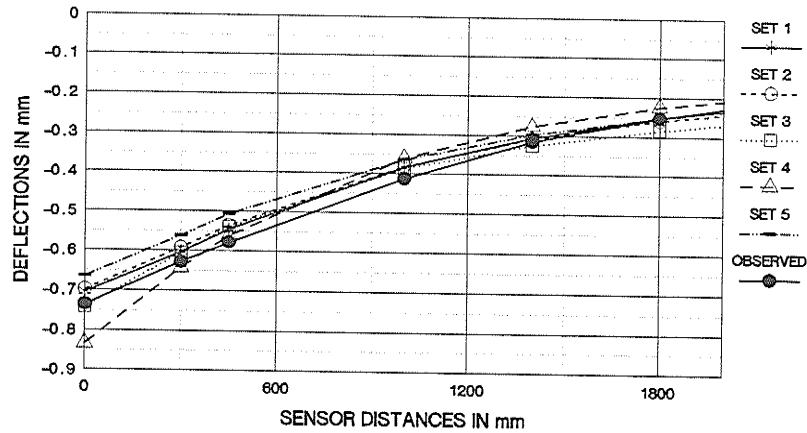
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

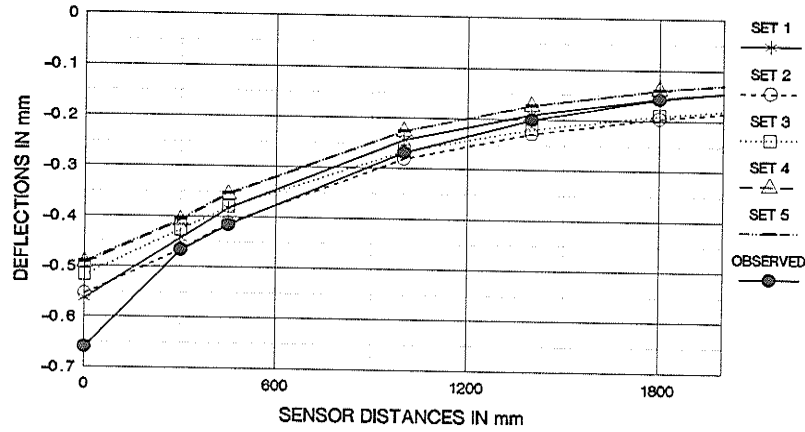


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

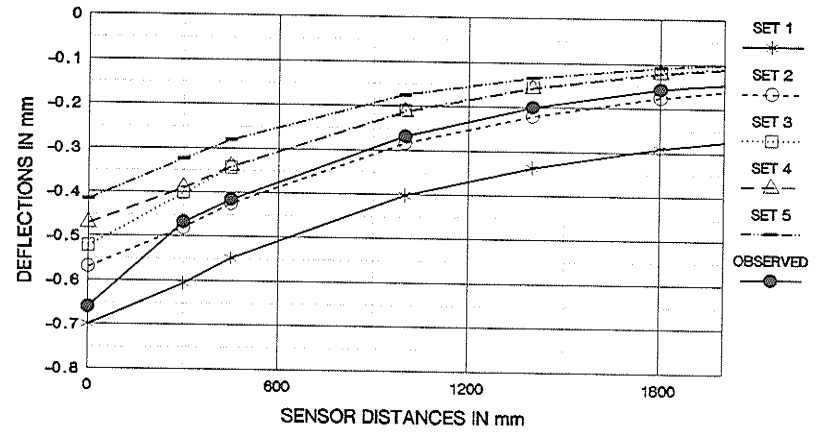
REGINA: RWY. 12-30: STA. 6 + 410: LOAD 1568 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

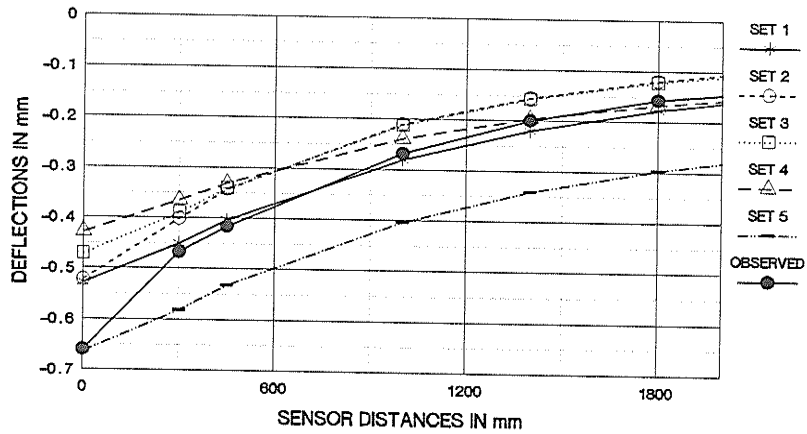
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

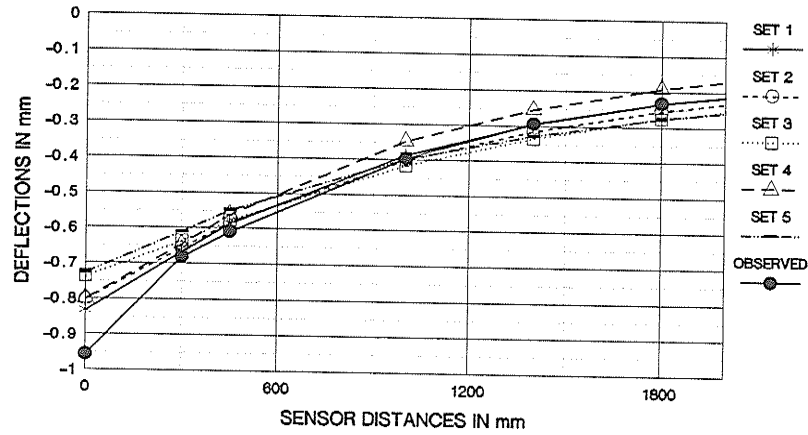


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

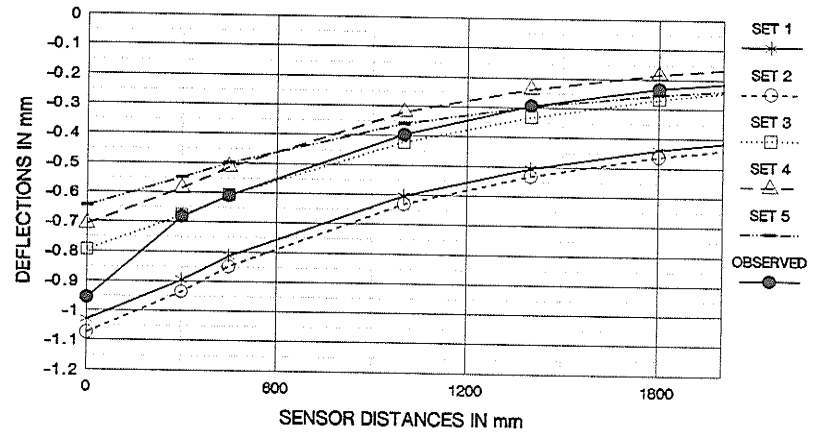
REGINA: RWY. 12-30: STA. 6 + 890: LOAD 758 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

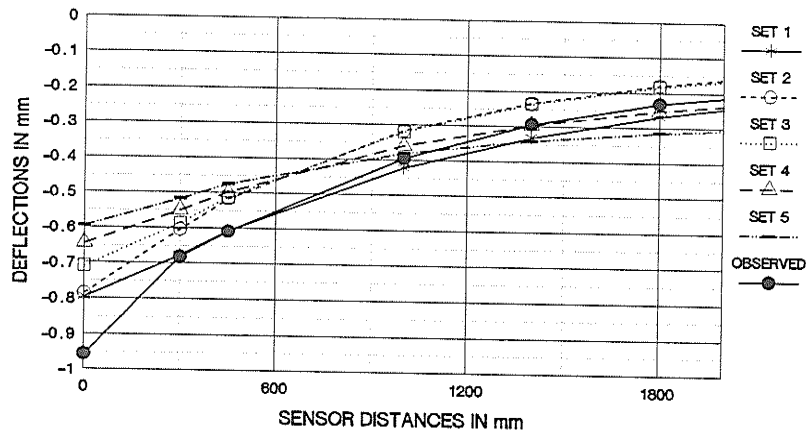
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

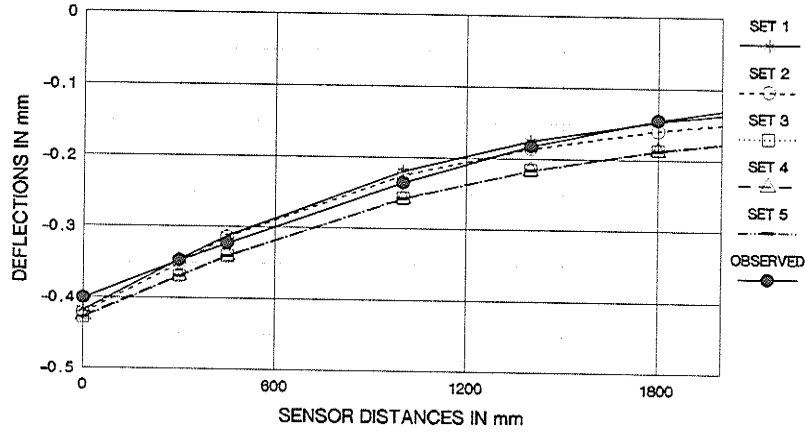


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

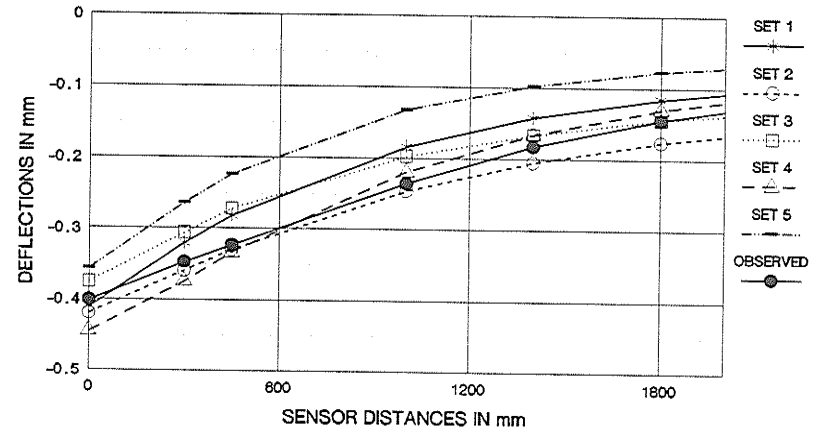
REGINA: RWY. 12-30: STA. 6 + 890: LOAD 1141 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

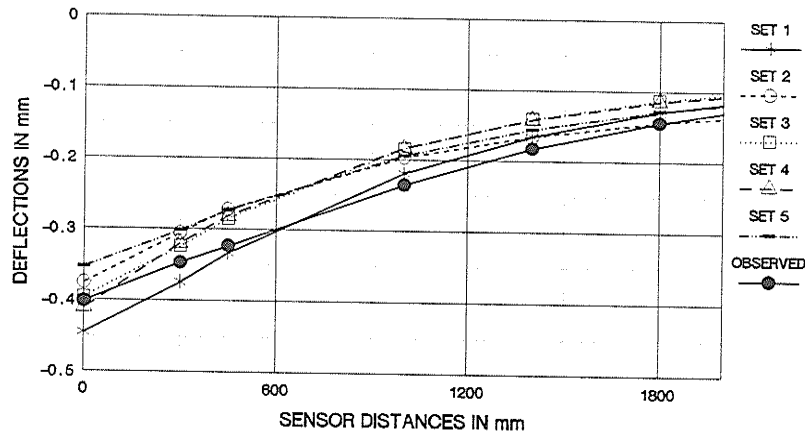
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

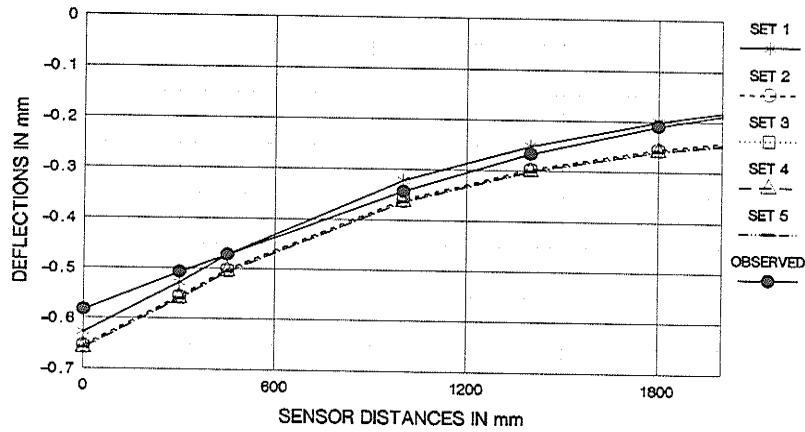


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

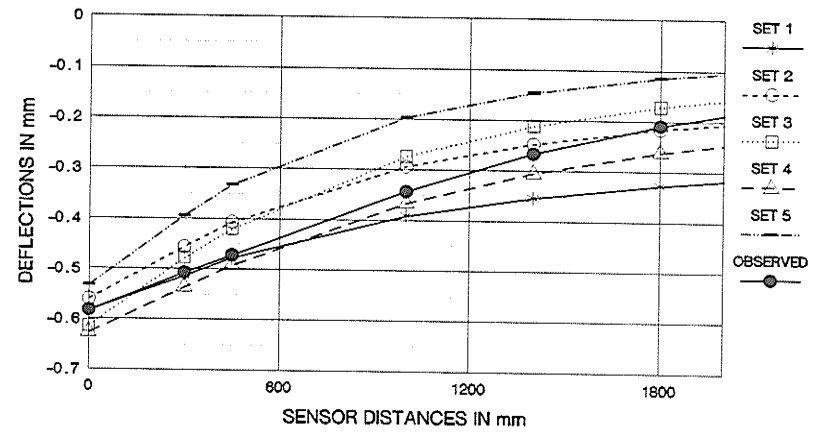
REGINA: RWY . 12-30: STA. 7 + 040: LOAD 798 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

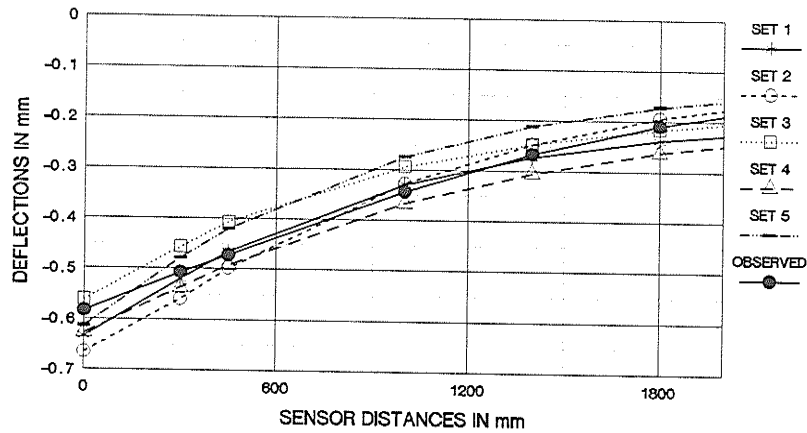
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

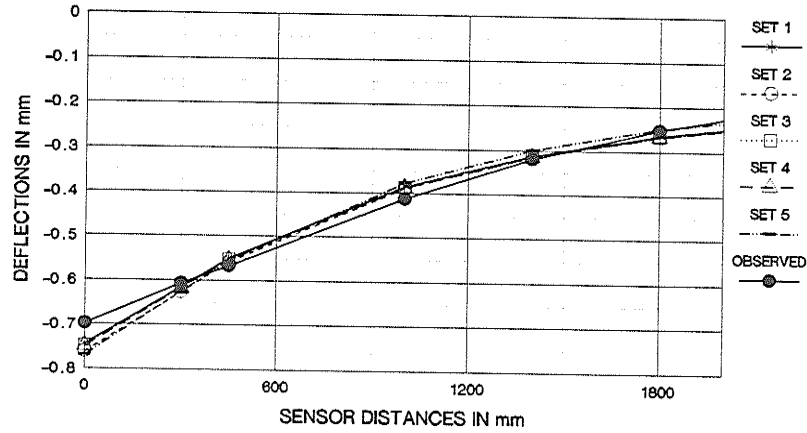


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

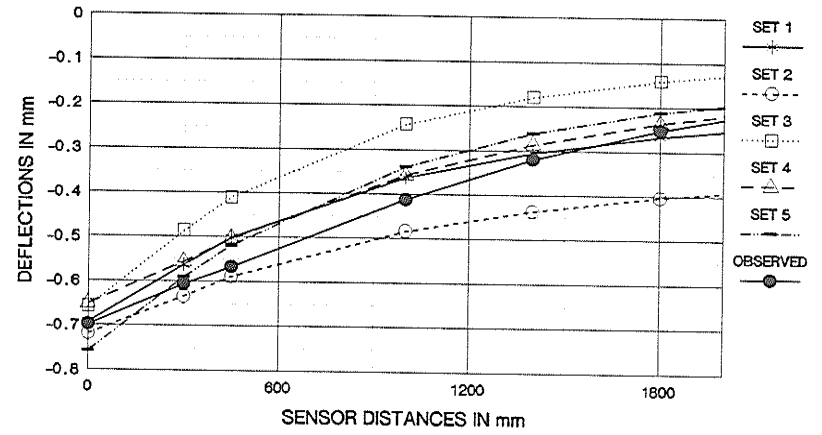
REGINA: RWY. 12-30: STA. 7 + 040: LOAD 1192 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

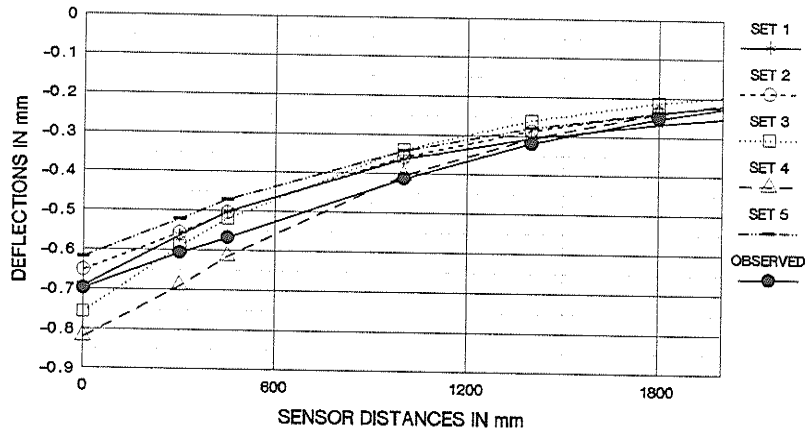
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

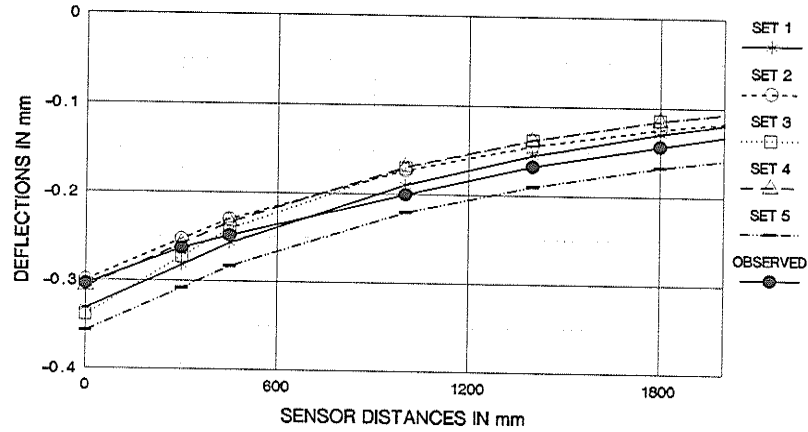


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

REGINA: RWY. 12-30: STA. 7 + 040: LOAD 1471 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

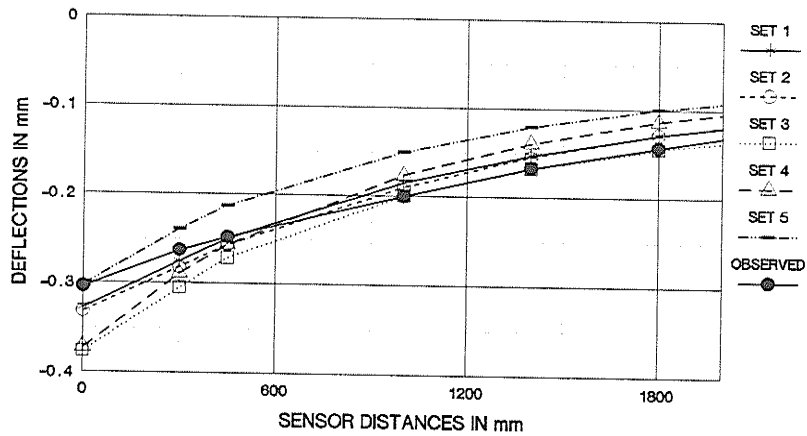
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS

COMPUTATION MISSED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

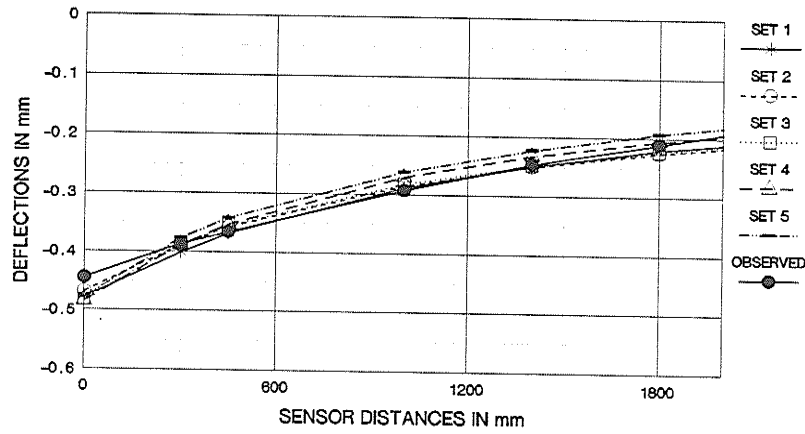


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

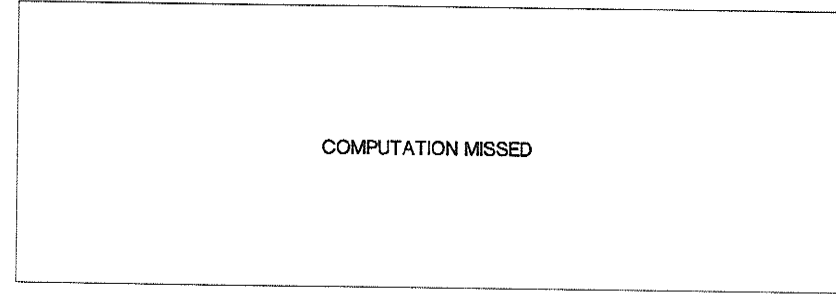
REGINA: RWY . 12-30: STA . 7 + 190: LOAD 788 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

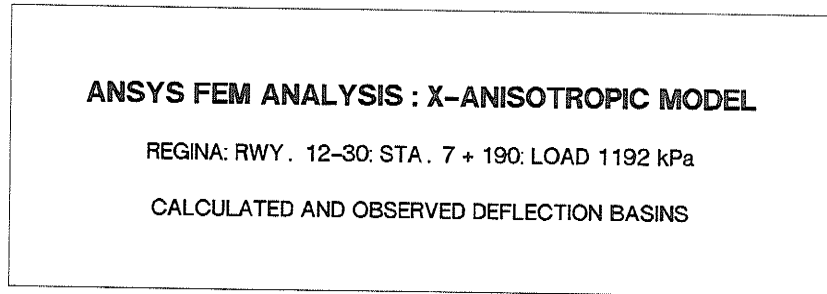
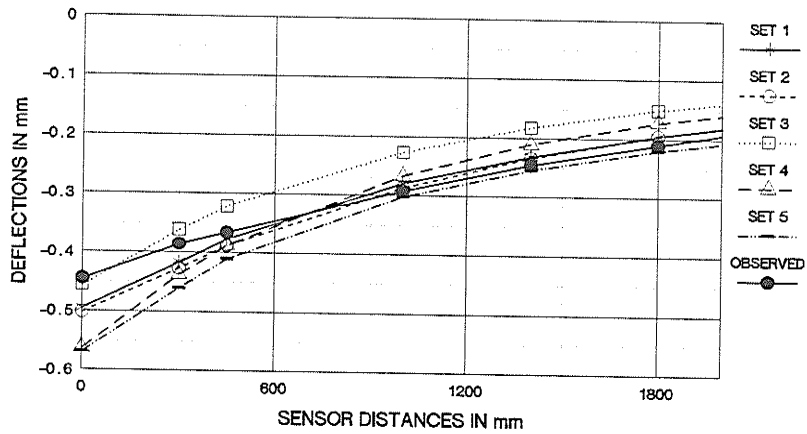
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



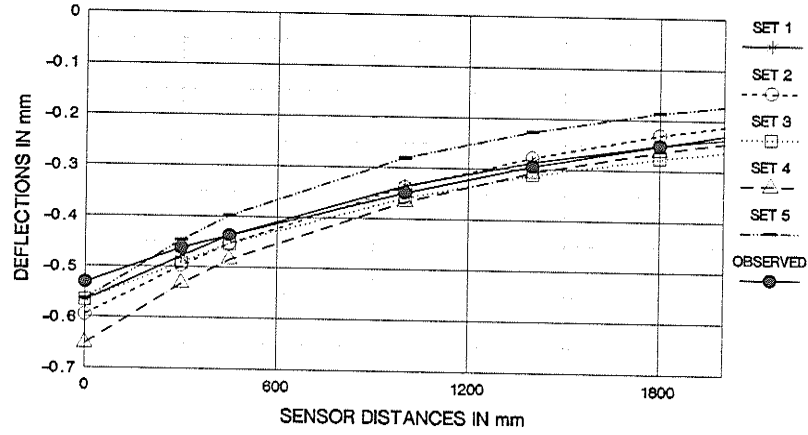
OPTIMIZATION CRITERION: MAXIMUM DEFLECTIONS



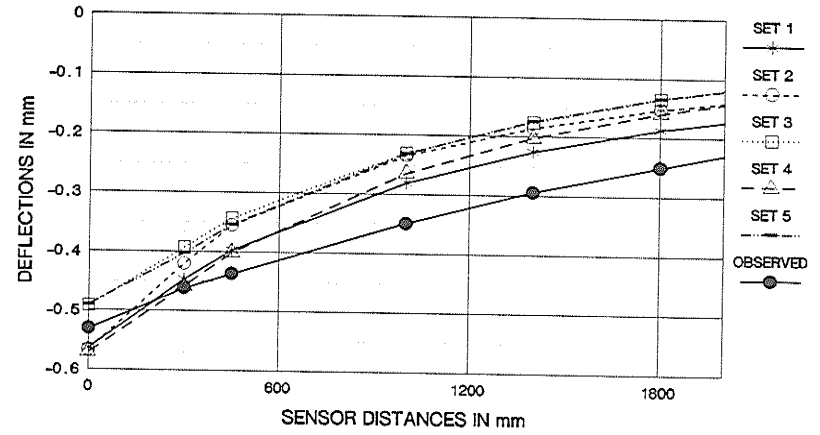
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



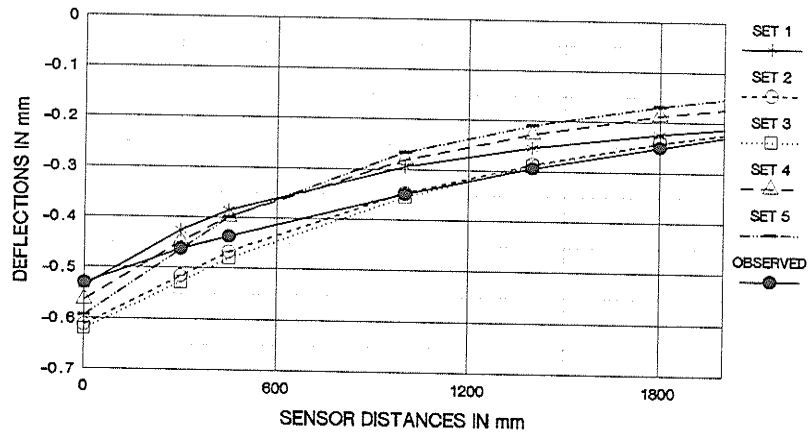
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

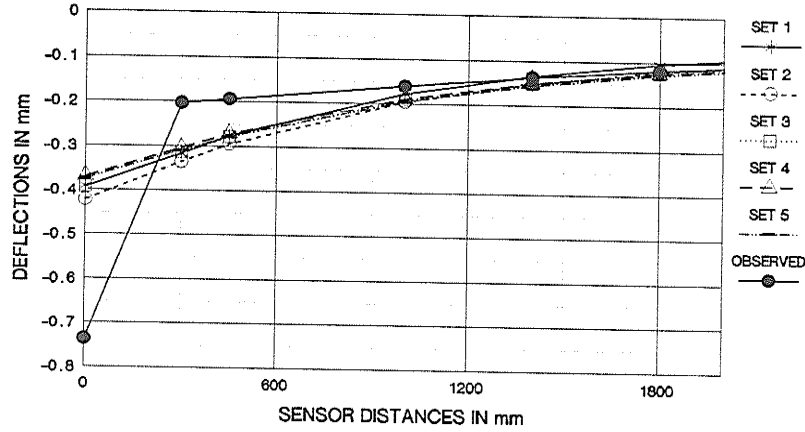


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

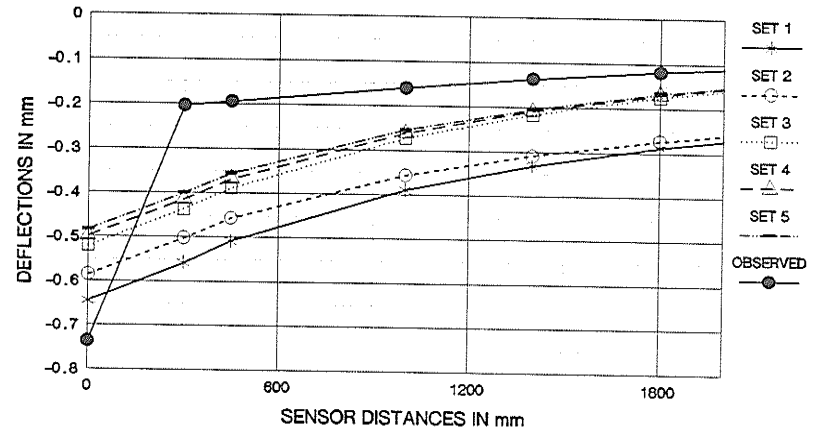
REGINA: RWY. 12-30: STA. 7 + 190: LOAD 1474 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

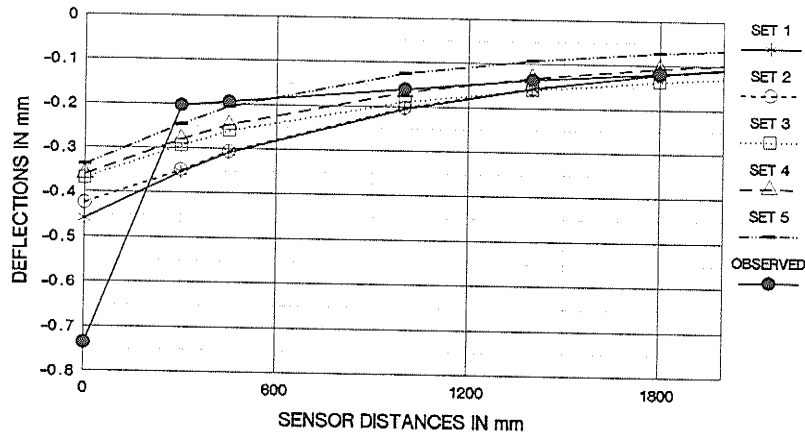
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

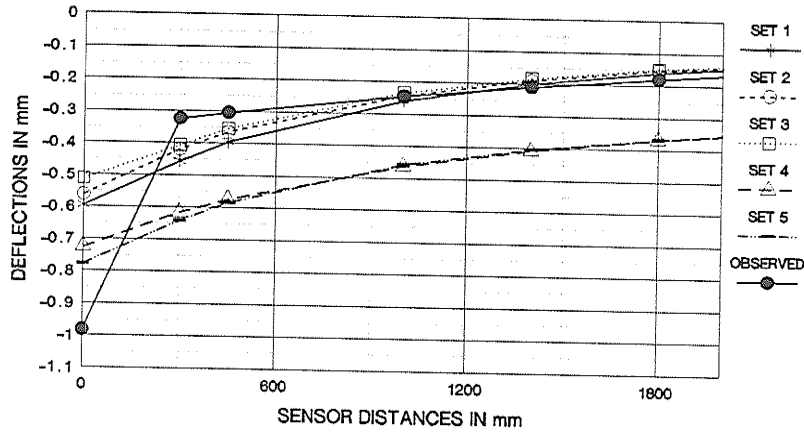


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

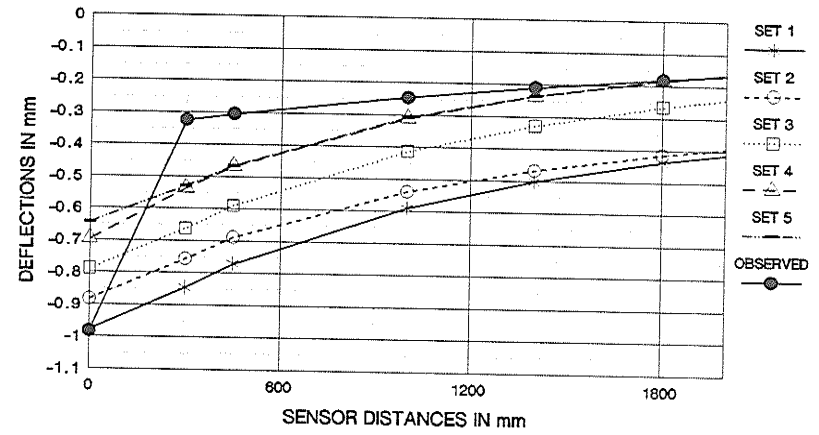
REGINA: RWY . 12-30: STA . 7 + 220: LOAD 745 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

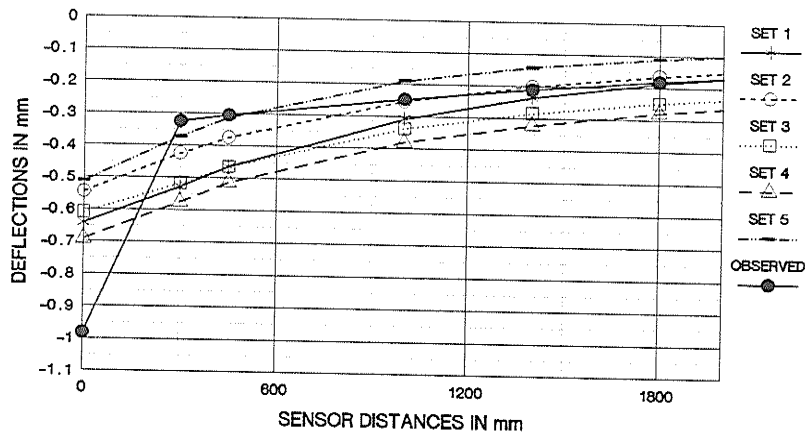
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

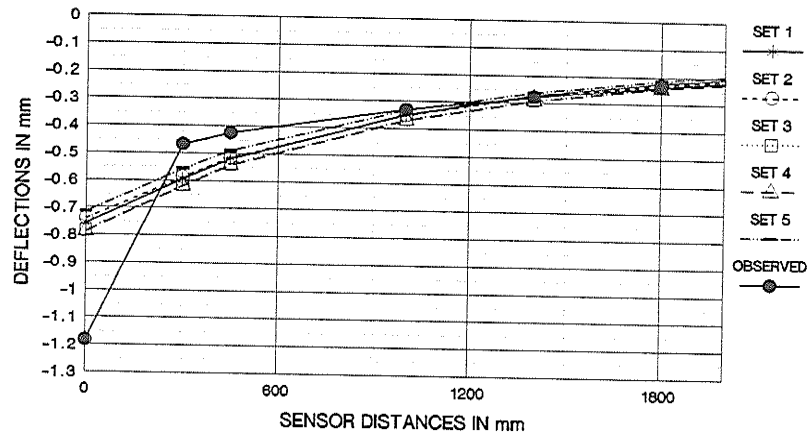


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

REGINA: RWY. 12-30: STA. 7 + 220: LOAD 1129 kPa

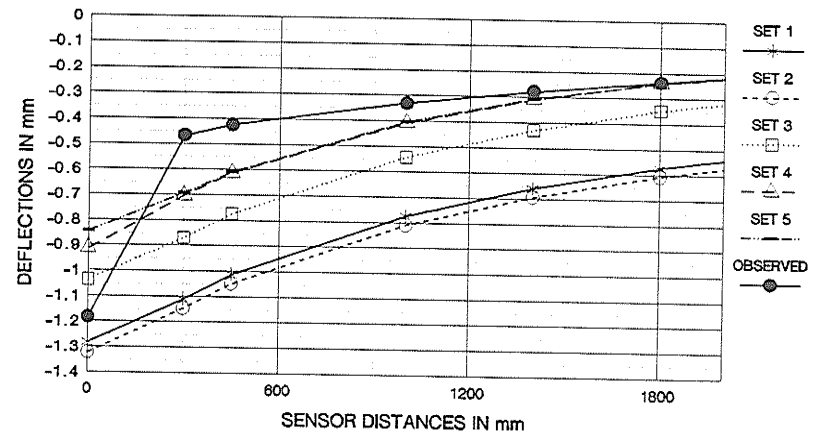
CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



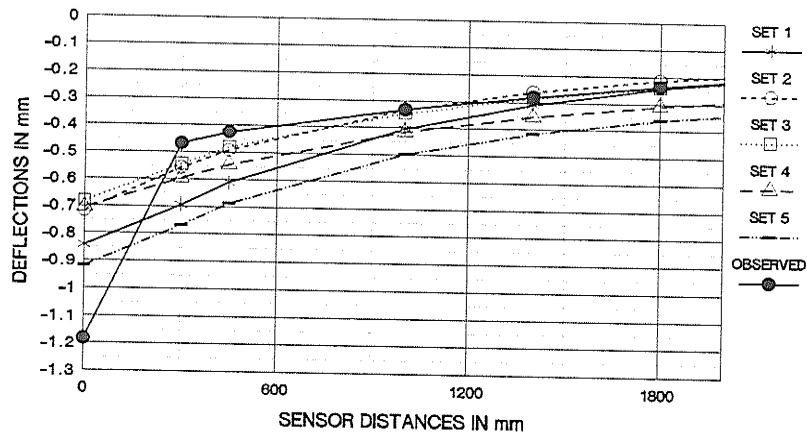
LOADING PLATE BESIDE A CRACK.

OPTIMIZING CRITERION: MAXIMUM DEFLECTION



LOADING PLATE BESIDE A CRACK.

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



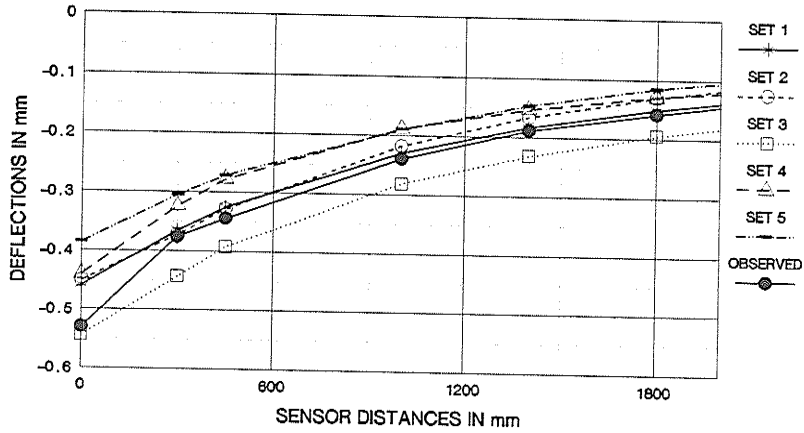
LOADING PLATE NEAR A CRACK

ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

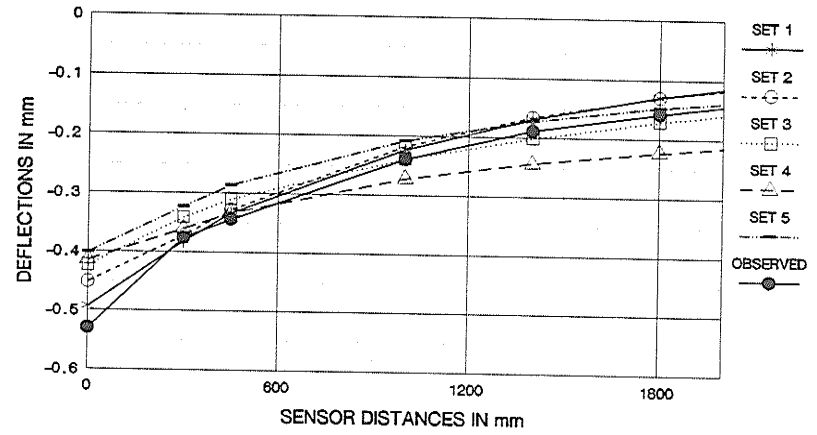
REGINA: RWY . 12-30: STA . 7 + 220: LOAD 1482 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

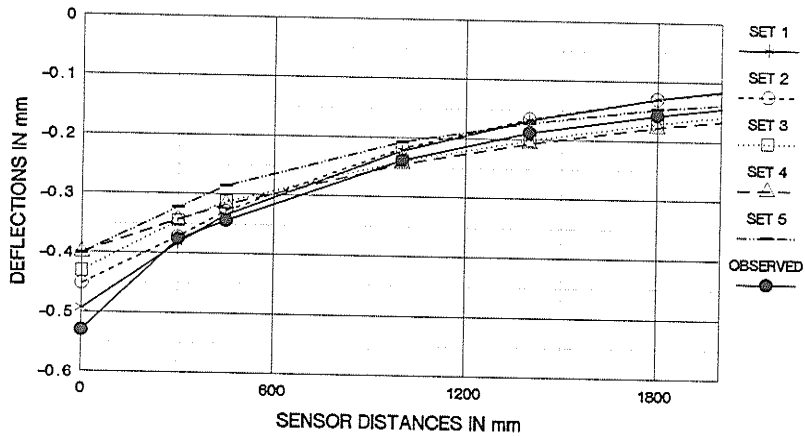
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

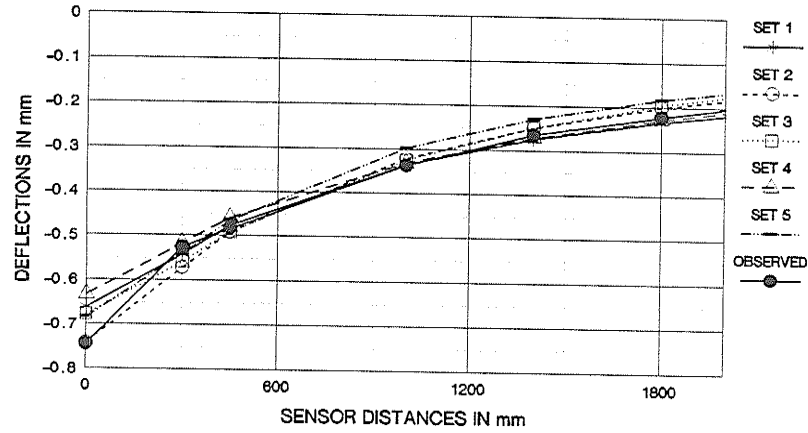


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

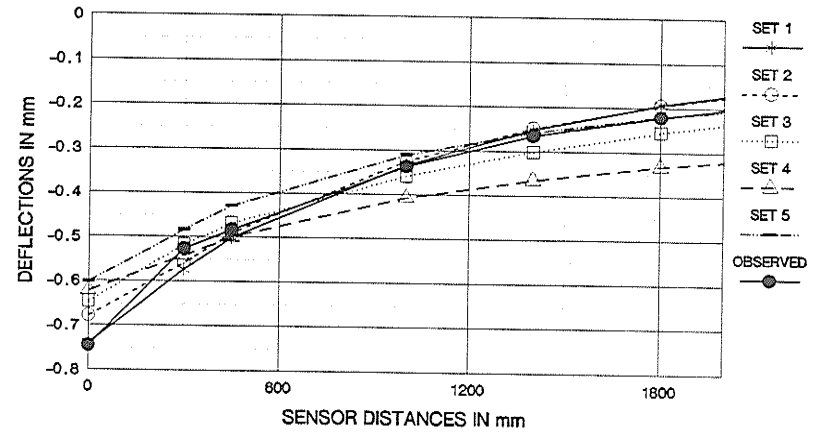
REGINA: RWY. 12-30: STA. 7 + 310 : LOAD 788 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

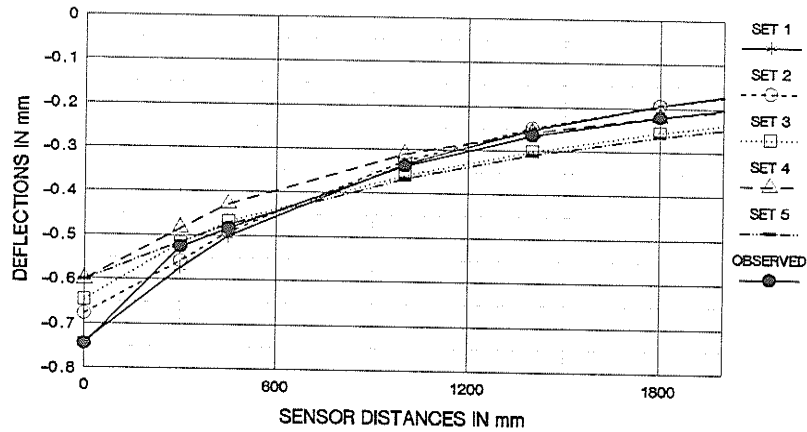
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

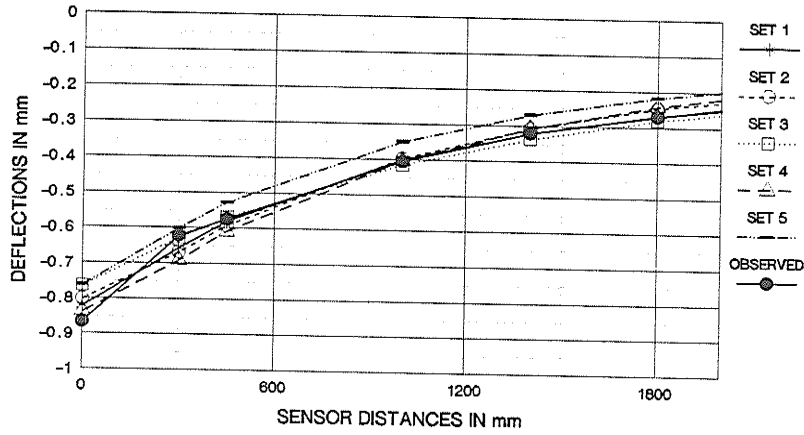


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

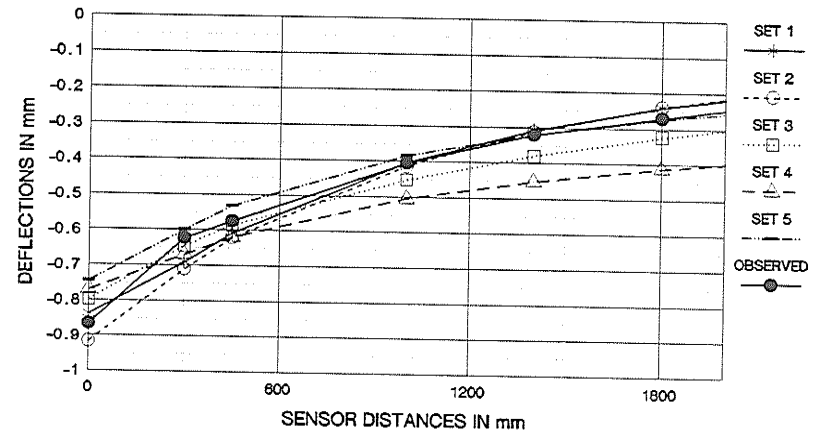
REGINA: RWY . 12-30: STA. 7 + 310 : LOAD 1182 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

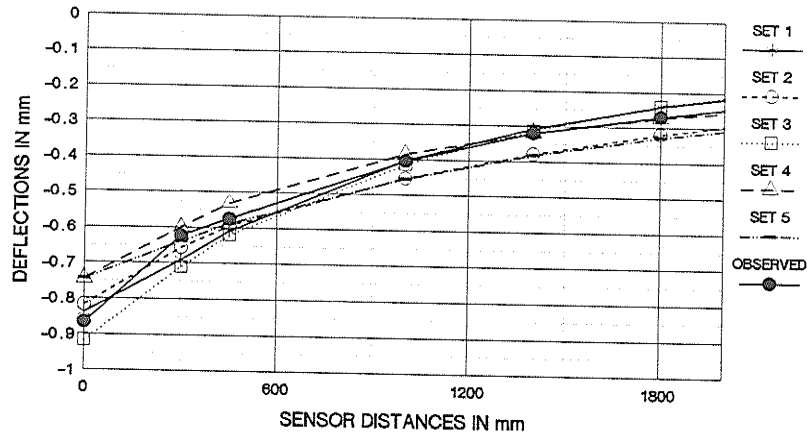
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

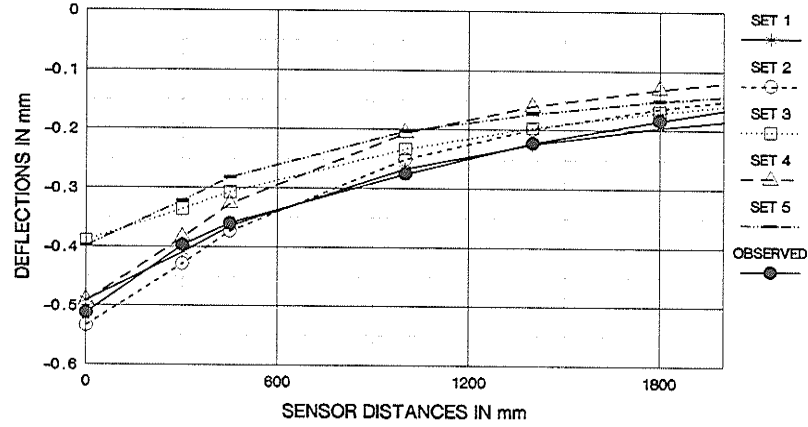


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

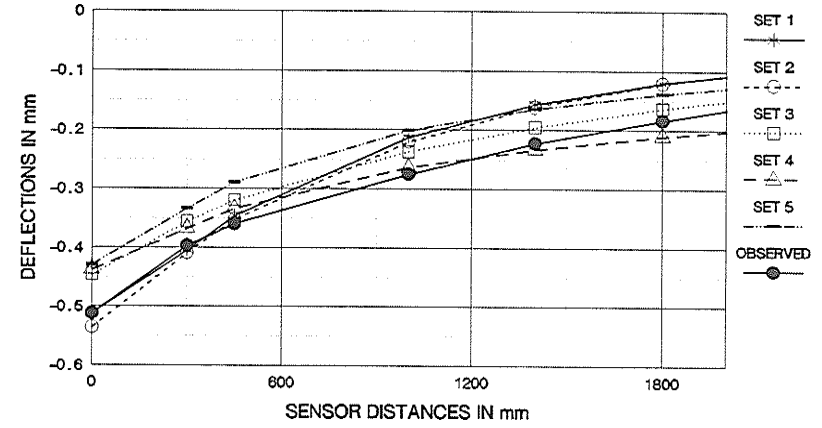
REGINA: RWY. 12-30: STA. 7 + 310 : LOAD 1463 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

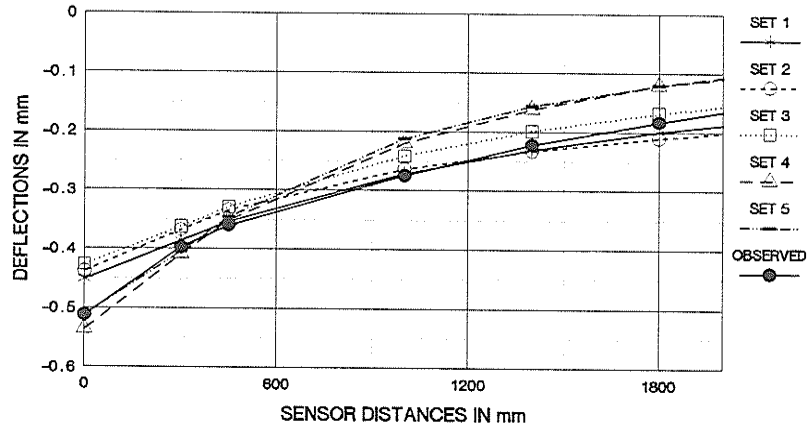
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

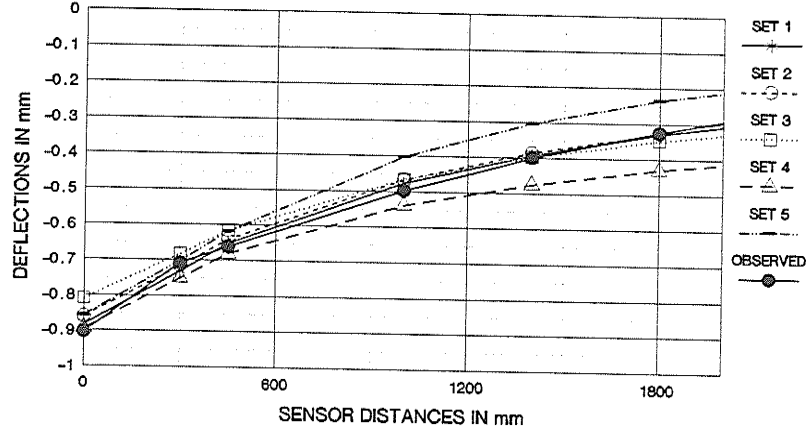


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

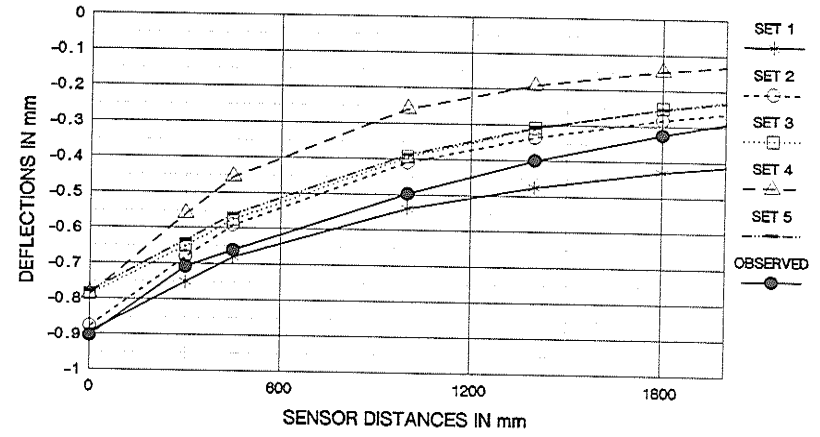
REGINA: RWY . 12-30: STA. 7 + 370: LOAD 739 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

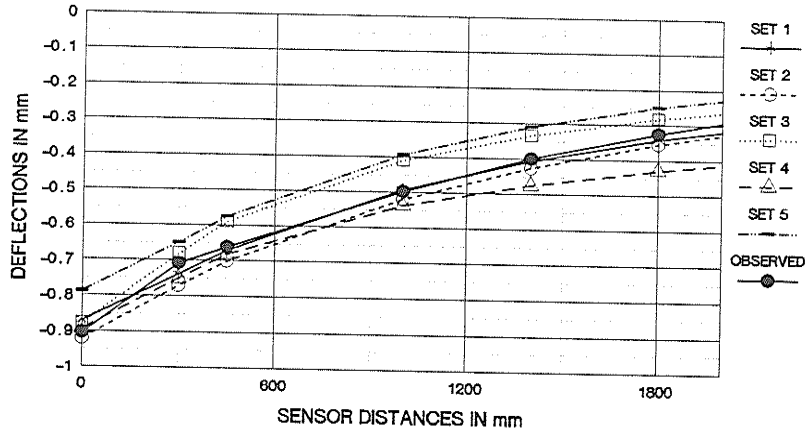
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

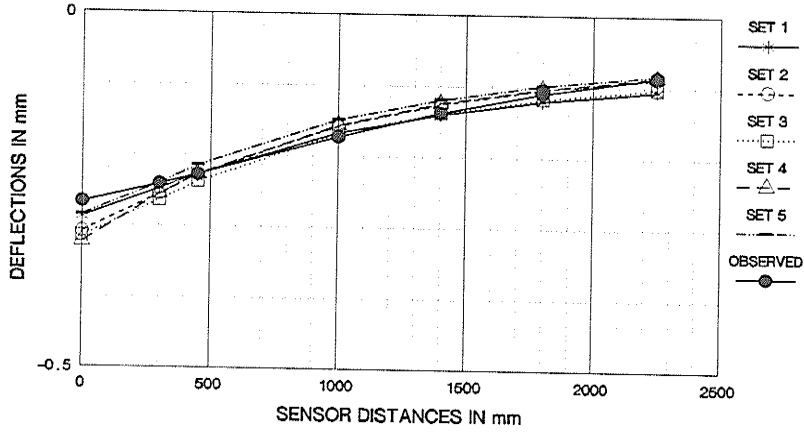


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

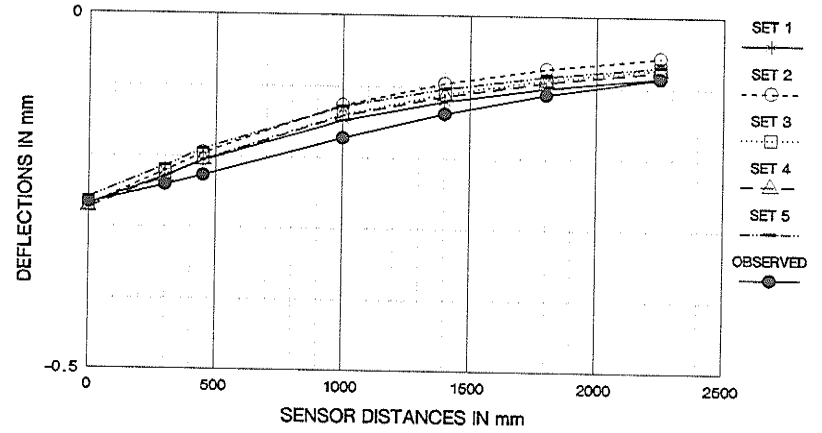
REGINA: RWY. 12-30: STA. 7 + 370: LOAD 1507 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

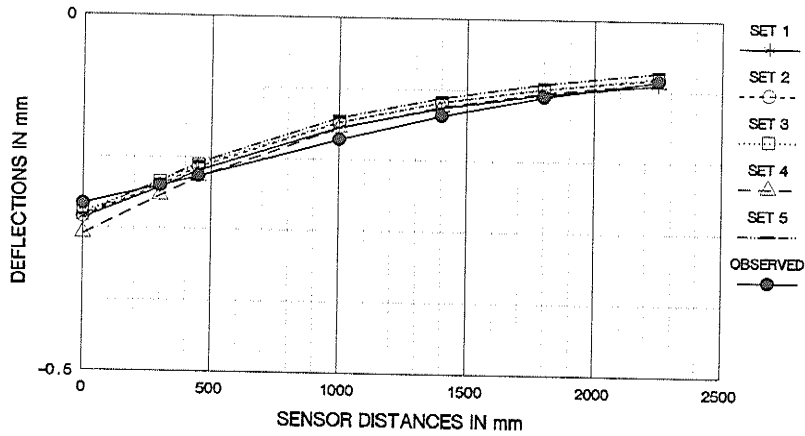
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

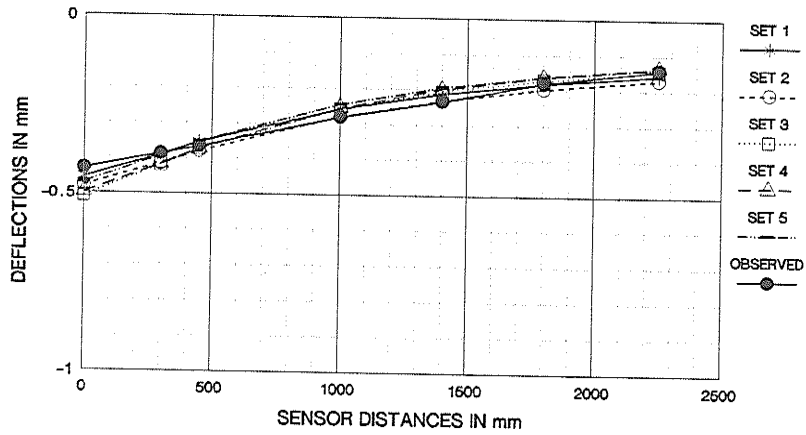


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

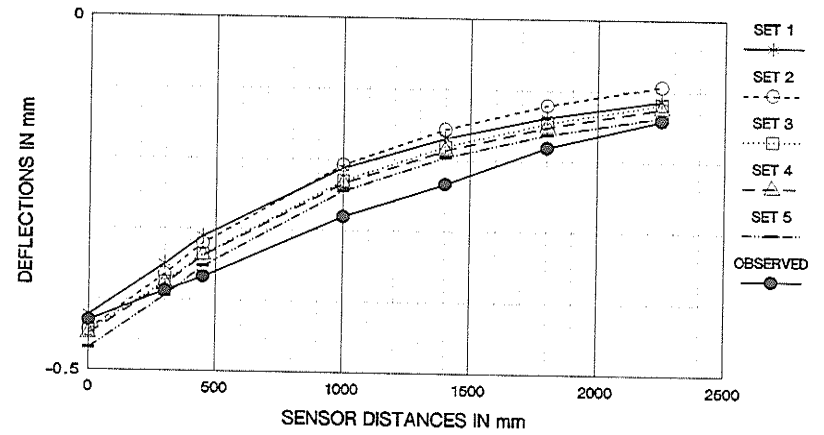
REGINA: RWY. 12-30: STA. 5 + 510 R: LOAD 674 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

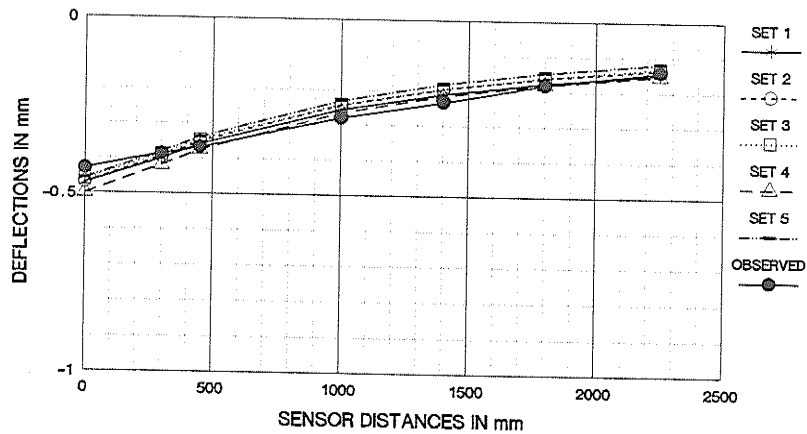
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

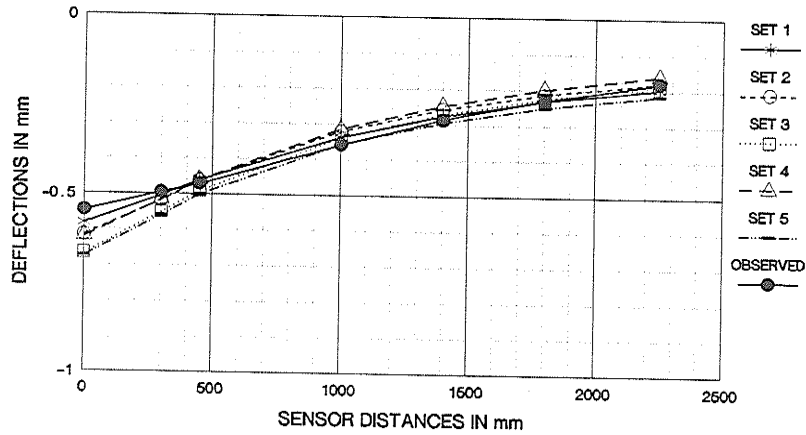


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

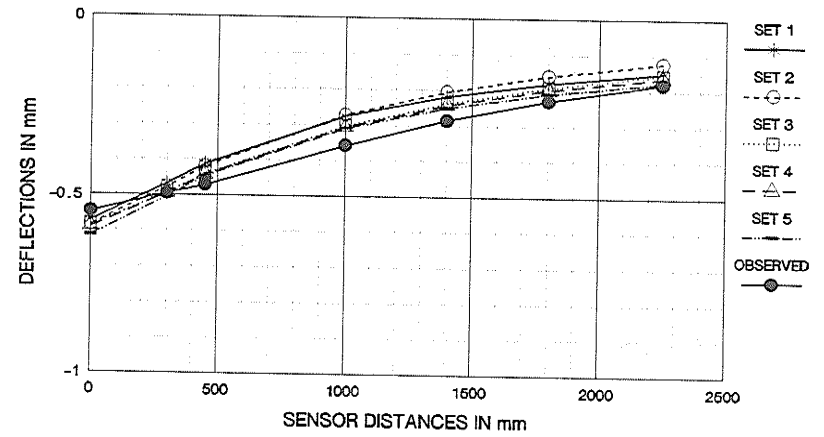
REGINA: RWY. 12-30: STA. 5 + 510 R: LOAD 1130 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

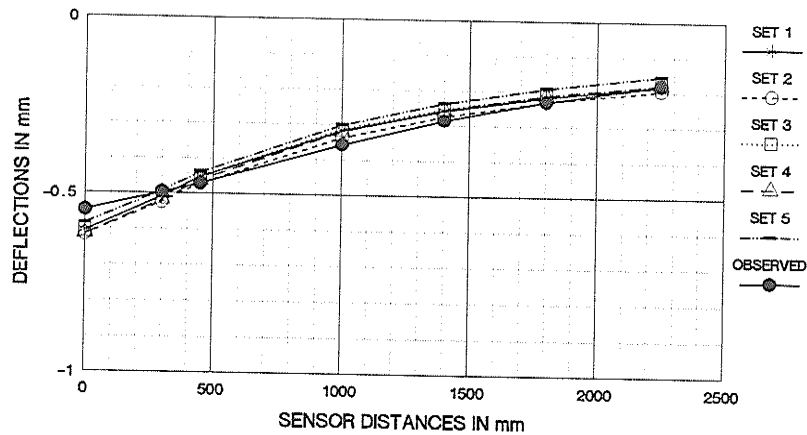
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

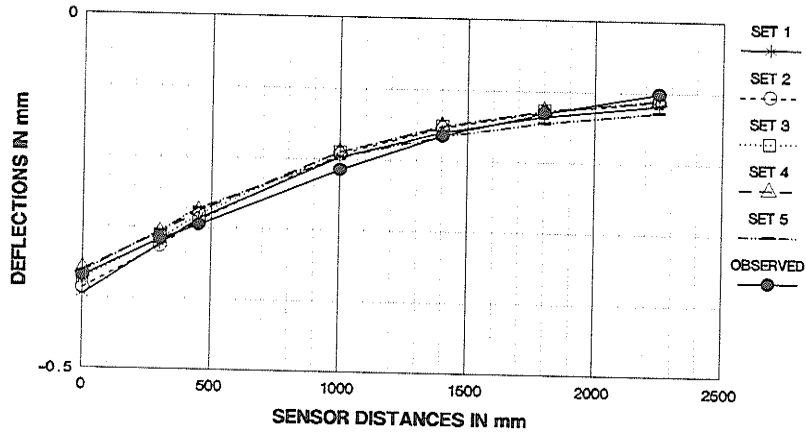


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

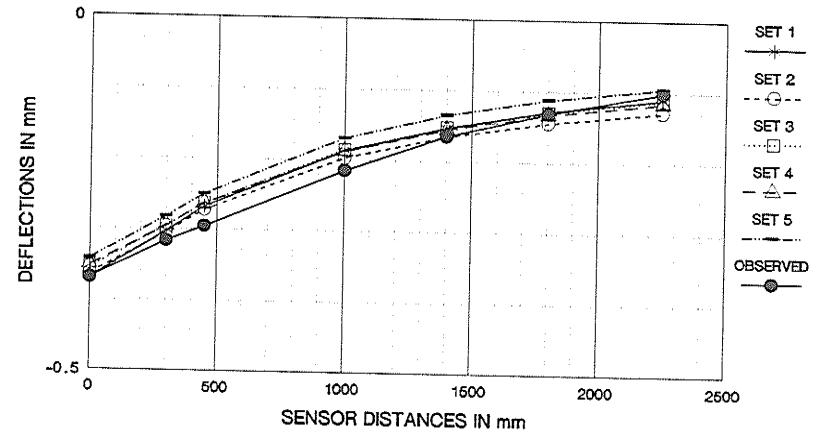
REGINA: RWY. 12-30: STA. 5 + 510 R: LOAD 1483 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

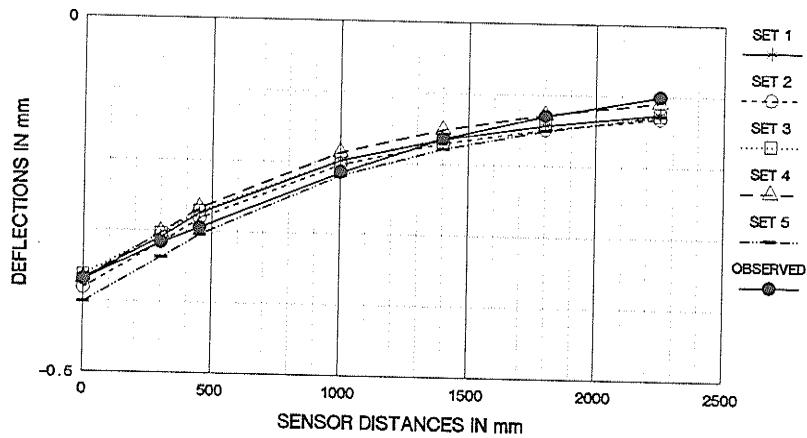
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

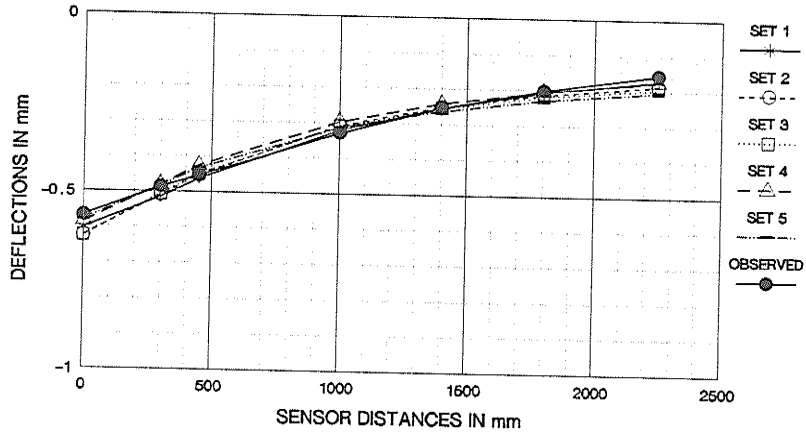


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

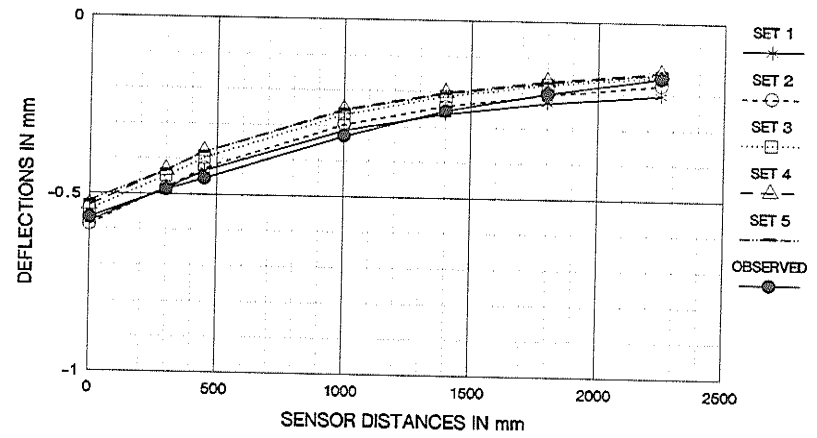
REGINA: RWY. 12-30: STA. 5 + 990 L: LOAD 733 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

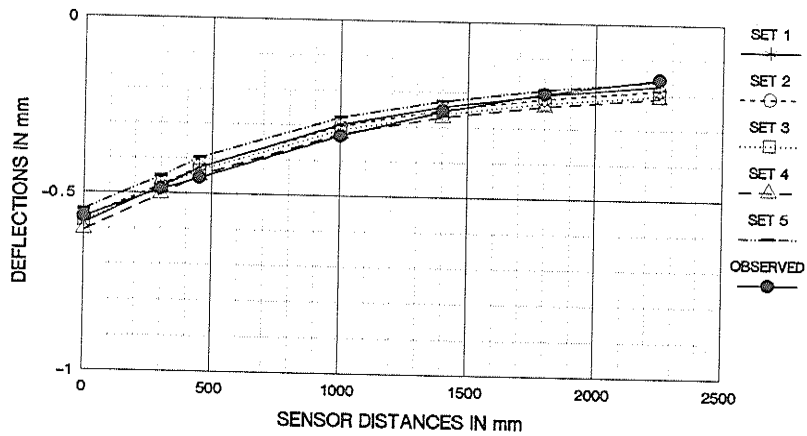
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

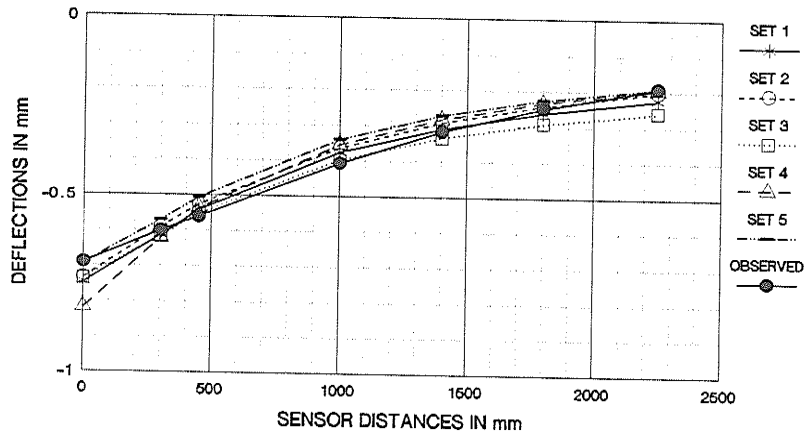


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

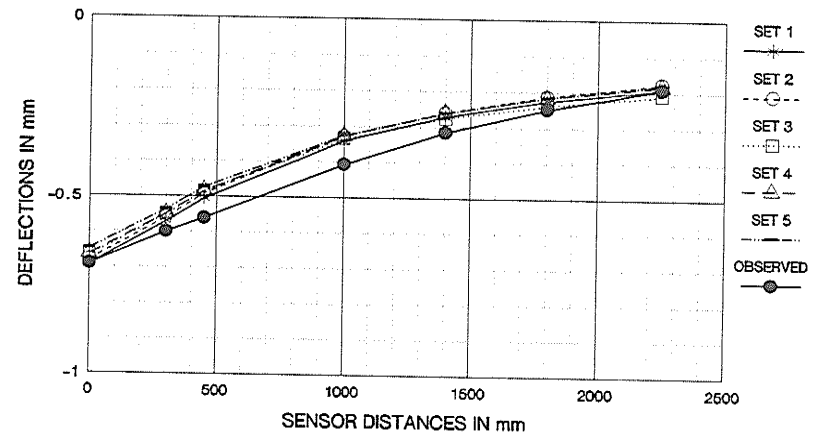
REGINA: RWY. 12-30: STA. 5 + 990 L: LOAD 1166 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

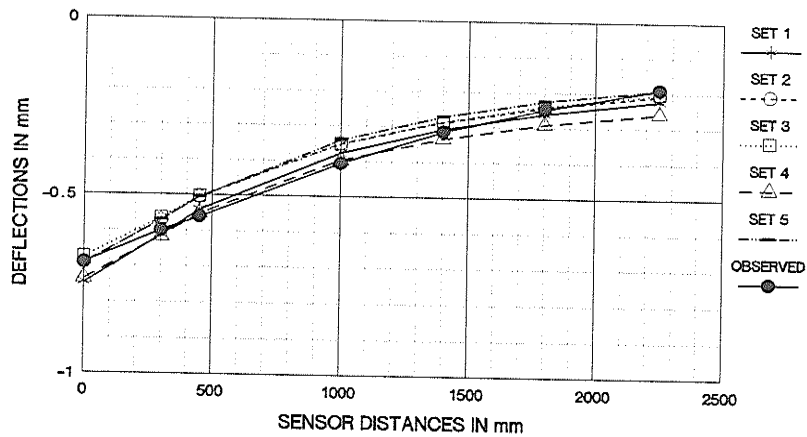
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

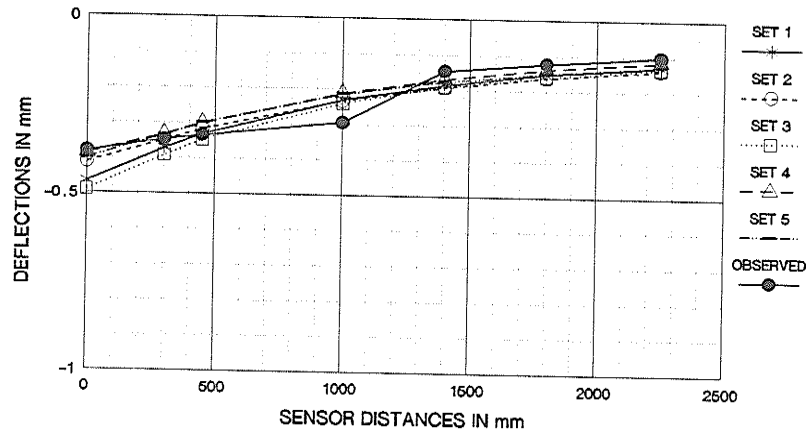


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

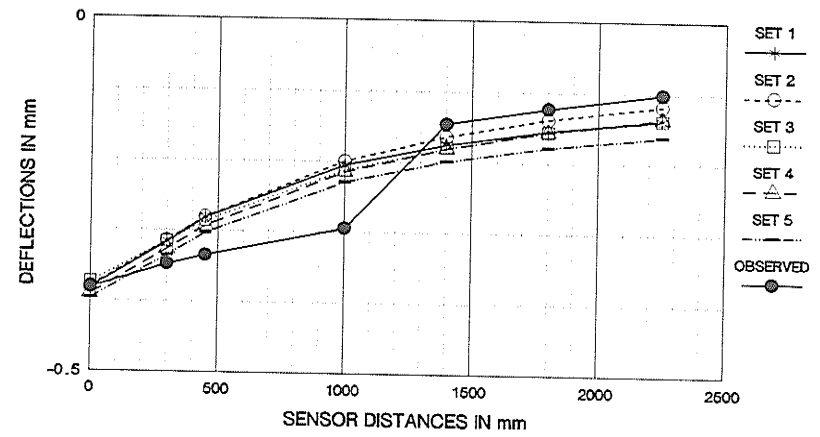
REGINA: RWY. 12-30: STA. 5 + 990 L: LOAD 1485 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

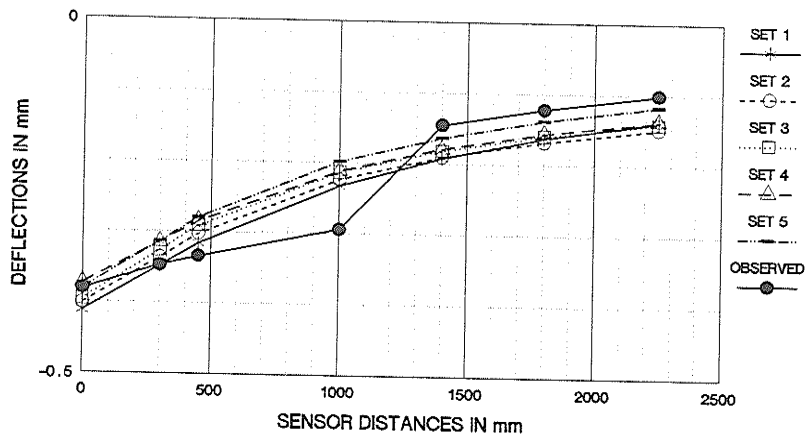
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

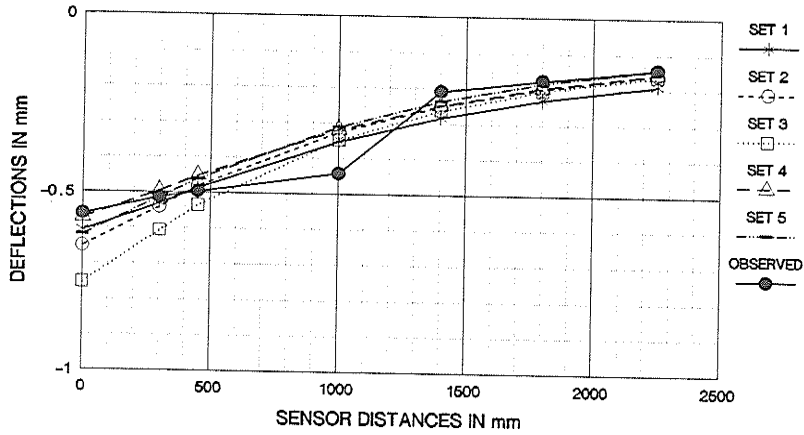


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

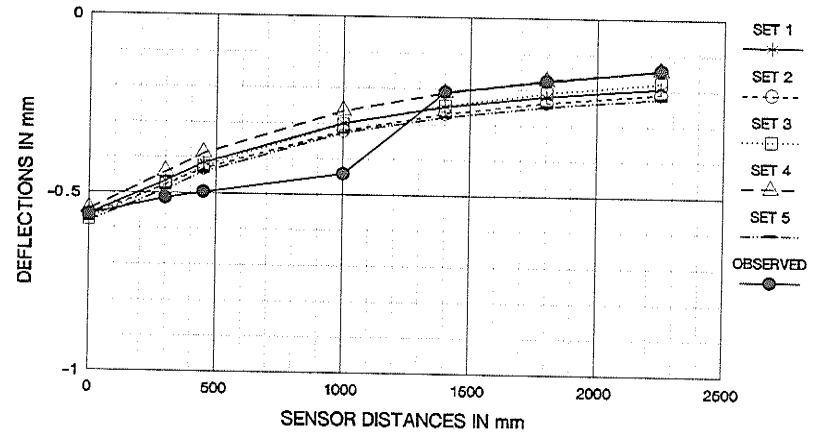
REGINA: RWY. 12-30: STA. 6 + 290 L: LOAD 795 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

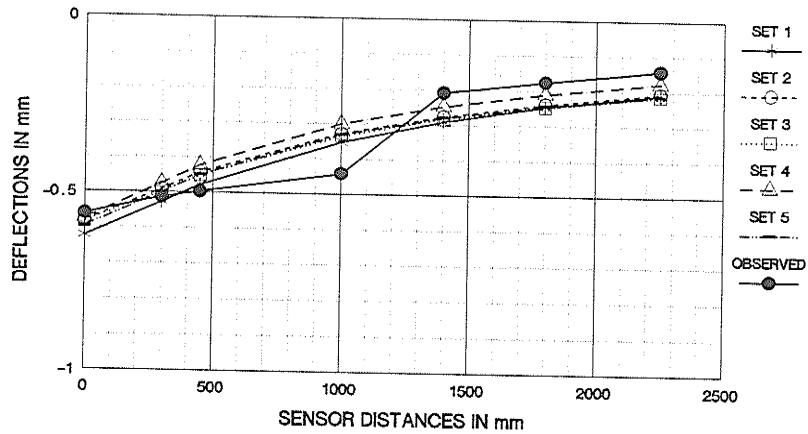
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

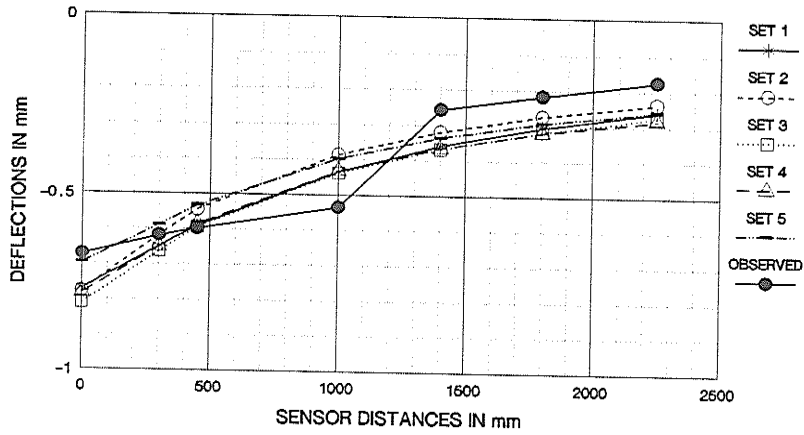


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

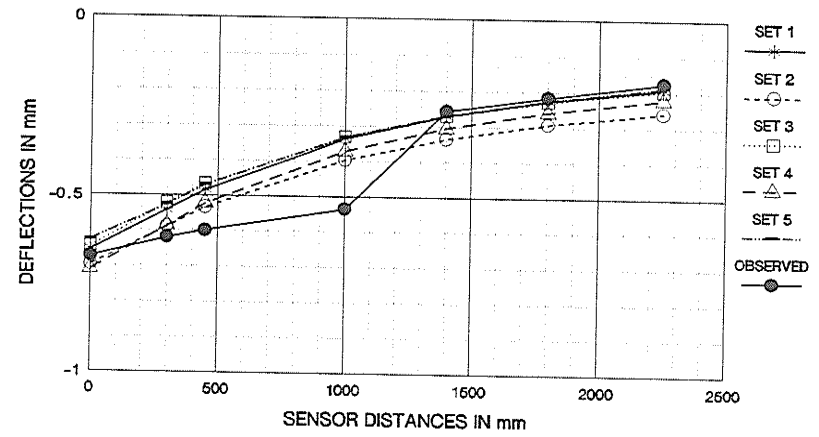
REGINA: RWY. 12-30: STA. 6 + 290 L: LOAD 1202 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

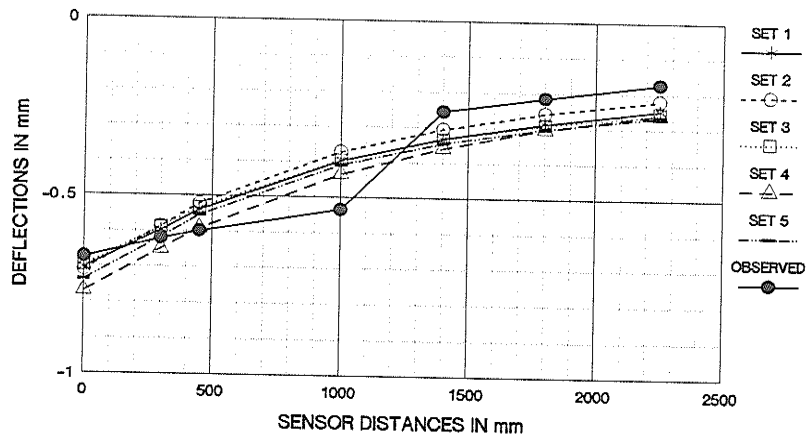
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

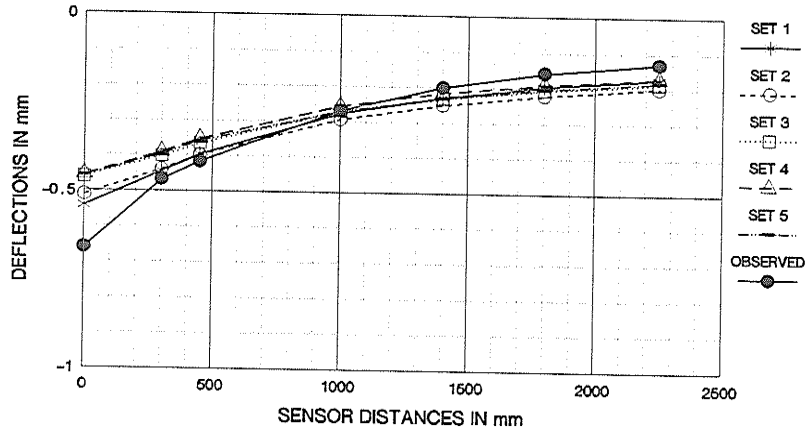


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

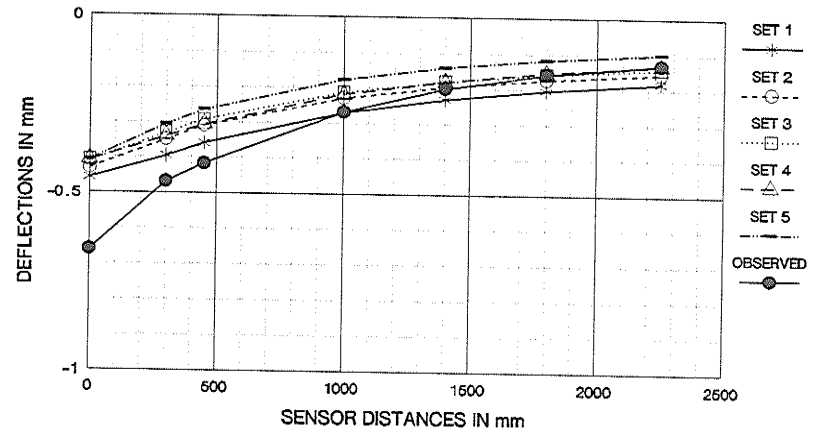
REGINA: RWY. 12-30: STA. 6 + 290 L: LOAD 1484 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

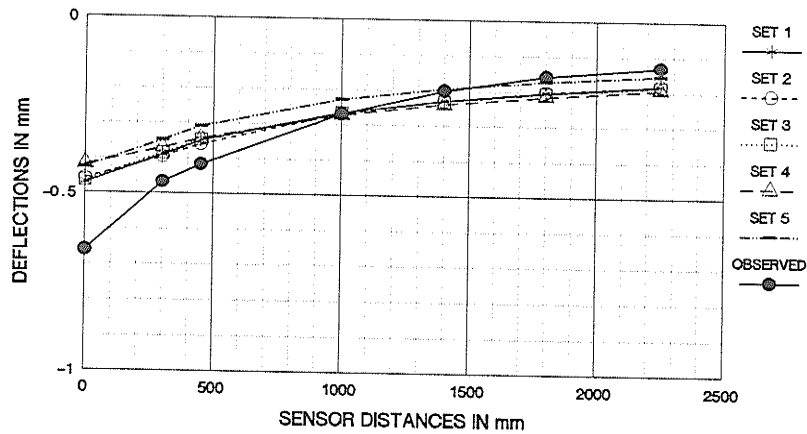
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

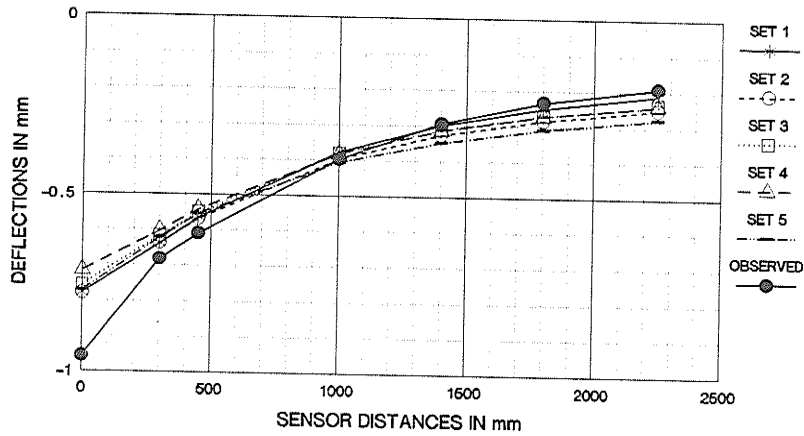


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

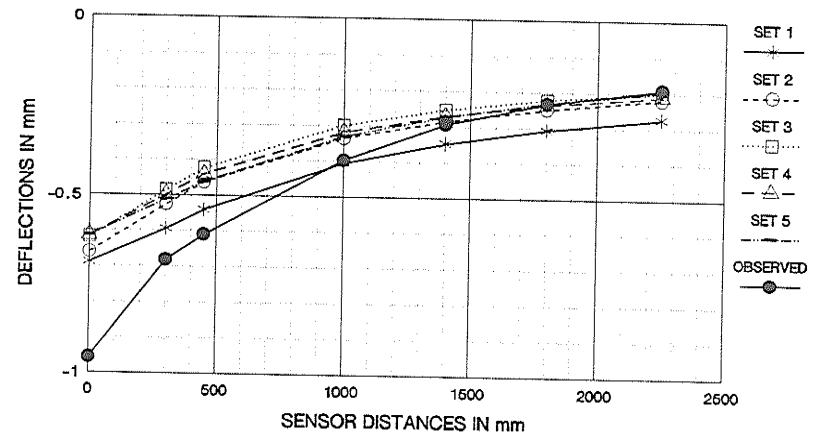
REGINA: RWY . 12-30: STA . 6 + 890 R: LOAD 758 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

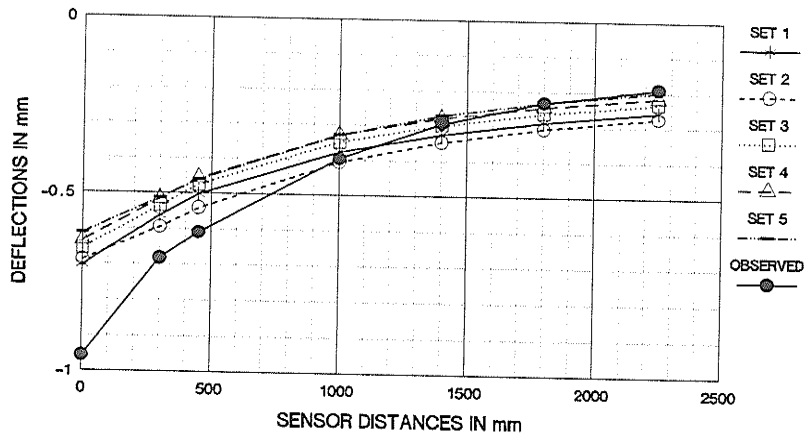
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

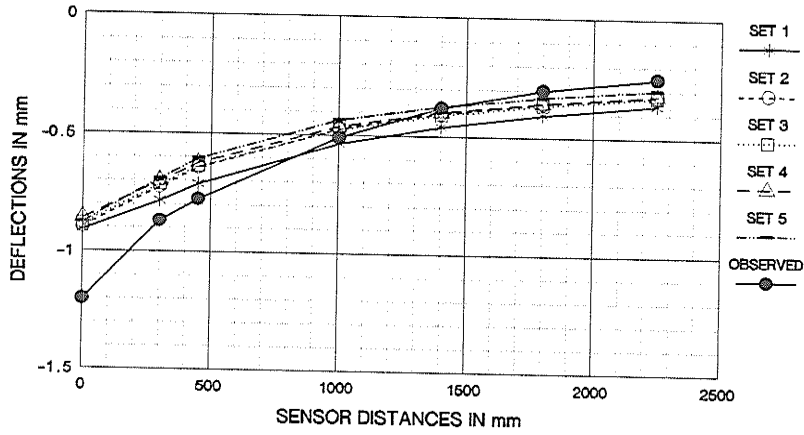


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

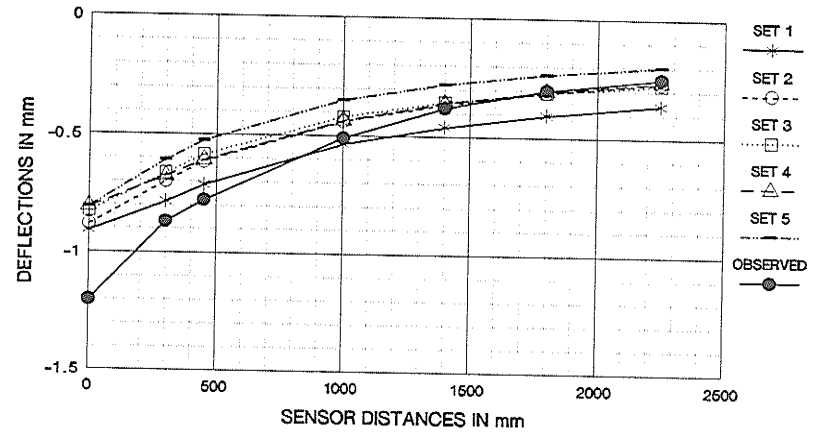
REGINA: RWY. 12-30: STA. 6 + 890 R: LOAD 1141 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

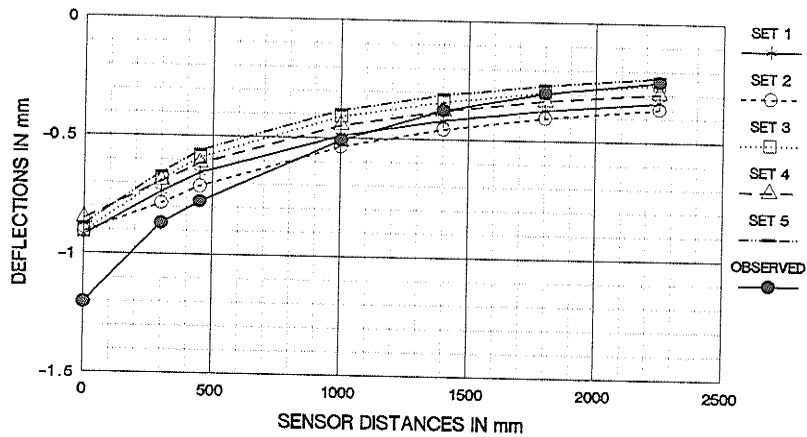
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

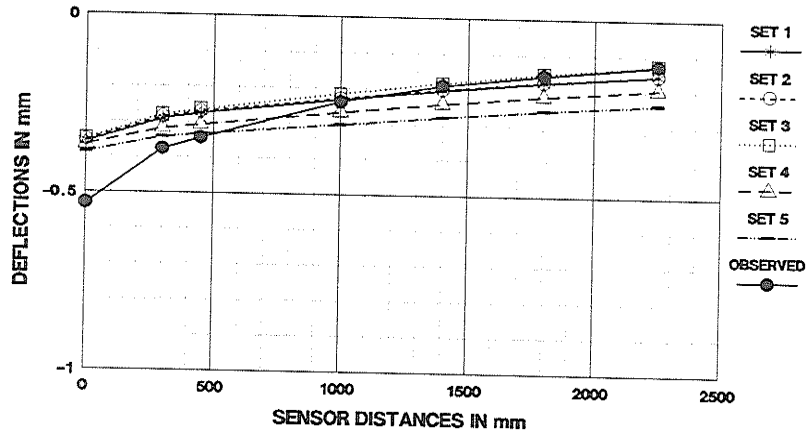


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

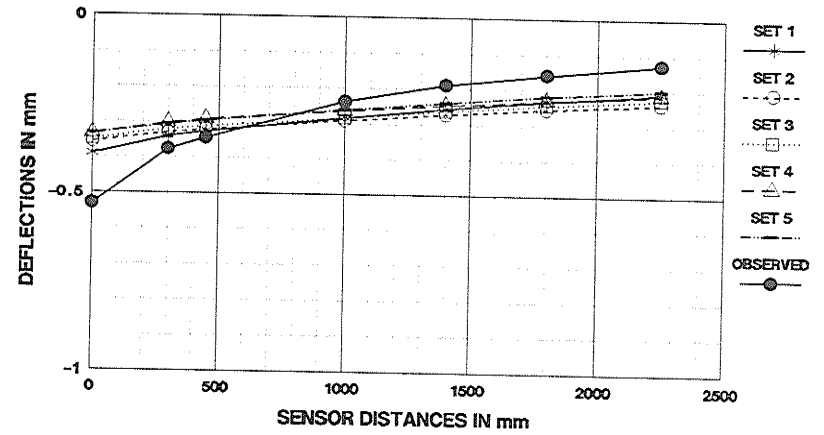
REGINA: RWY. 12-30: STA. 6 + 890 R: LOAD 1506 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

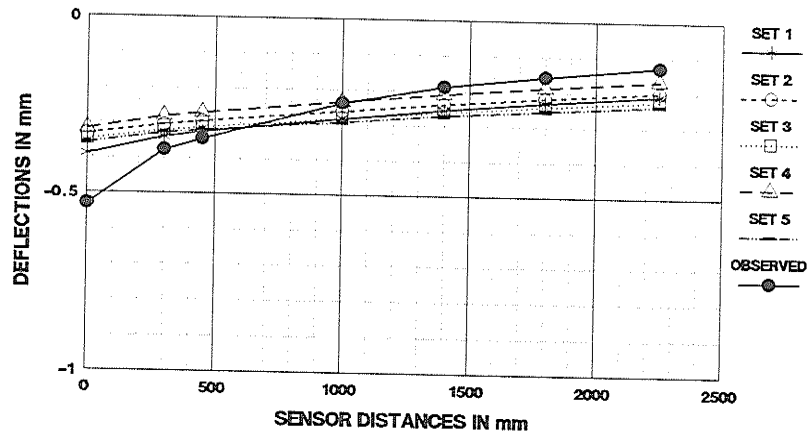
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

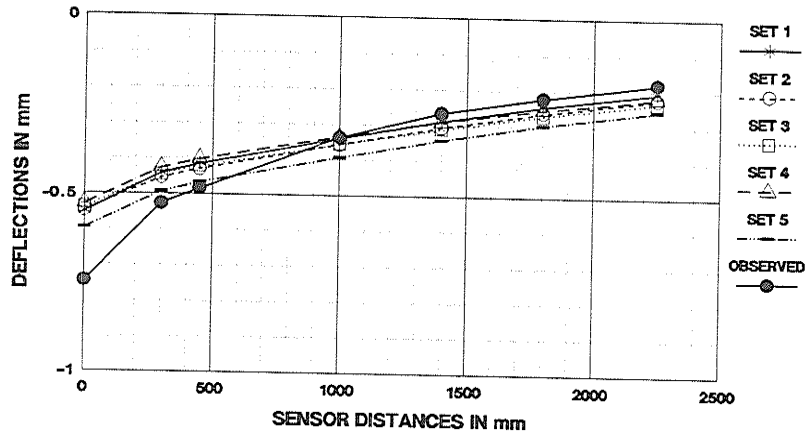


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

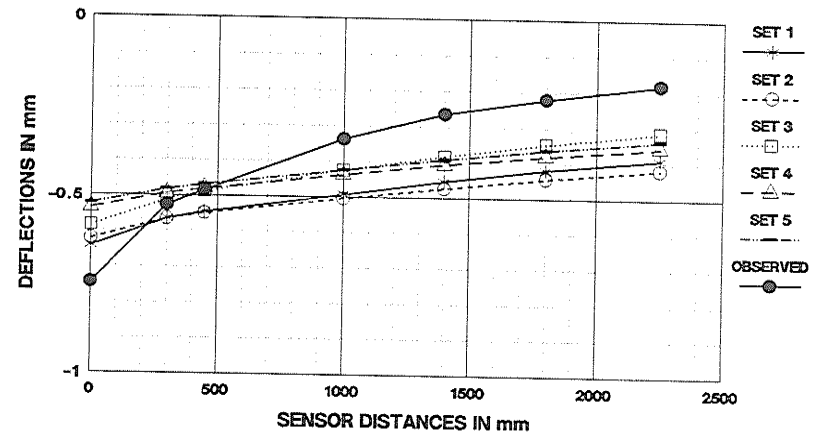
REGINA: RWY . 12-30: STA . 7 + 310 L: LOAD 788 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

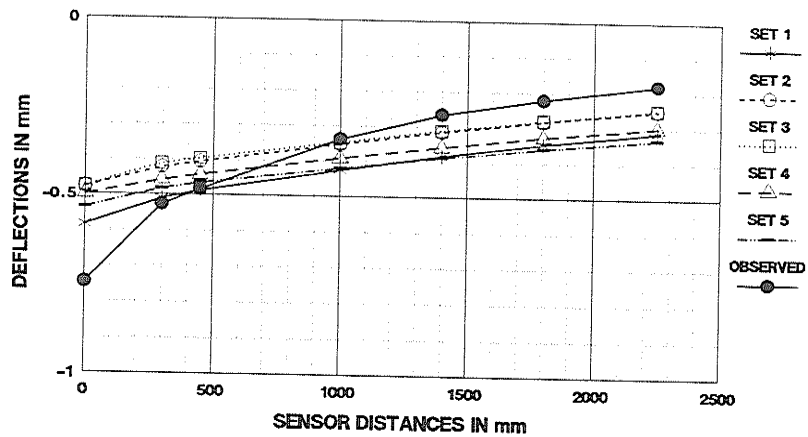
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

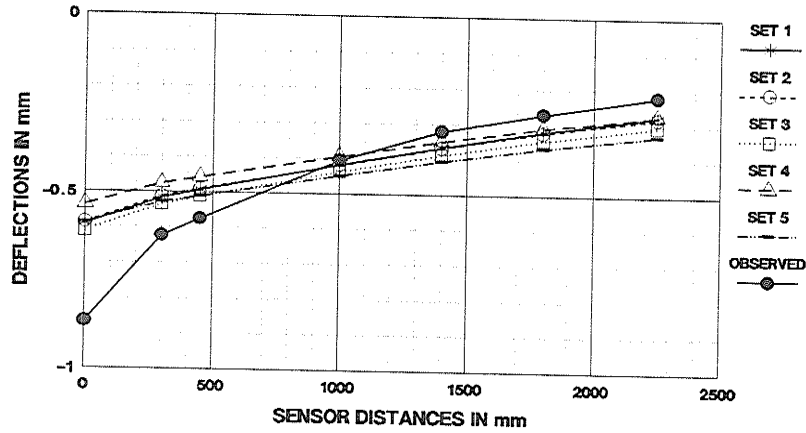


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

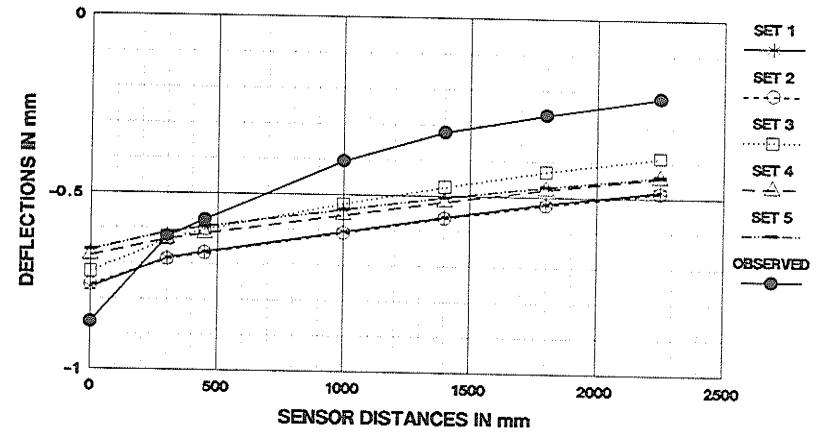
REGINA: RWY. 12-30: STA. 7 + 310 L: LOAD 1182 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

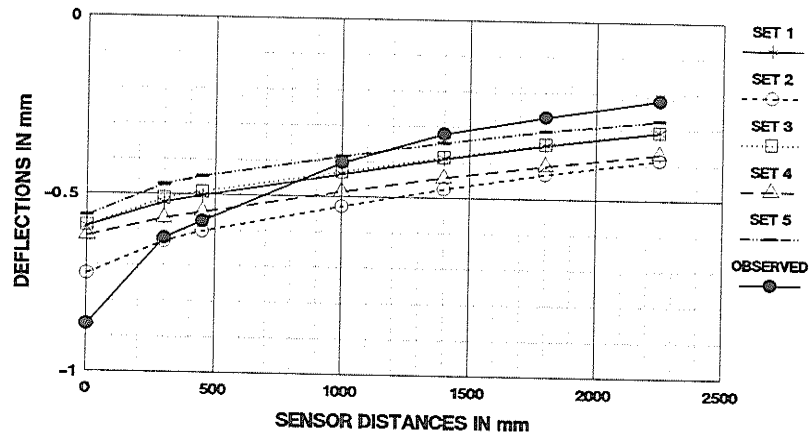
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

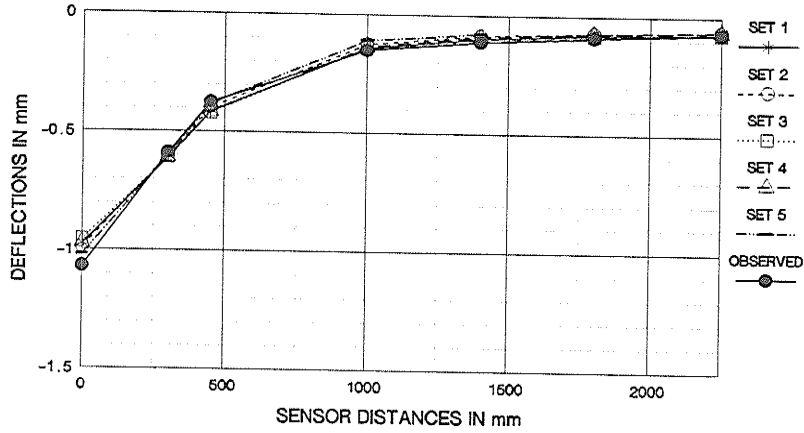


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

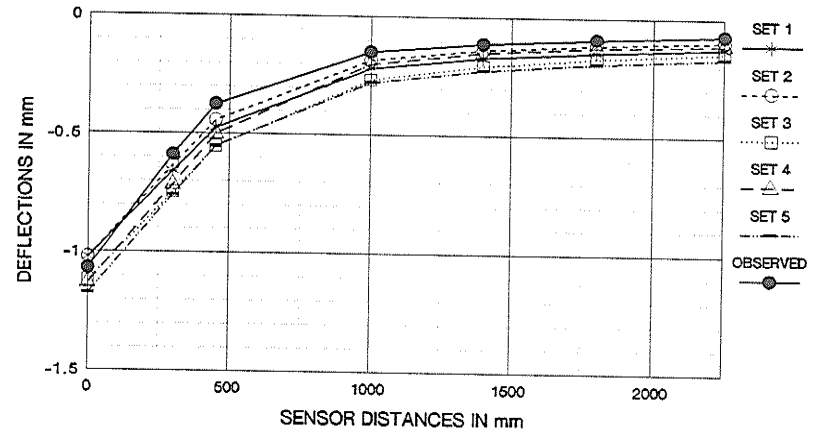
REGINA: RWY. 12-30: STA. 7 + 310 L: LOAD 1463 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

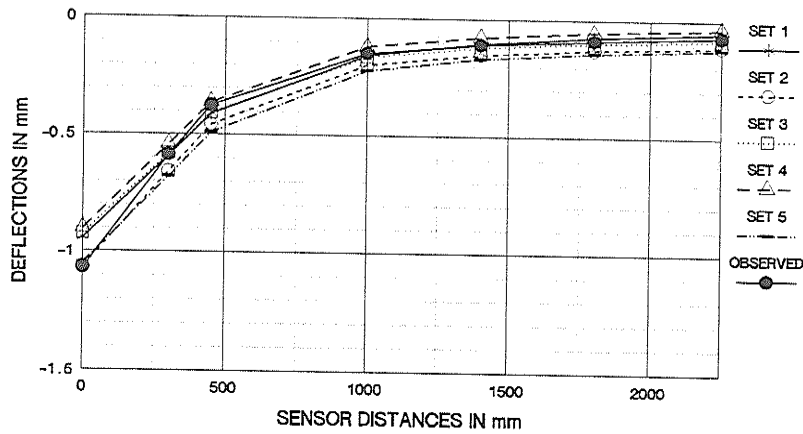
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

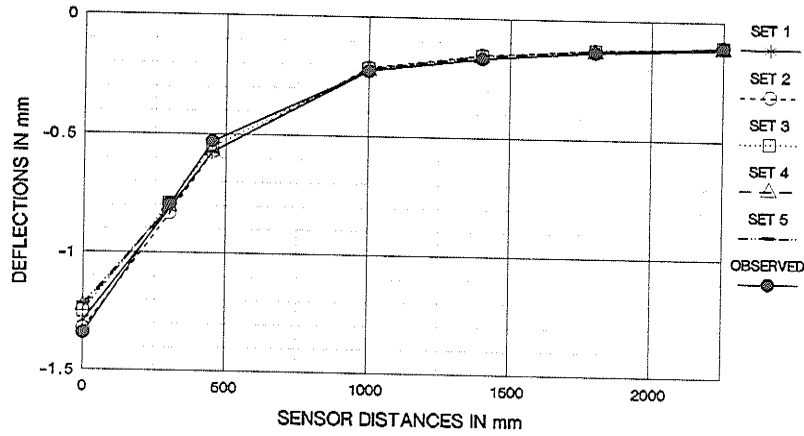


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

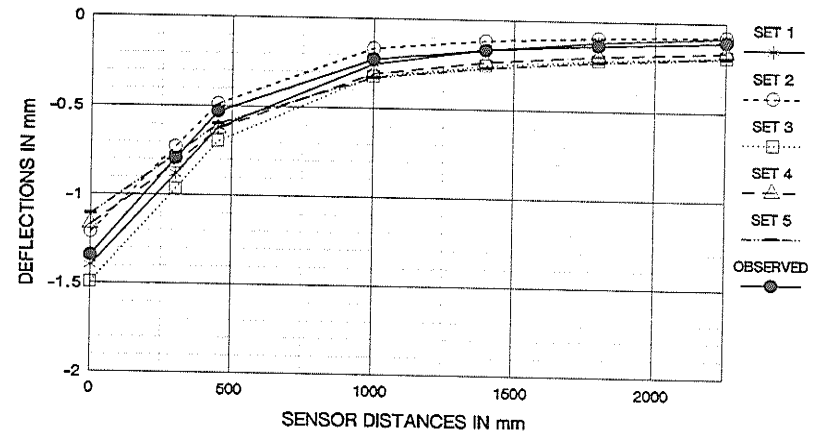
SASKATOON: RWY. 15-33:STA. 5+ 360 R:LOAD 737 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

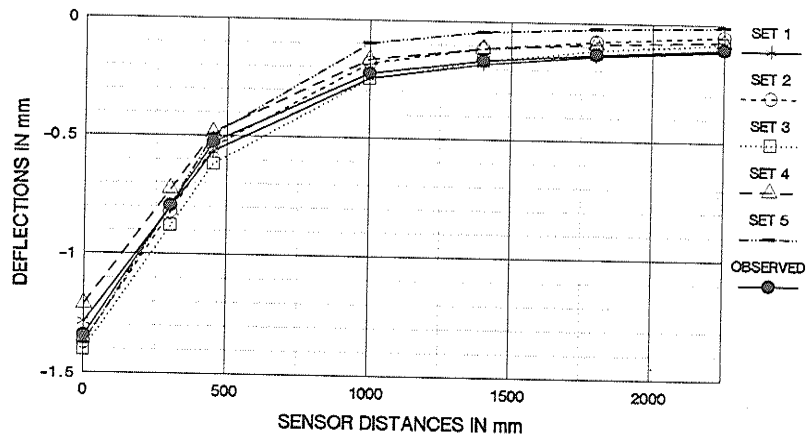
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

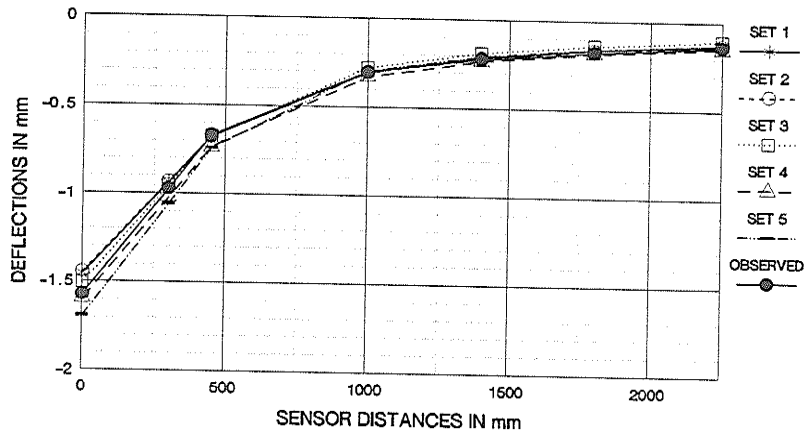


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

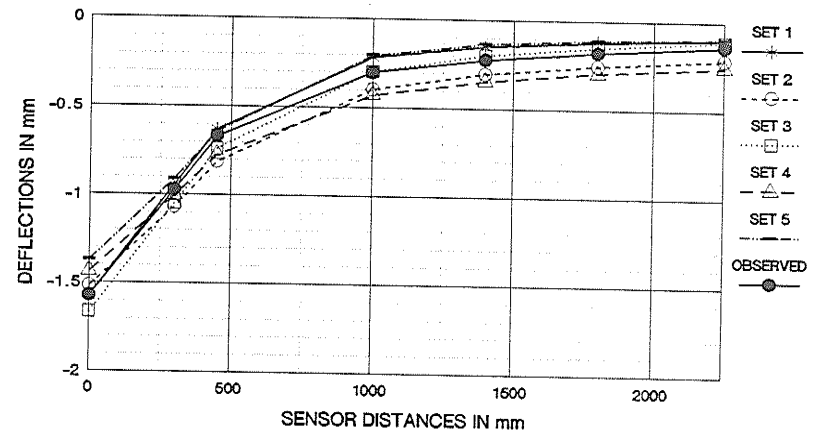
SASKATOON: RWY. 15-33:STA. 5+ 360 R:LOAD 1090 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

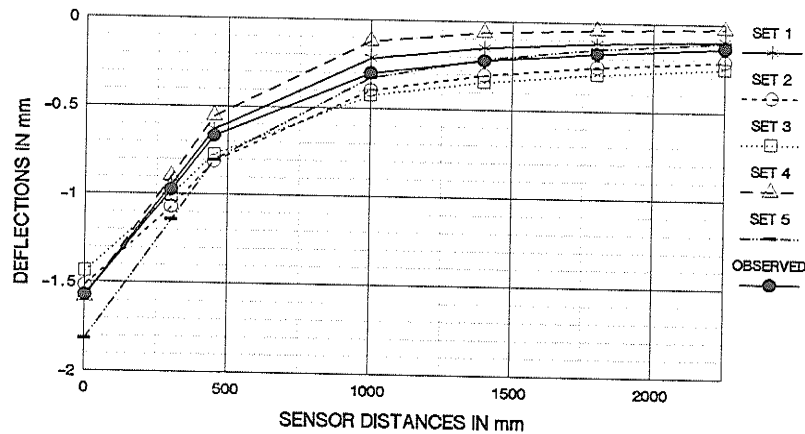
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

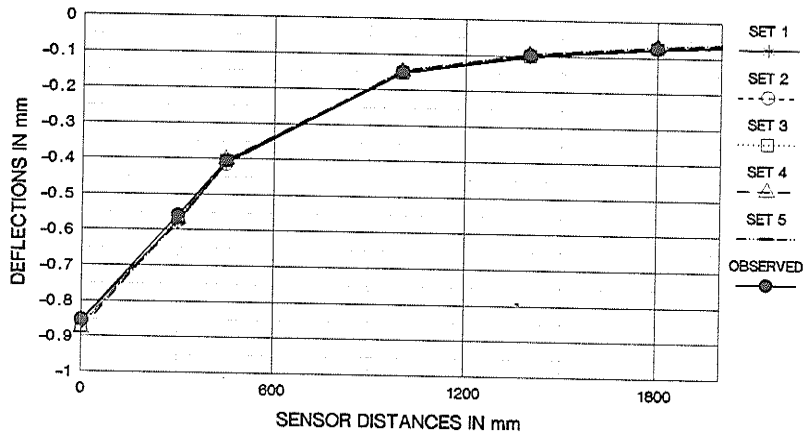


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

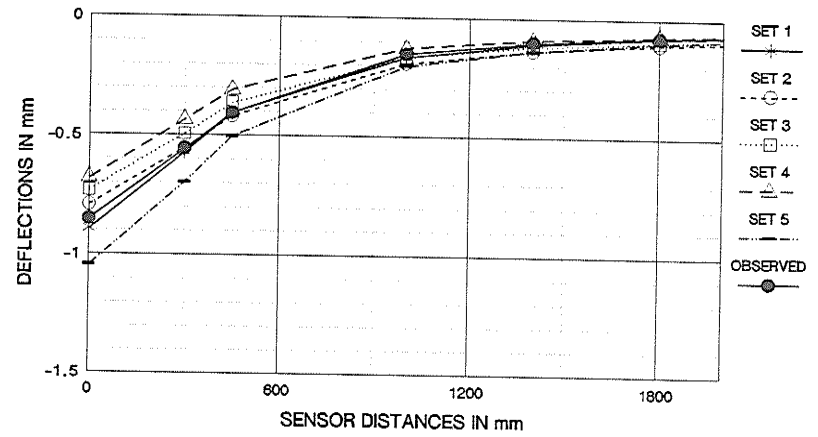
SASKATOON: RWY. 15-33:STA. 5+ 360 R:LOAD 1415 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

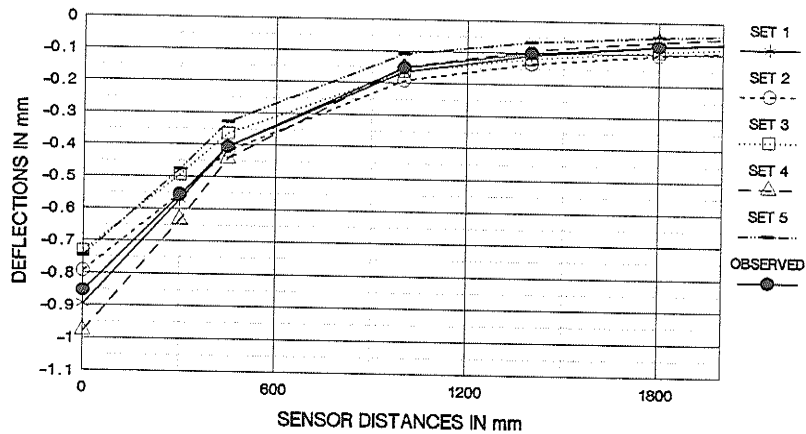
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

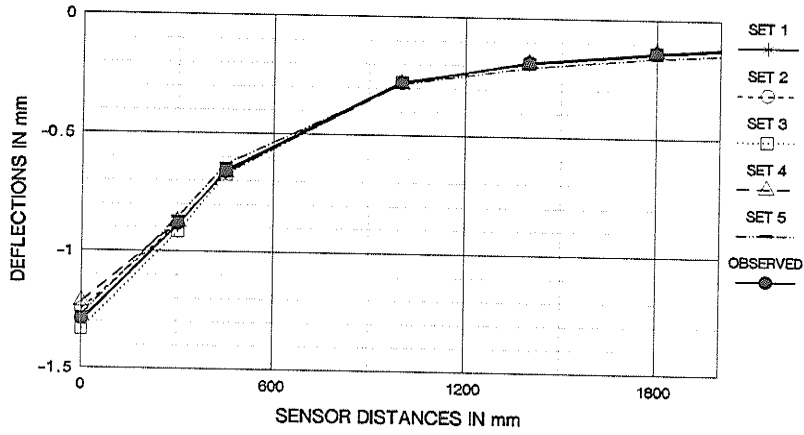


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

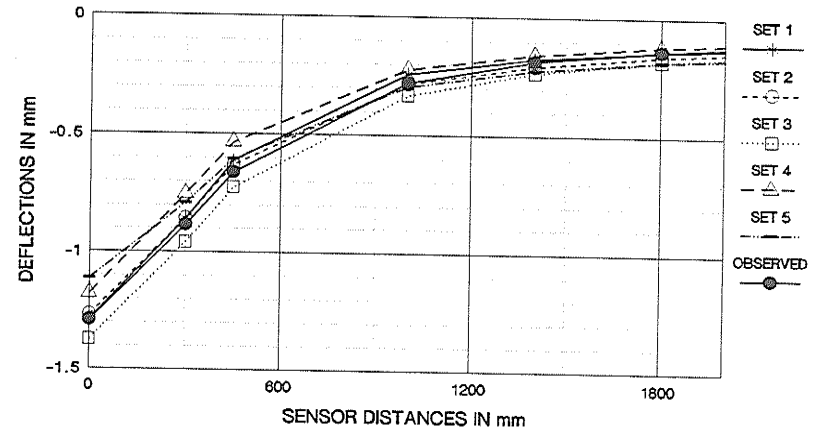
SASKATOON: RWY. 15-33: STA. 5 + 450: LOAD 710 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

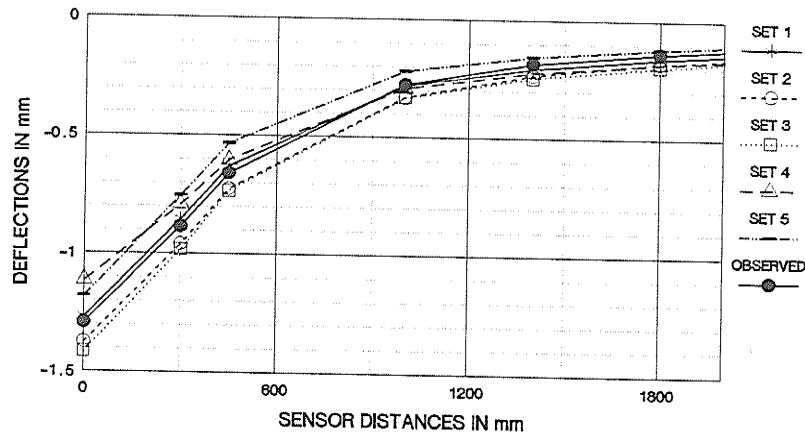
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

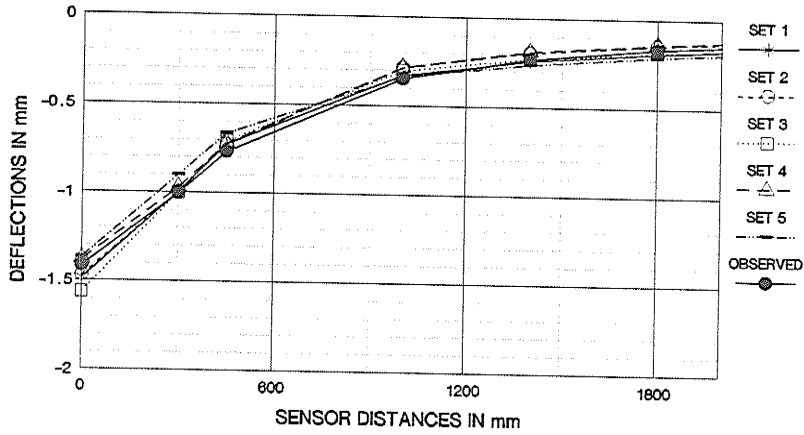


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

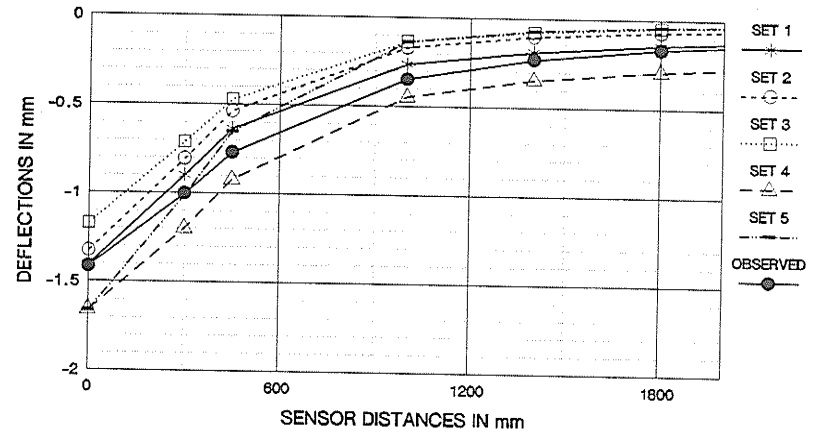
SASKATOON: RWY . 15-33: STA. 5 + 450: LOAD 1231 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

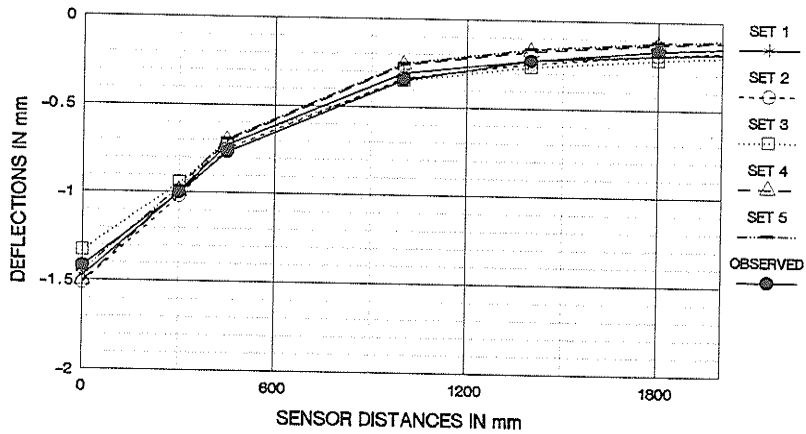
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

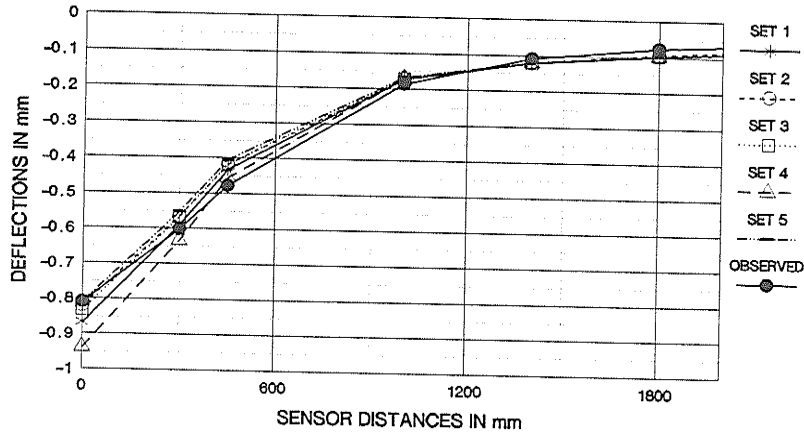


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

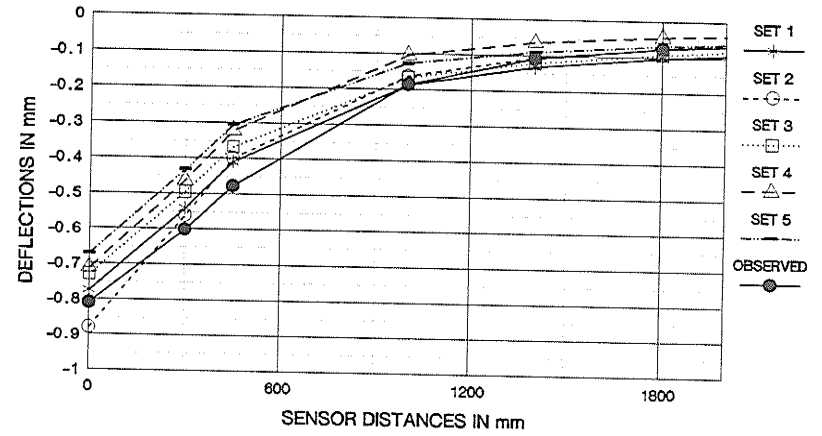
SASKATOON: RWY. 15-33: STA. 5 + 450: LOAD 1467 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

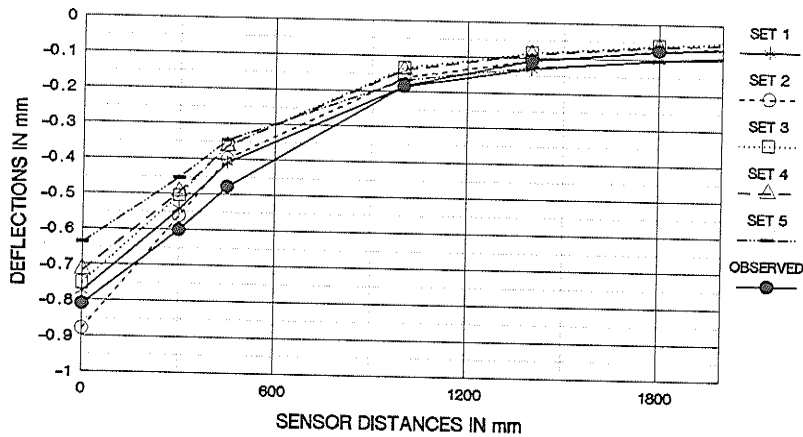
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

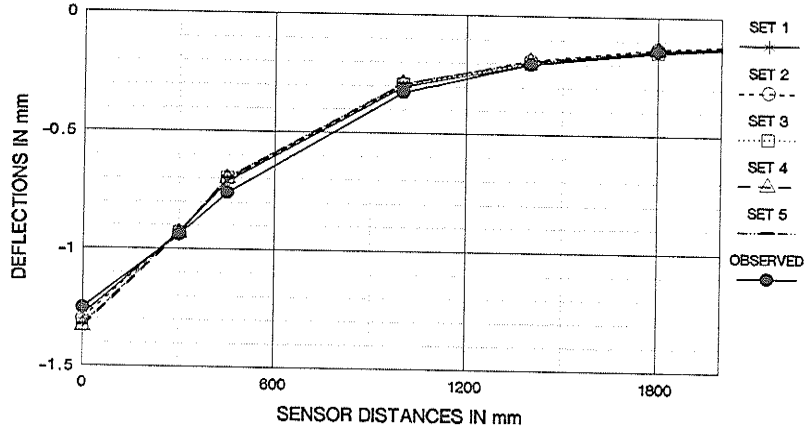


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

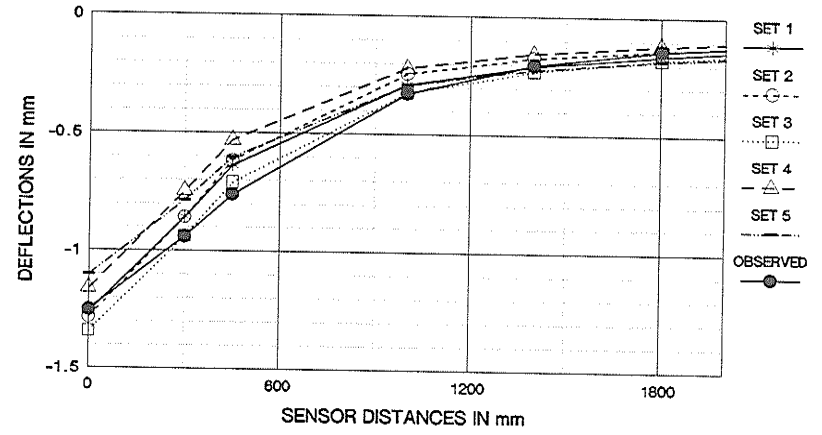
SASKATOON: RWY. 15-33: STA. 5 + 540: LOAD 700 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

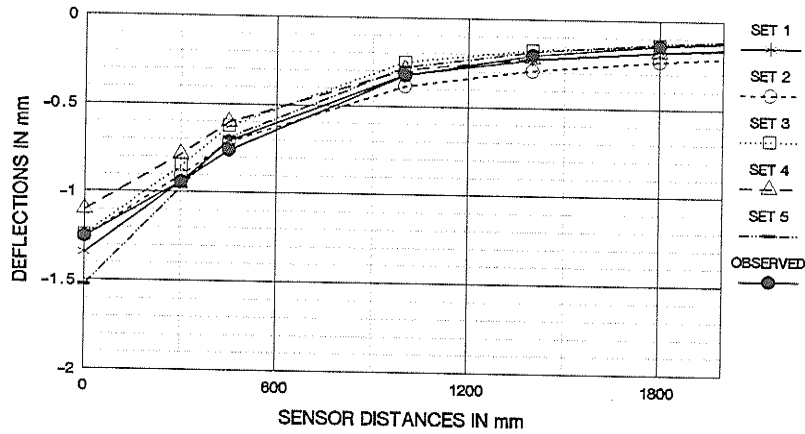
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

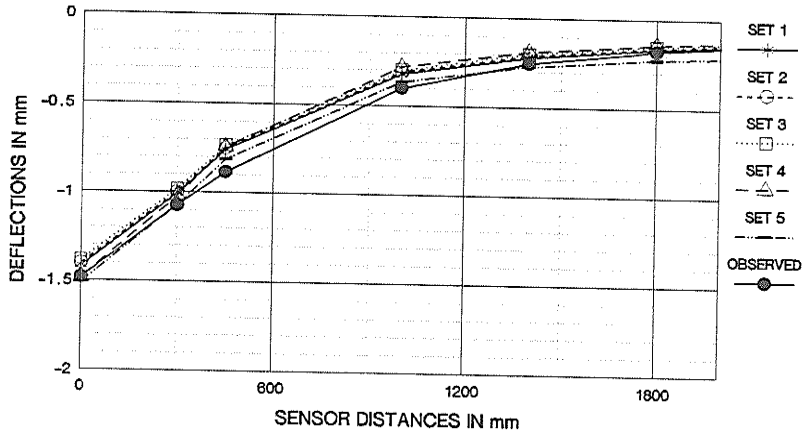


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

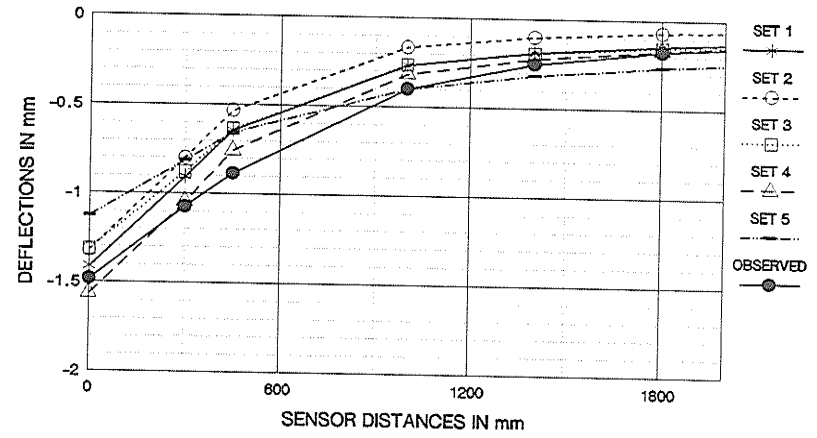
SASKATOON: RWY. 15-33: STA. 5 + 540: LOAD 1219 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

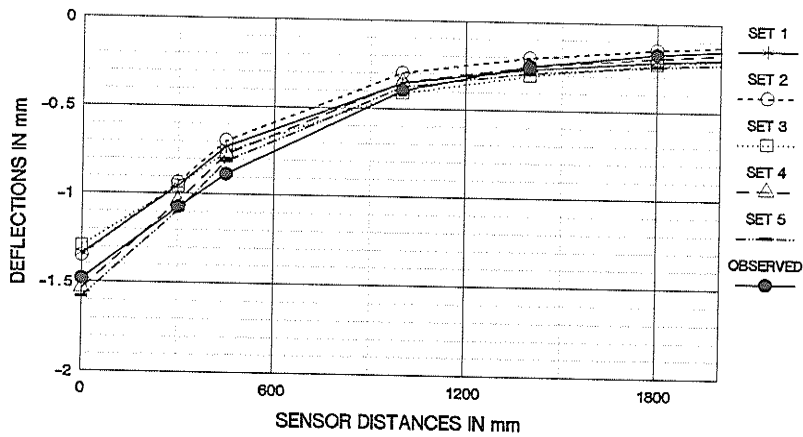
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

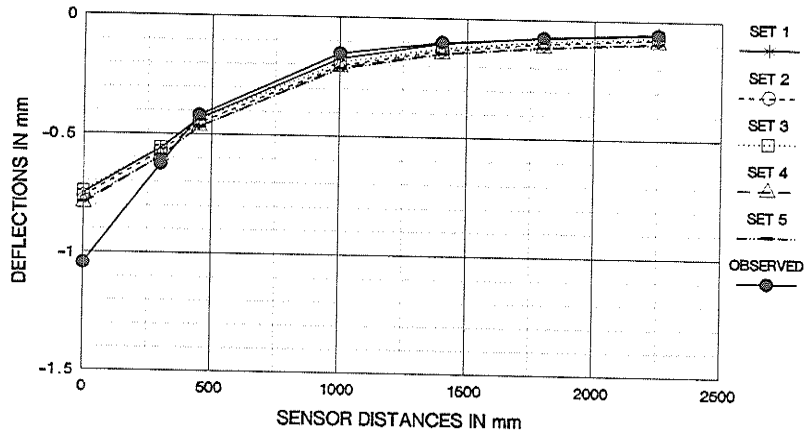


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

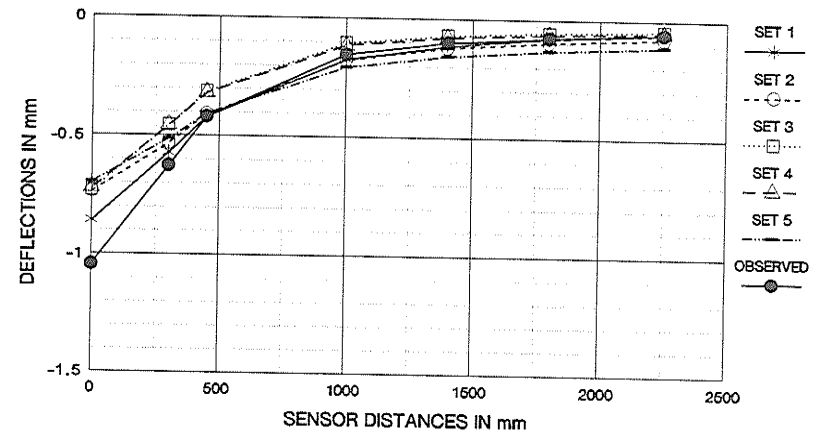


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY . 15-33: STA. 5 + 540: LOAD 1458 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

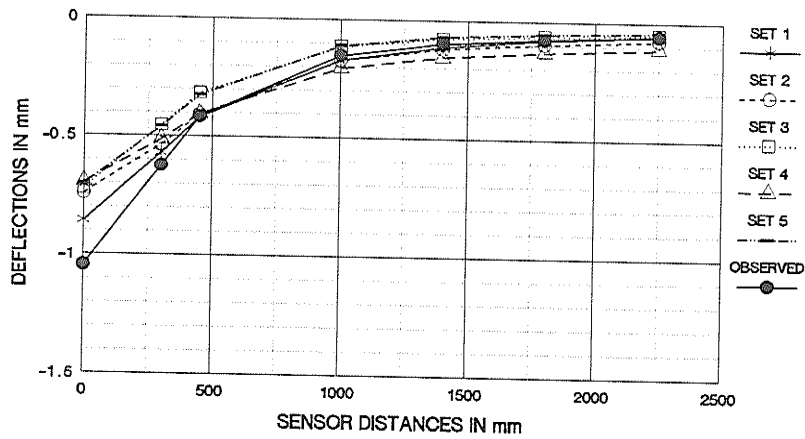
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

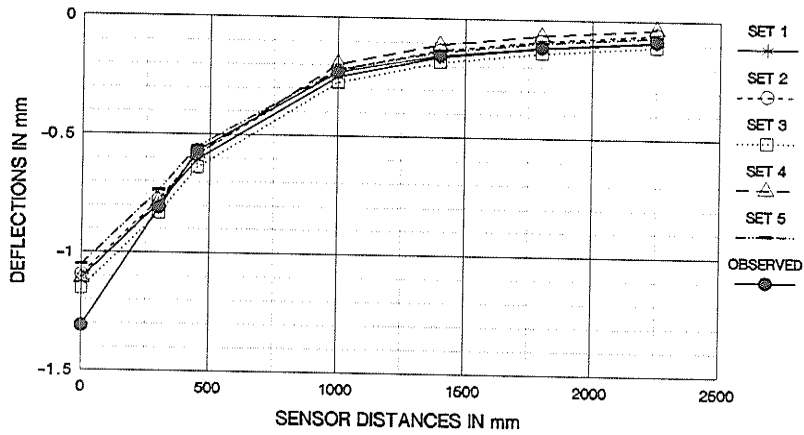


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

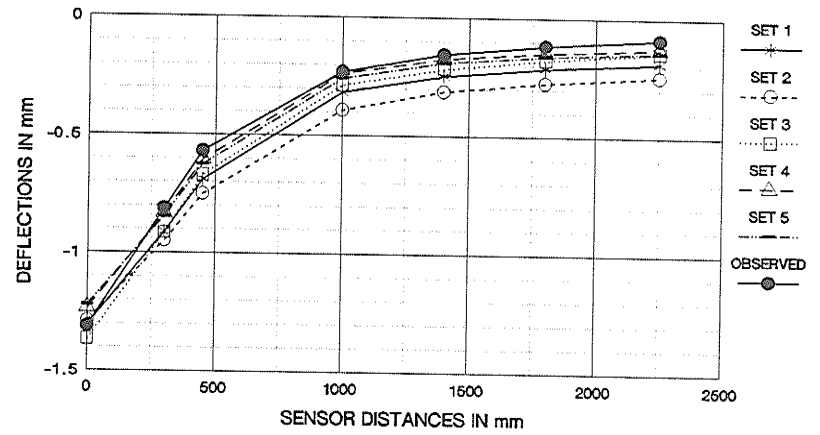
SASKATOON: RWY . 15-33: STA . 5 + 630 R: LOAD 732 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

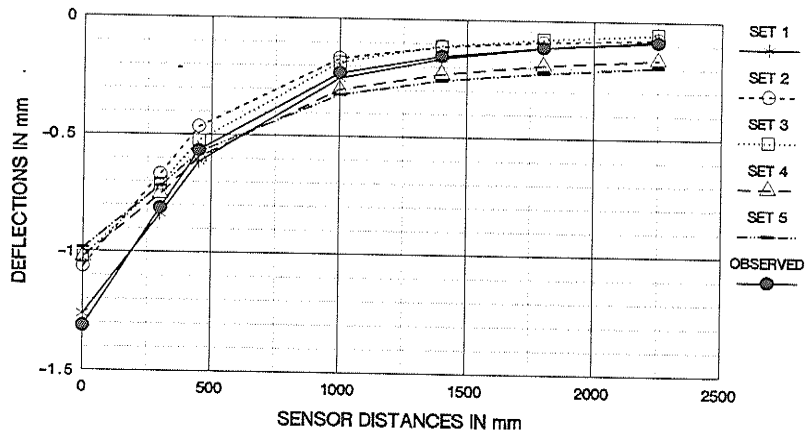
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

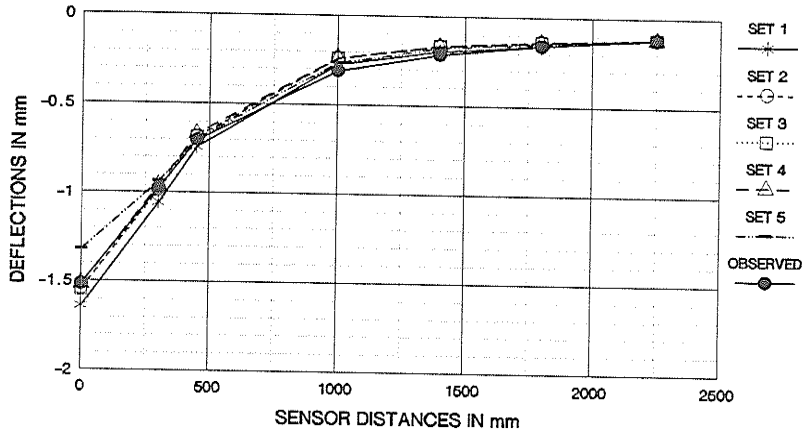


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

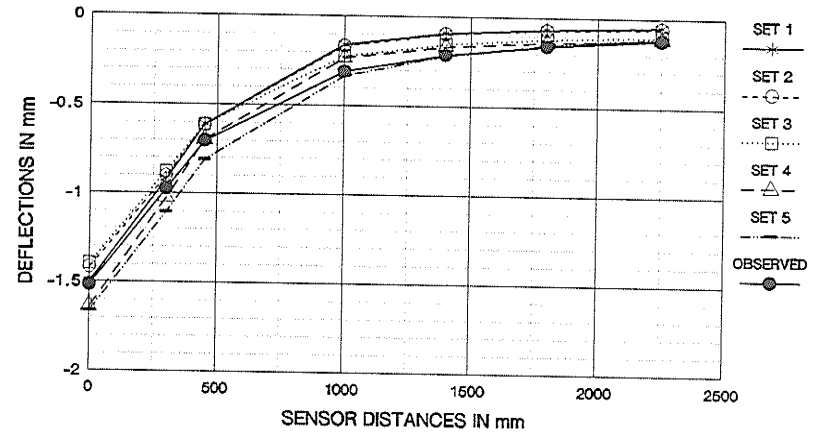
SASKATOON: RWY . 15-33: STA . 5 + 630 R: LOAD 1075 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

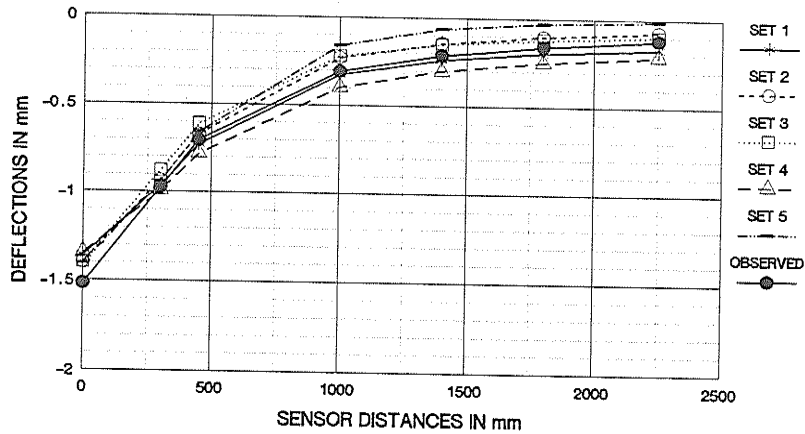
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

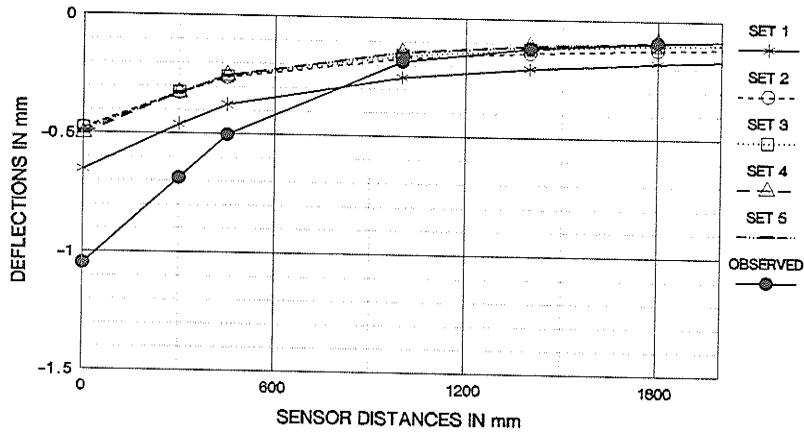


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

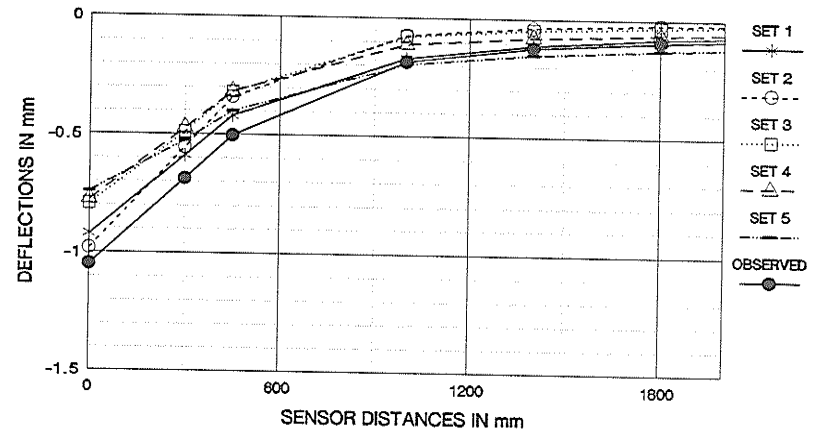


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY . 15-33:STA. 5 + 630 R:LOAD 1415 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

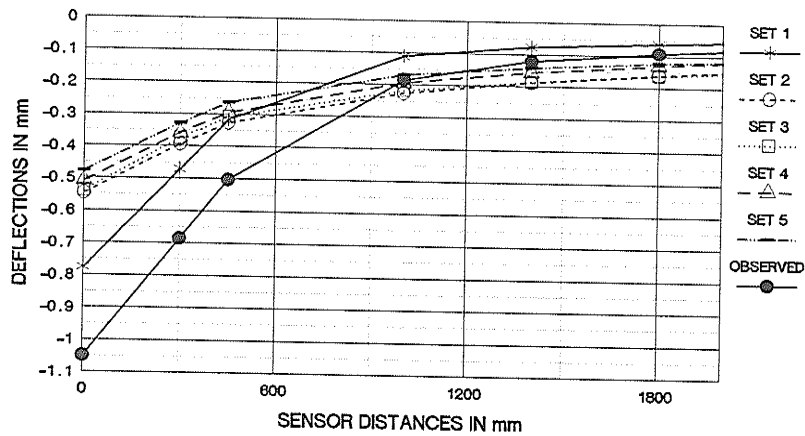
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

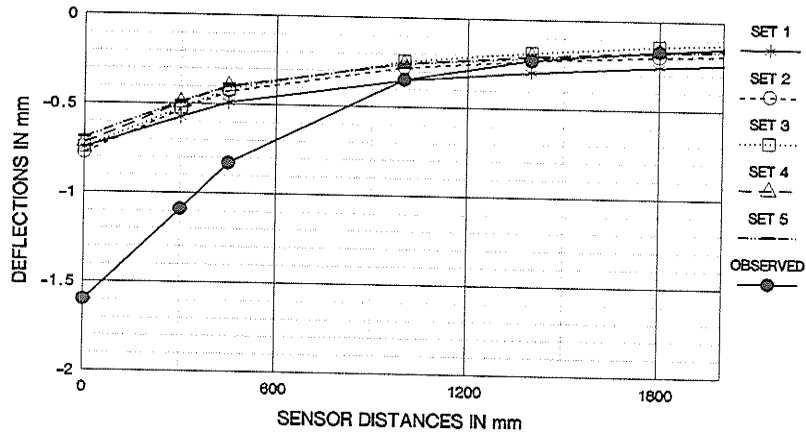


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

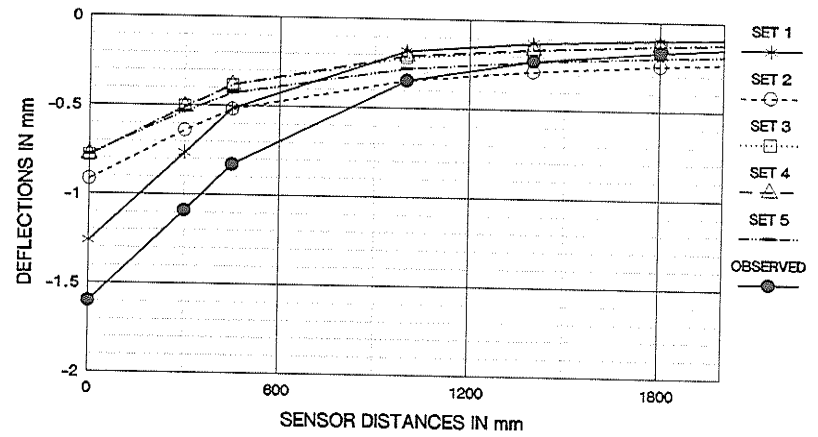
SASKATOON: RWY. 15-33: STA. 5 + 660: LOAD 689 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

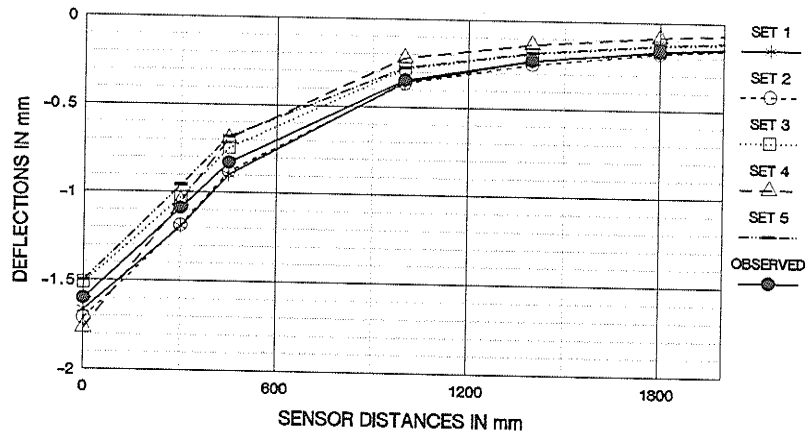
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

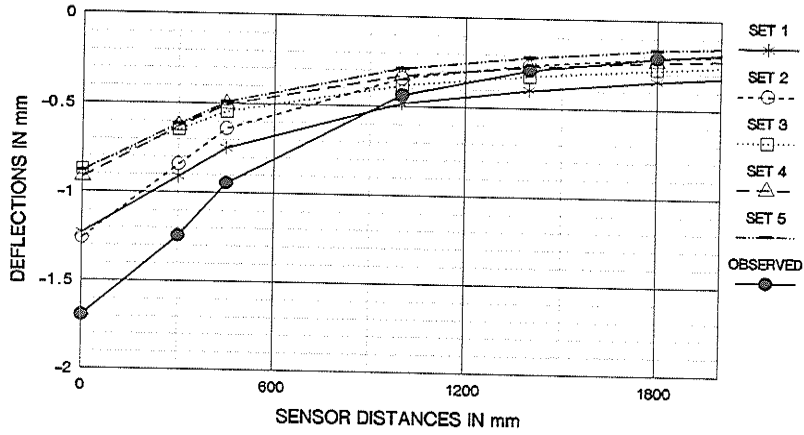


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

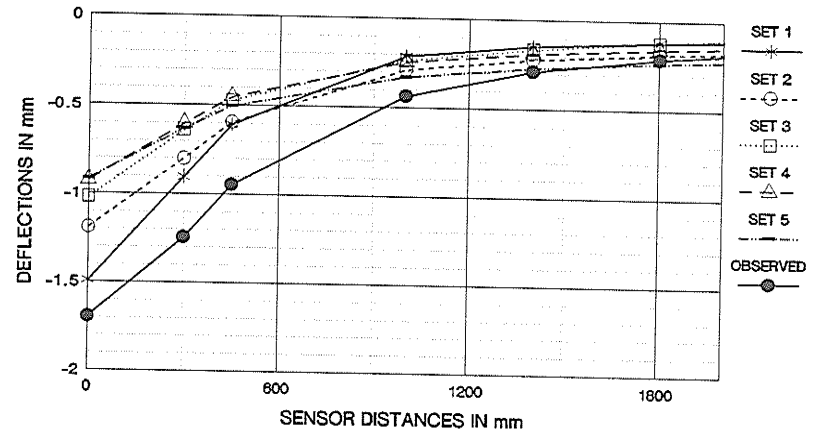
SASKATOON: RWY. 15-33: STA. 5 + 660: LOAD 1201 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

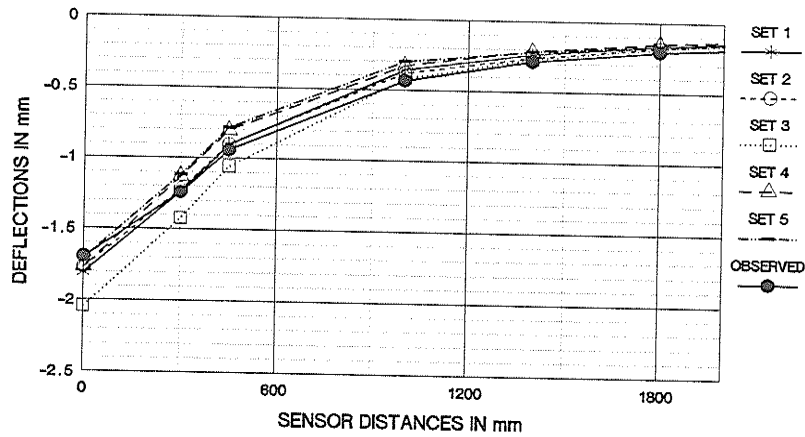
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

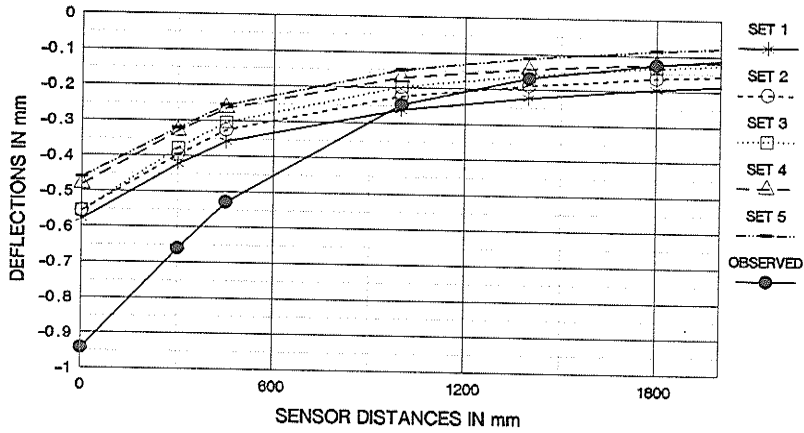


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

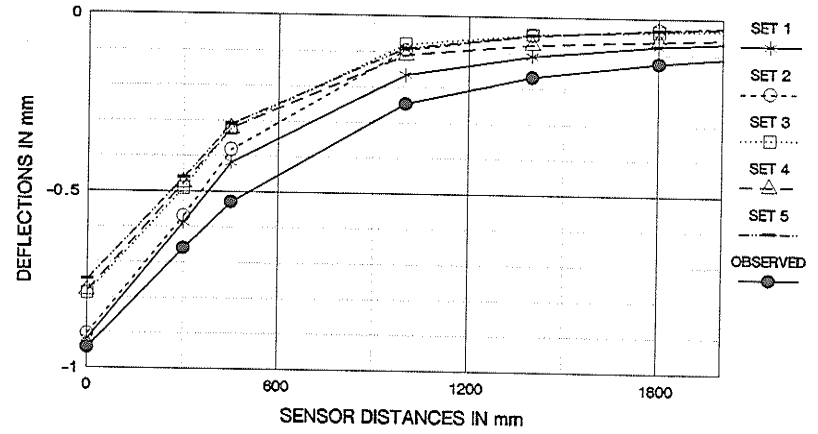
SASKATOON: RWY. 15-33: STA. 5 + 660: LOAD 1440 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

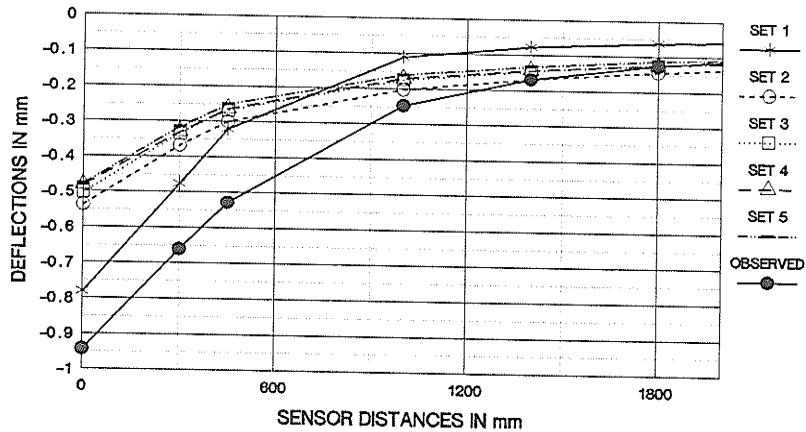
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

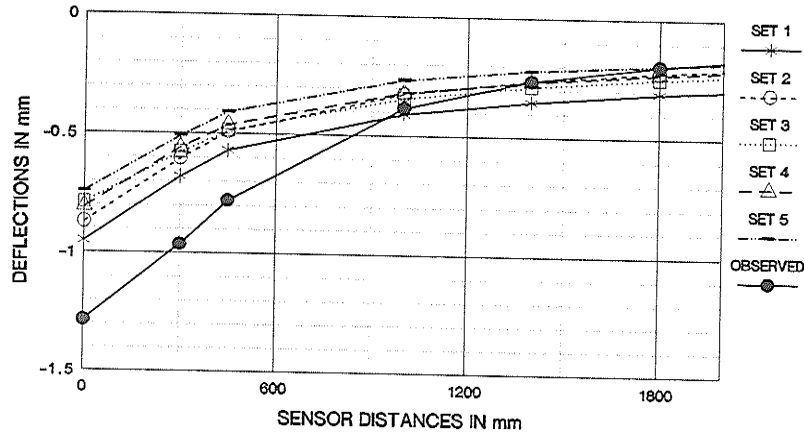


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

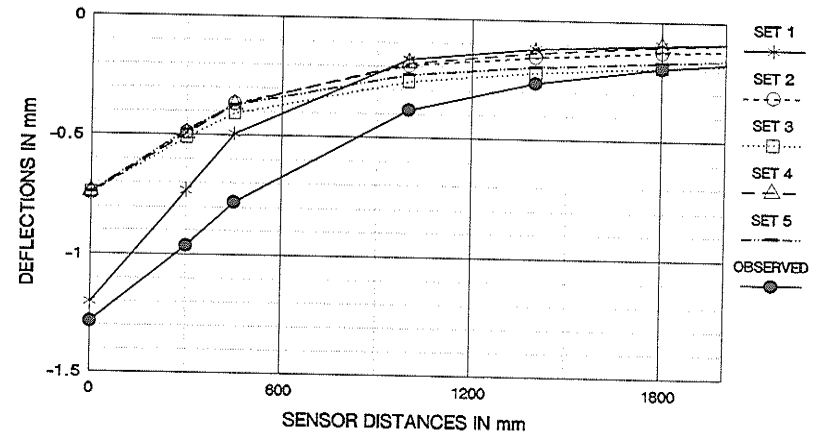
SASKATOON: RWY. 15-33: STA. 5 + 690: LOAD 753 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

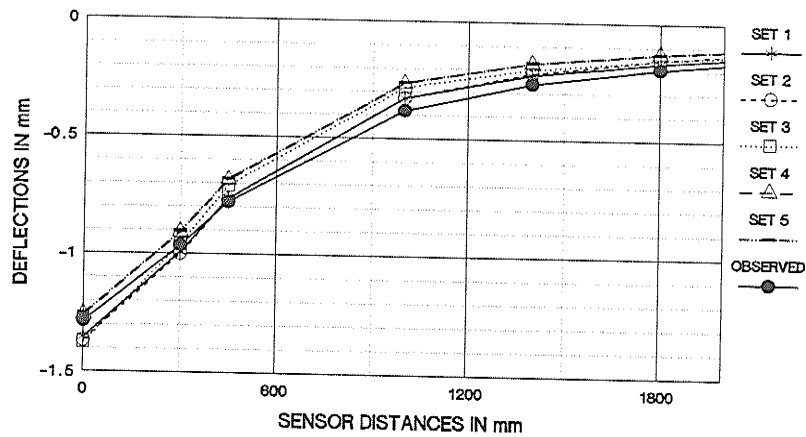
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

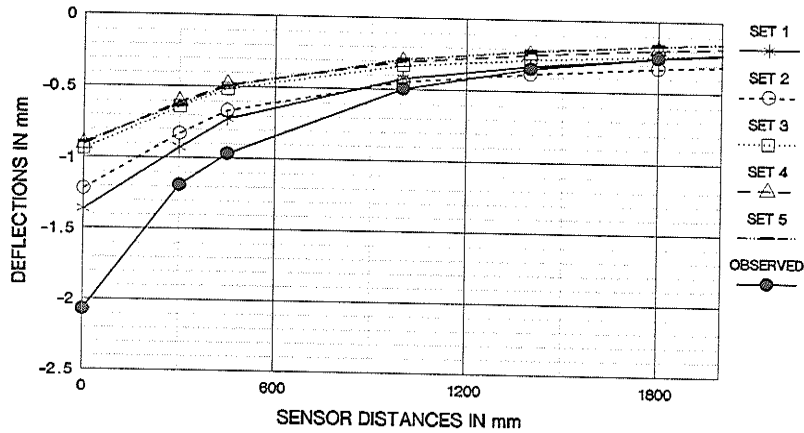


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

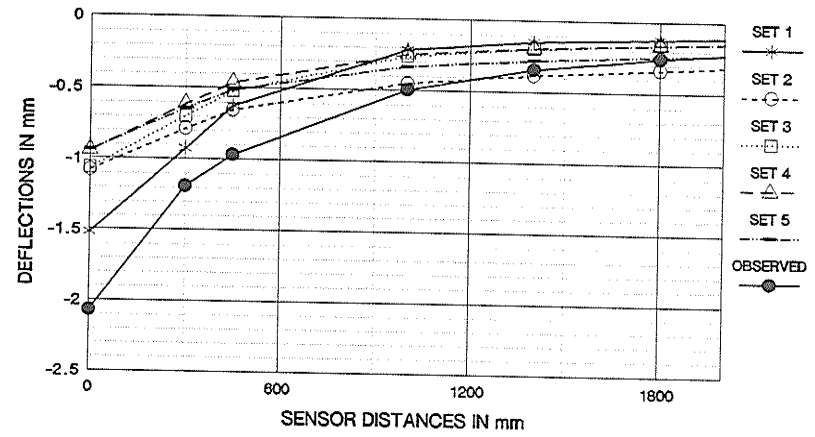
SASKATOON: RWY. 15-33: STA. 5 + 690: LOAD 1160 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

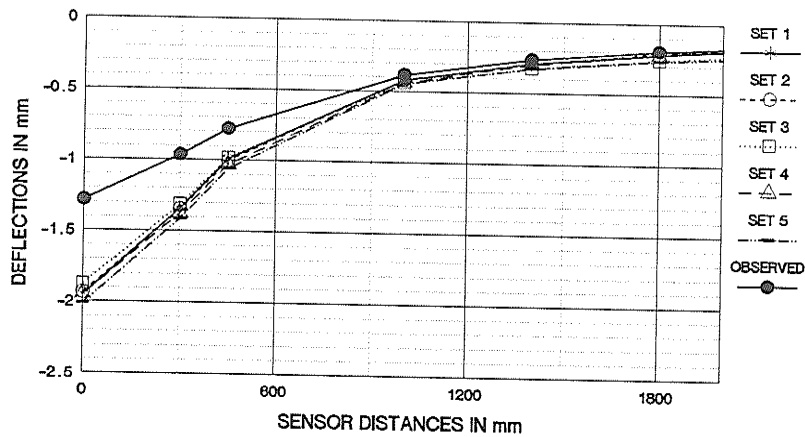
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

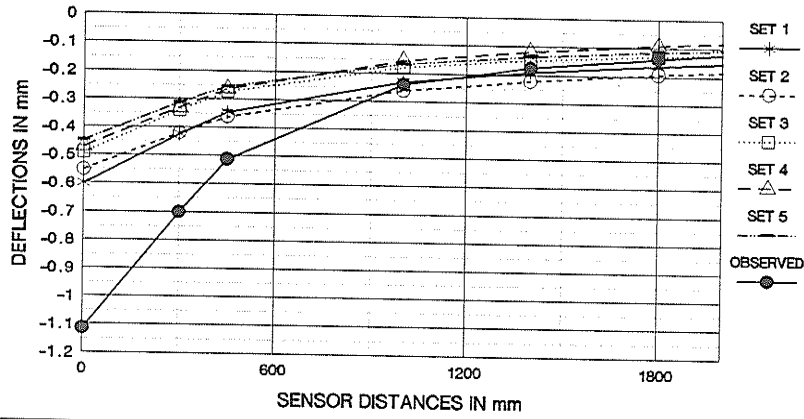


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

SASKATOON: RWY. 15-33: STA. 5 + 690: LOAD 1465 kPa

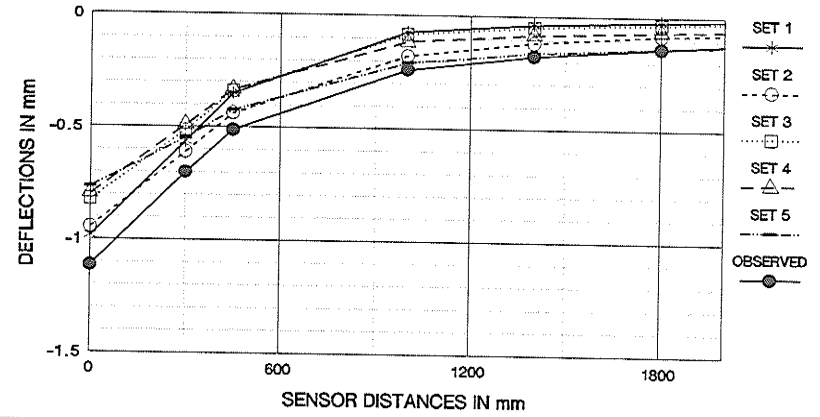
CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



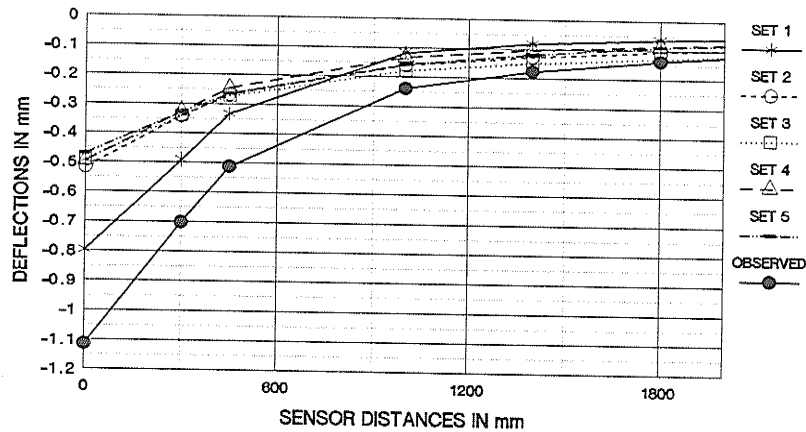
INFEASIBLE SOLUTIONS
PAVEMENT SEVERELY CRACKED

OPTIMIZING CRITERION: MAXIMUM DEFLECTION



INFEASIBLE SOLUTIONS
PAVEMENT SEVERELY CRACKED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

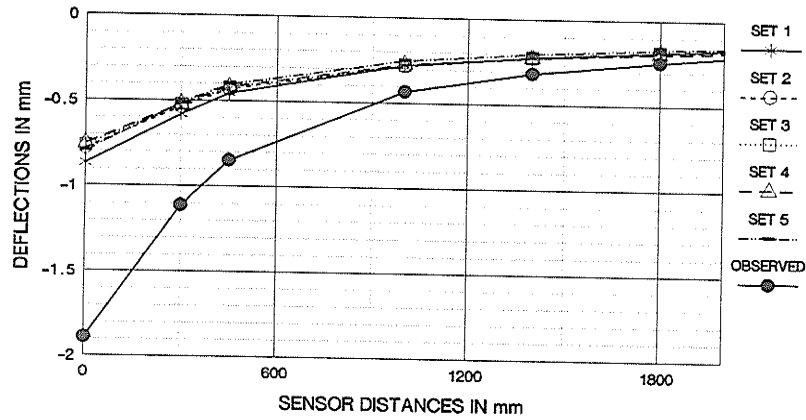


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

SASKATOON: RWY . 15-33: STA . 5 + 750: LOAD 699 kPa

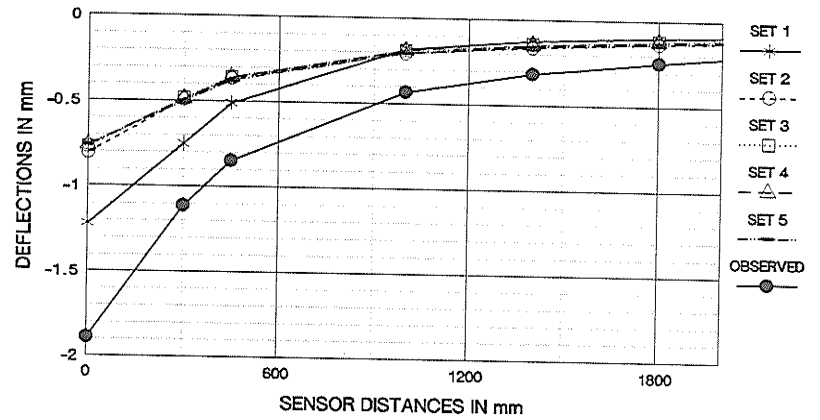
CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



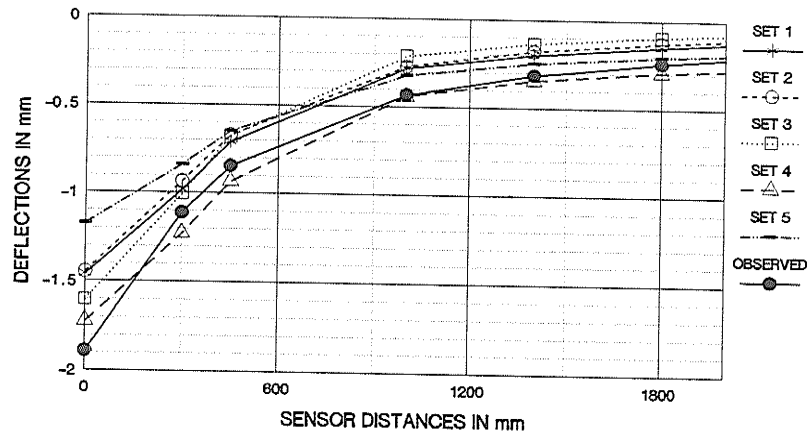
INFEASIBLE SOLUTIONS
PAVEMENT SEVERELY CRACKED

OPTIMIZING CRITERION: MAXIMUM DEFLECTION



INFEASIBLE SOLUTIONS
PAVEMENT SEVERELY CRACKED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

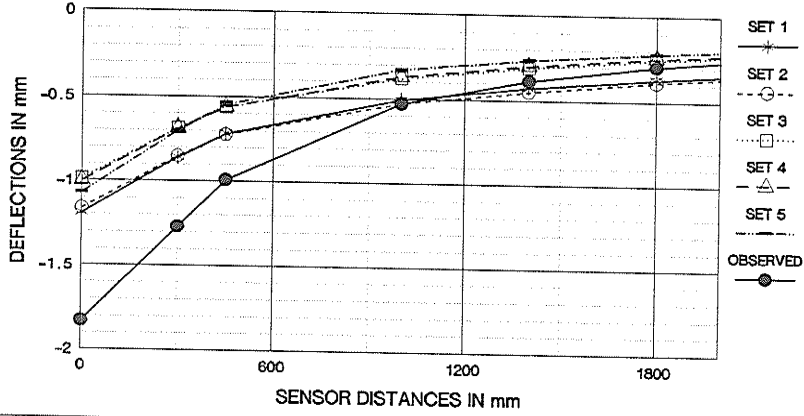


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

SASKATOON: RWY. 15-33: STA. 5 + 750: LOAD 1204 kPa

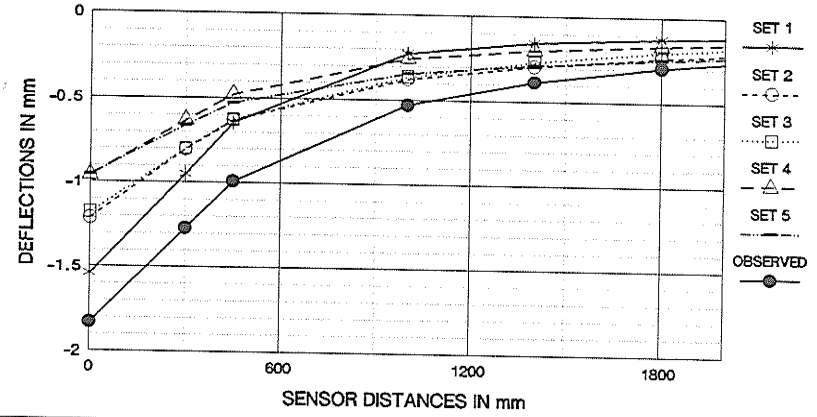
CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



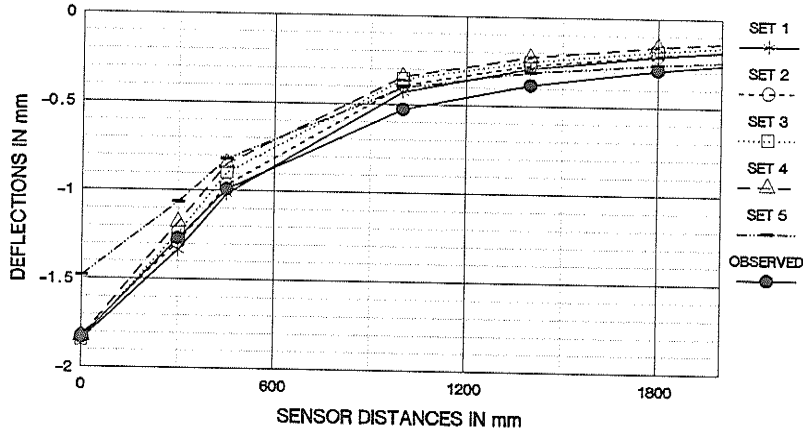
INFEASIBLE SOLUTIONS
PAVEMENT SEVERELY CRACKED

OPTIMIZING CRITERION: MAXIMUM DEFLECTION



INFEASIBLE SOLUTIONS
PAVEMENT SEVERELY CRACKED

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

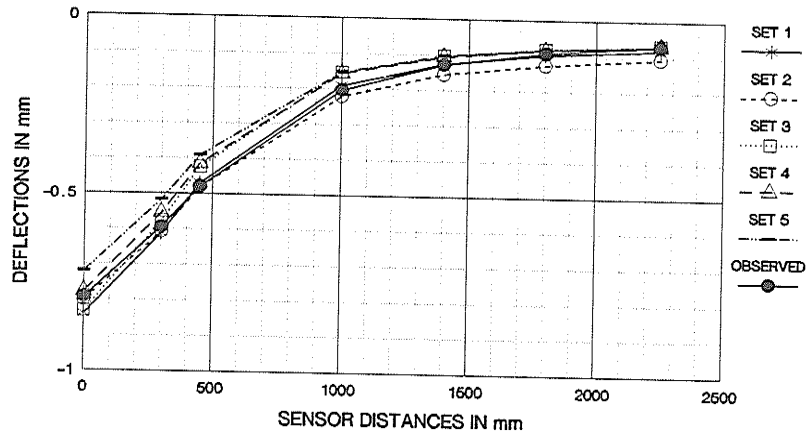


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

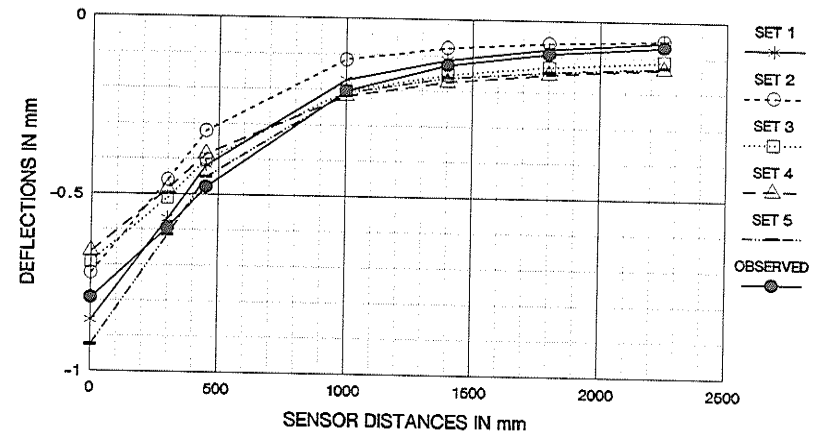
SASKATOON: RWY. 15-33: STA. 5 + 750: LOAD 1440 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

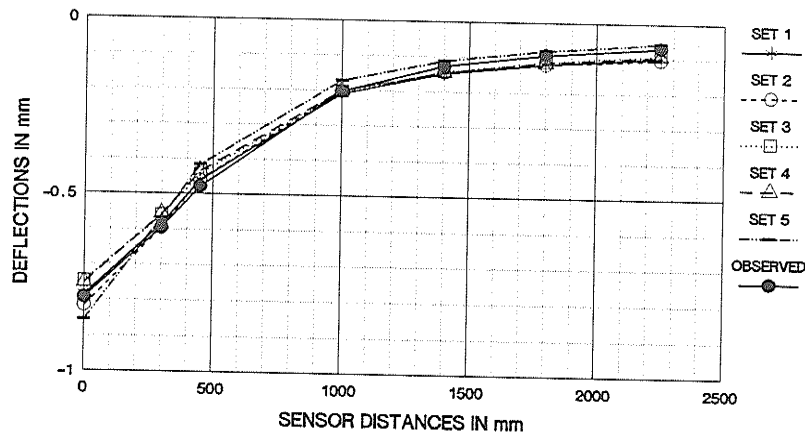
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

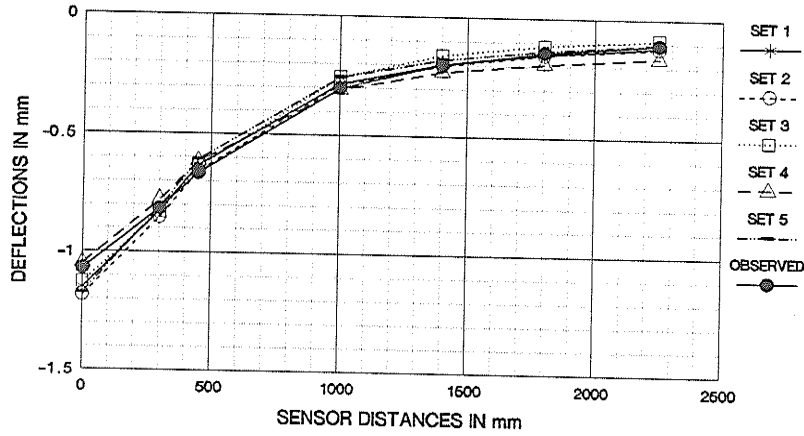


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

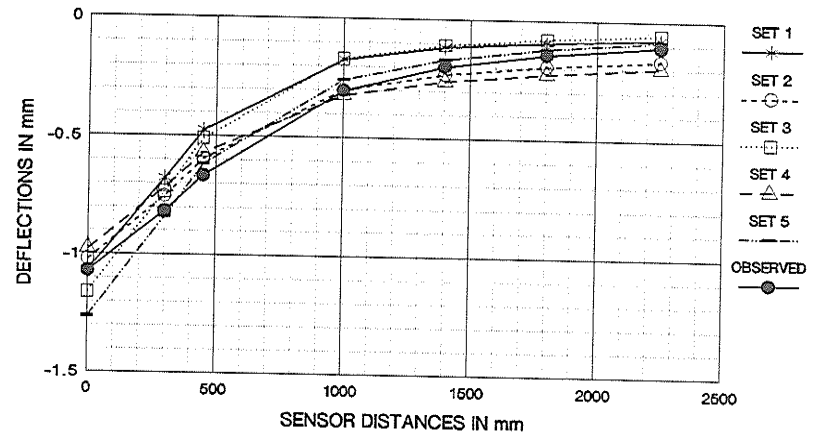
SASKATOON: RWY. 15-33:STA. 5 + 840 R:LOAD 733 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

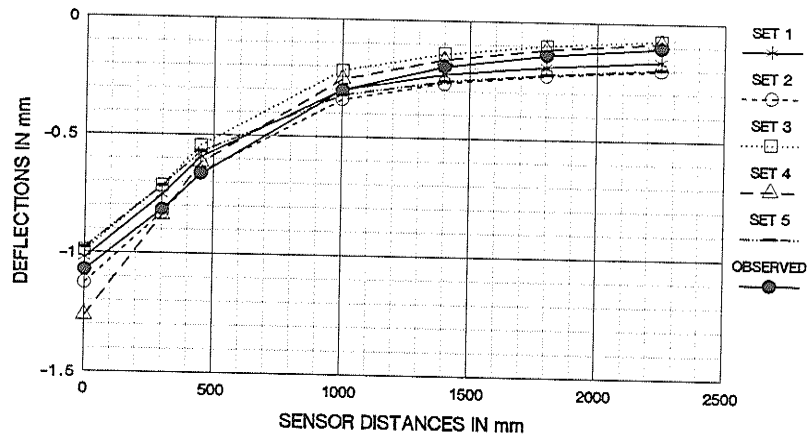
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

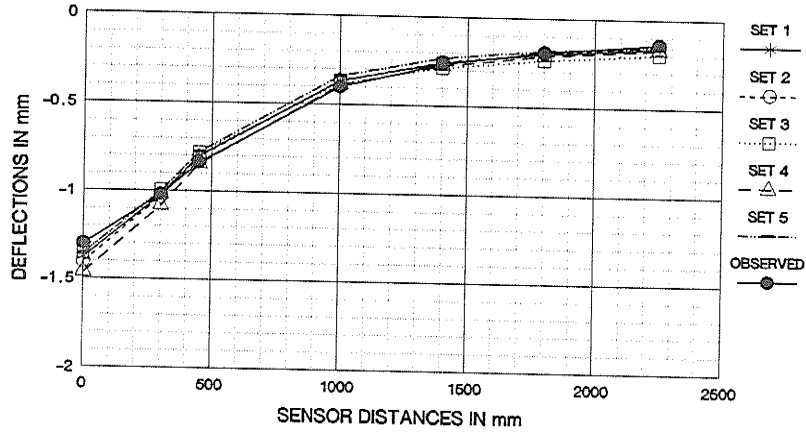


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

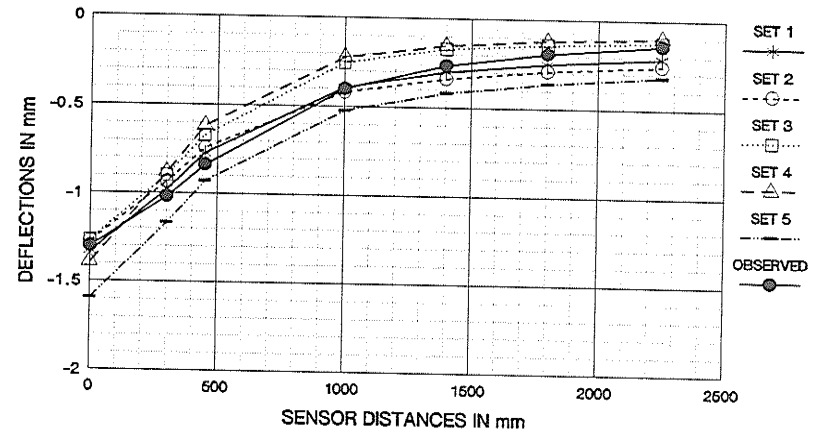
SASKATOON: RWY. 15-33: STA. 5 + 840 R: LOAD 1083 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

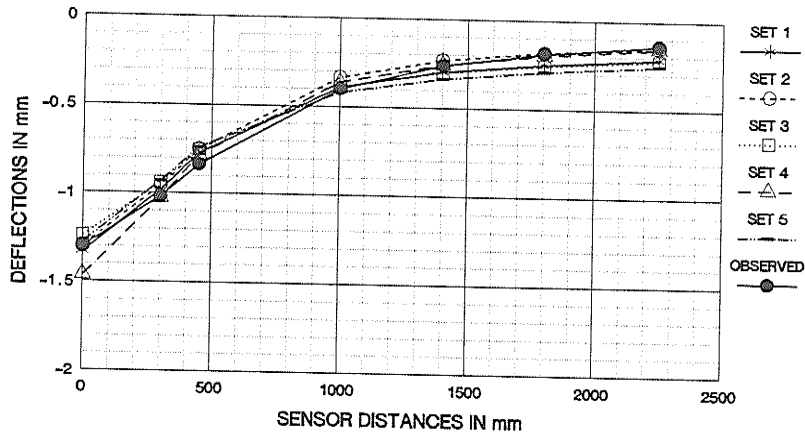
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

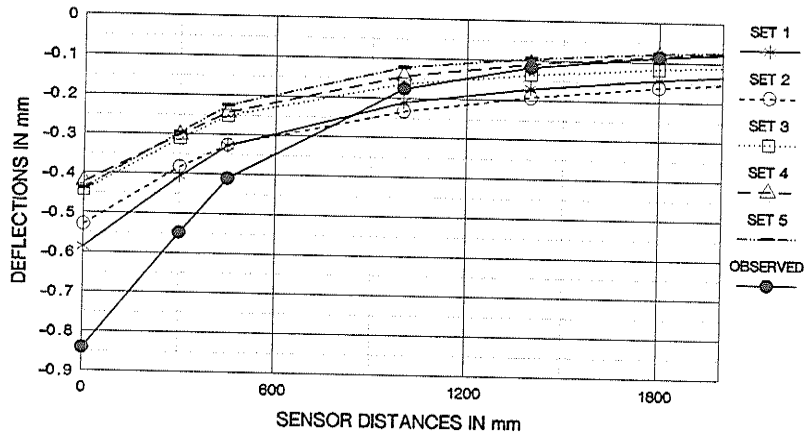


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

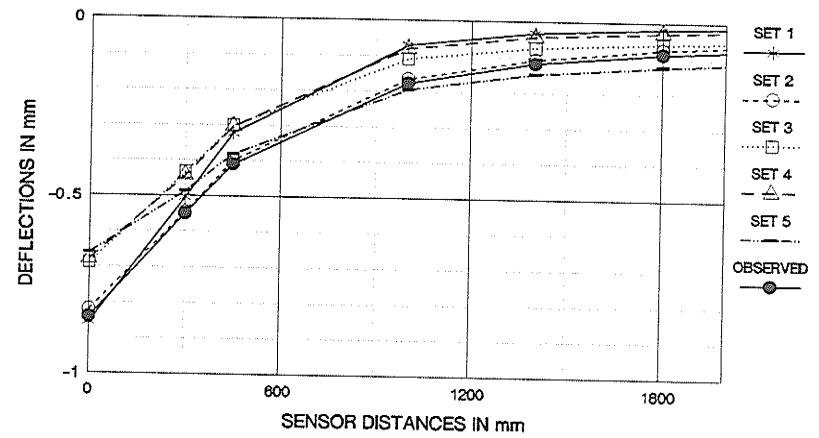


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY . 15-33:STA . 5 + 840 R:LOAD 1409 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

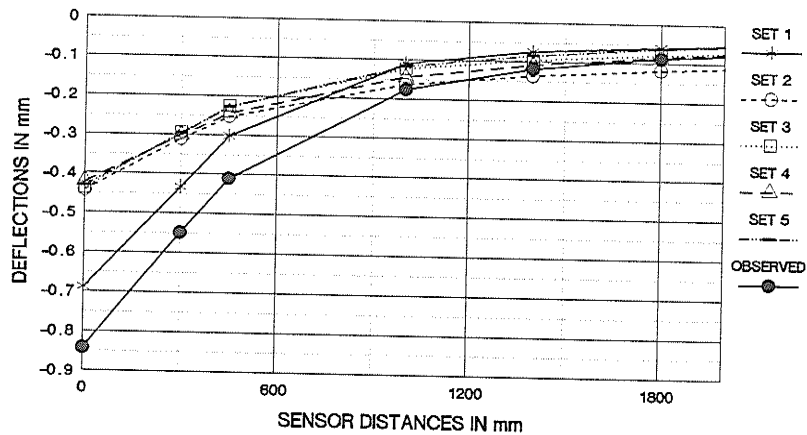
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

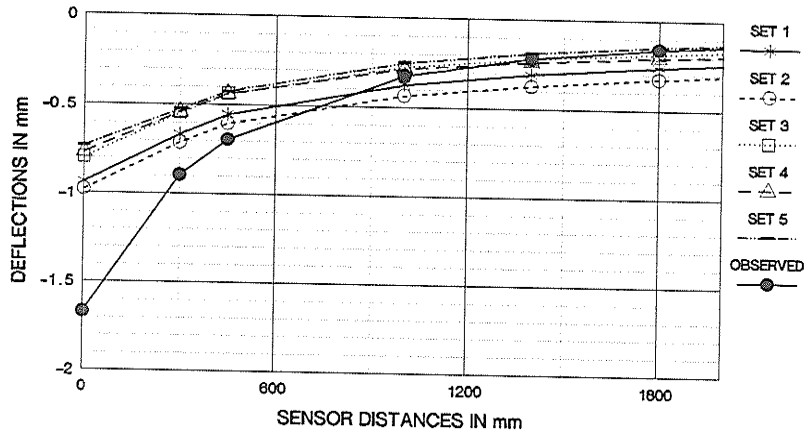


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

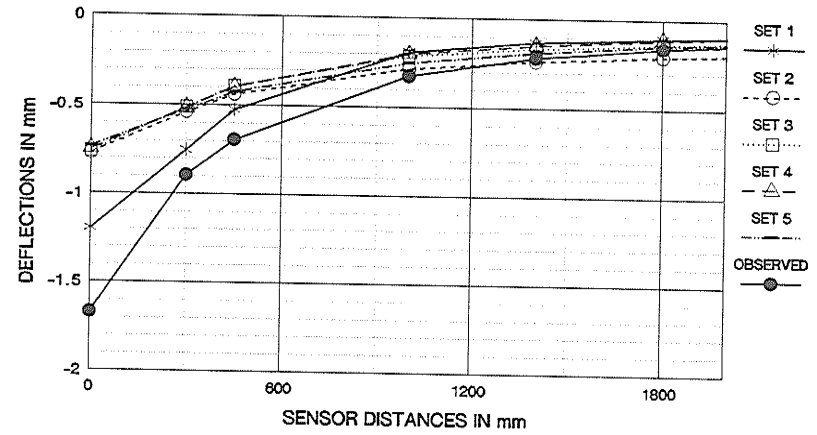
SASKATOON: RWY . 15-33: STA. 5 + 930: LOAD 699 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

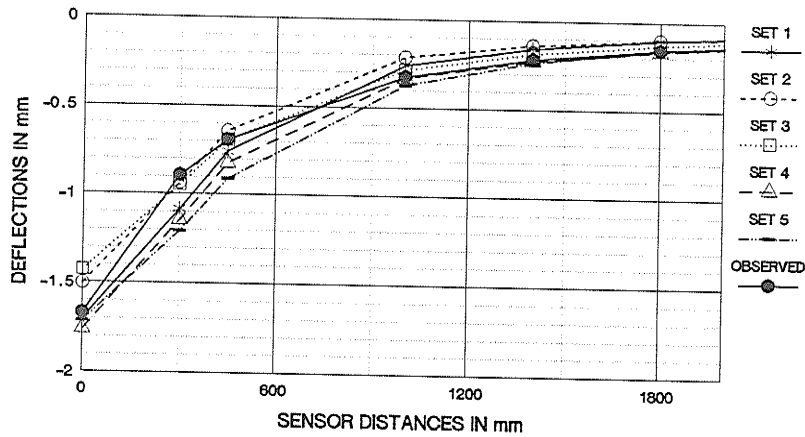
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

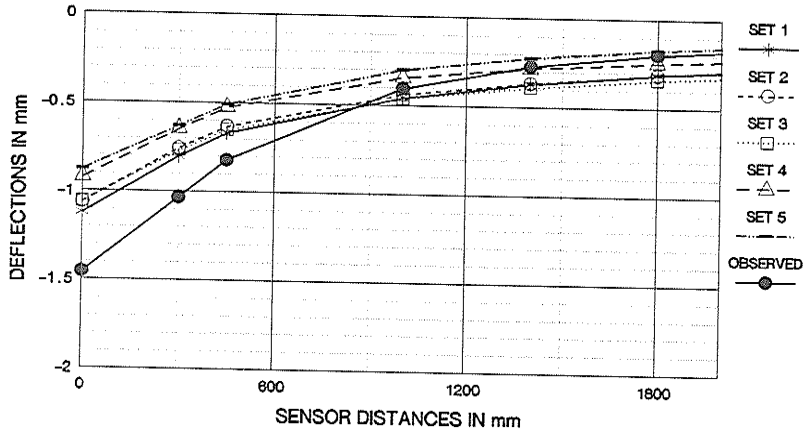


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

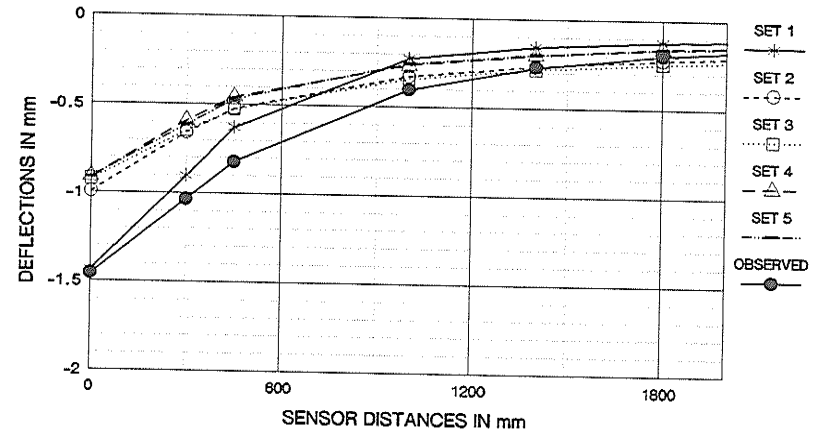


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY . 15-33: STA. 5 + 930: LOAD 1216 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

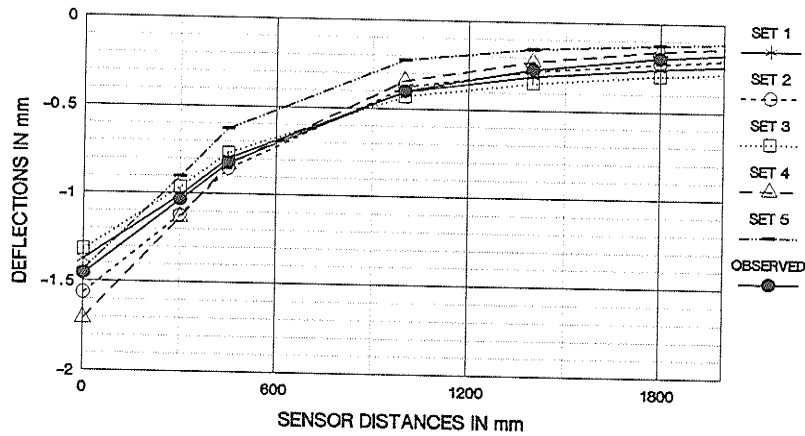
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

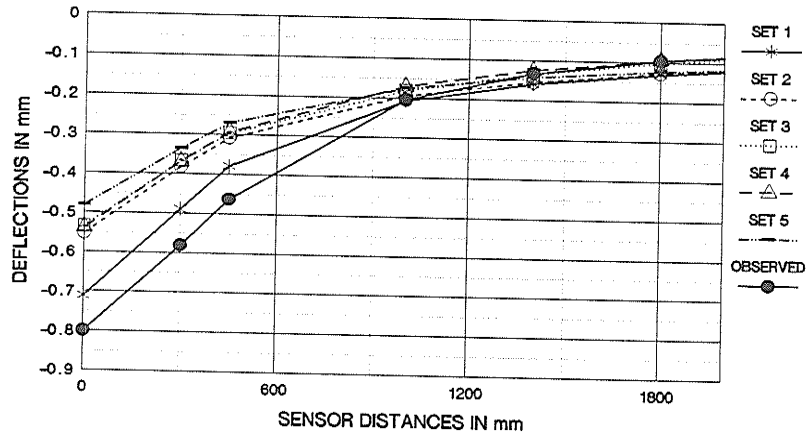


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

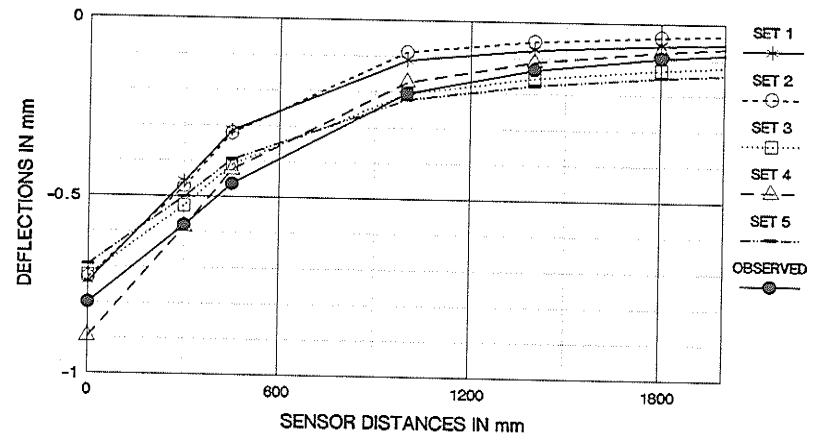
SASKATOON: RWY. 15-33: STA. 5 + 930: LOAD 1456 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

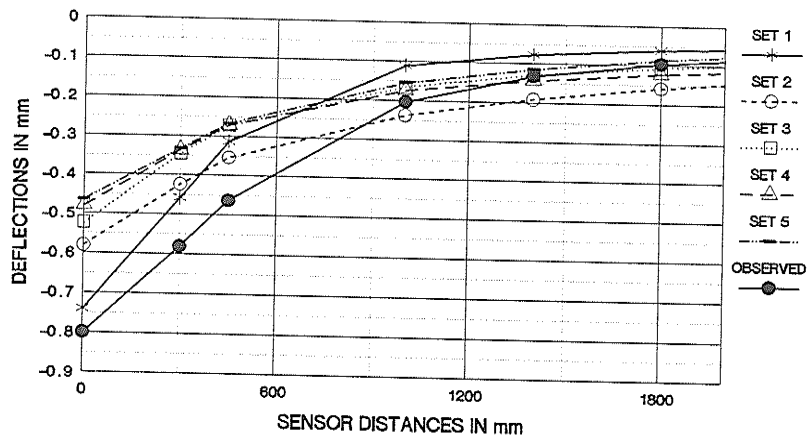
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

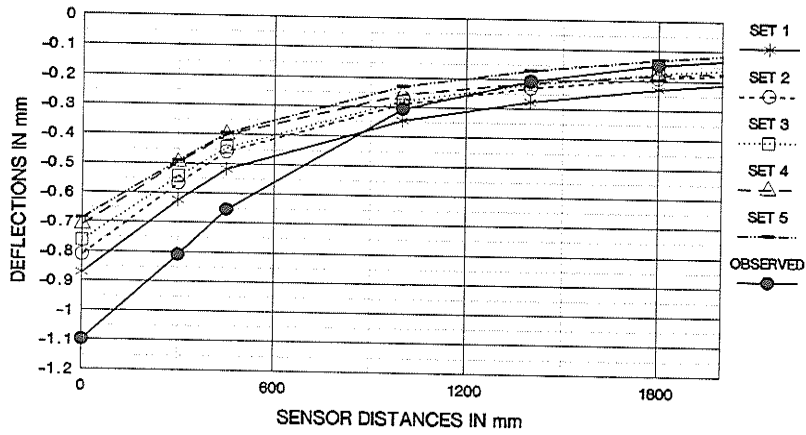


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

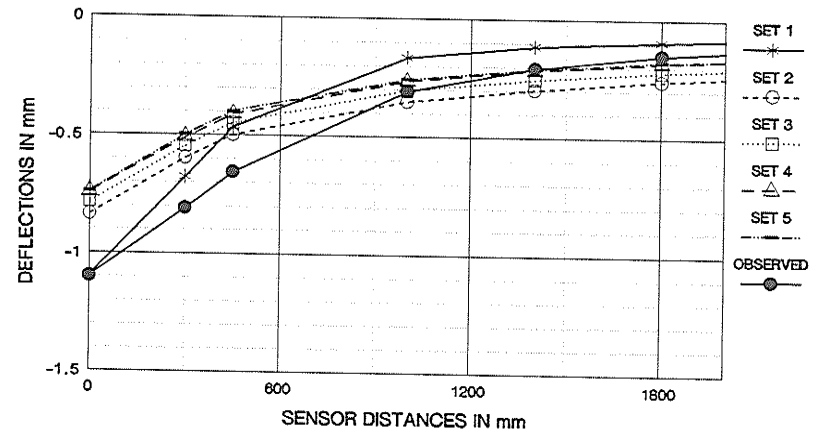
SASKATOON: RWY. 15-33: STA. 6 + 020: LOAD 733 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

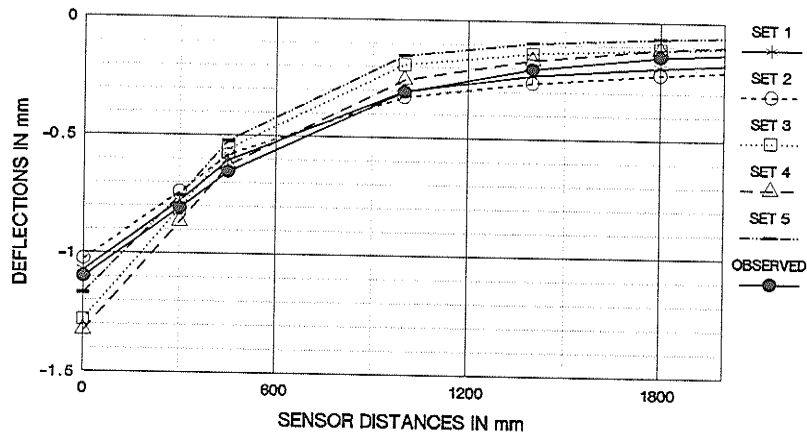
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

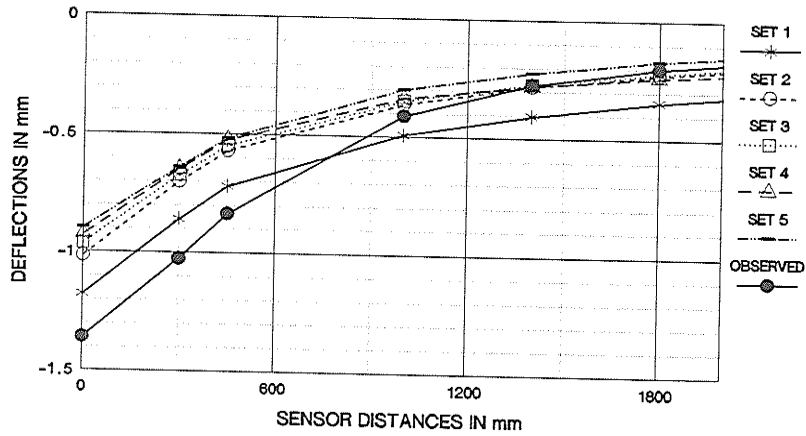


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

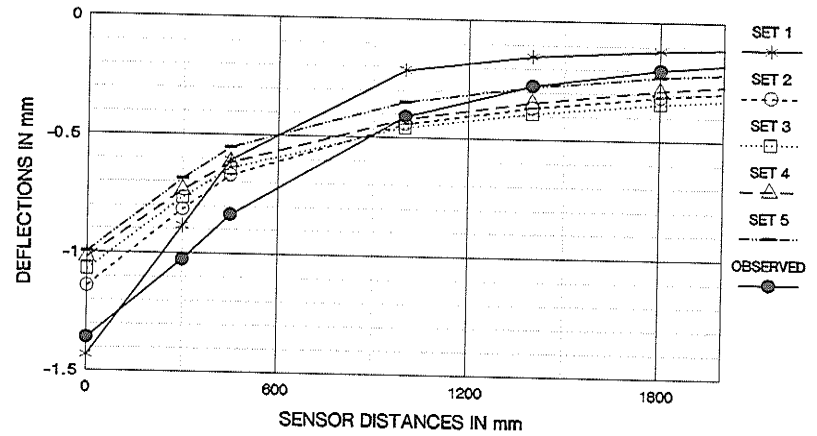
SASKATOON: RWY. 15-33: STA. 6 + 020: LOAD 1085 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

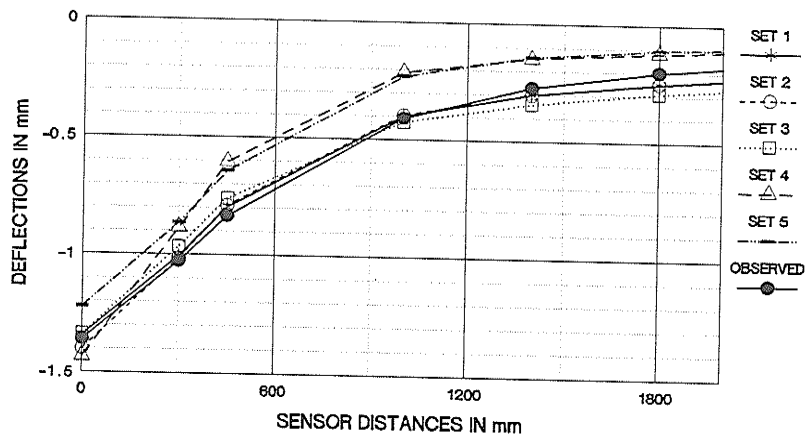
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

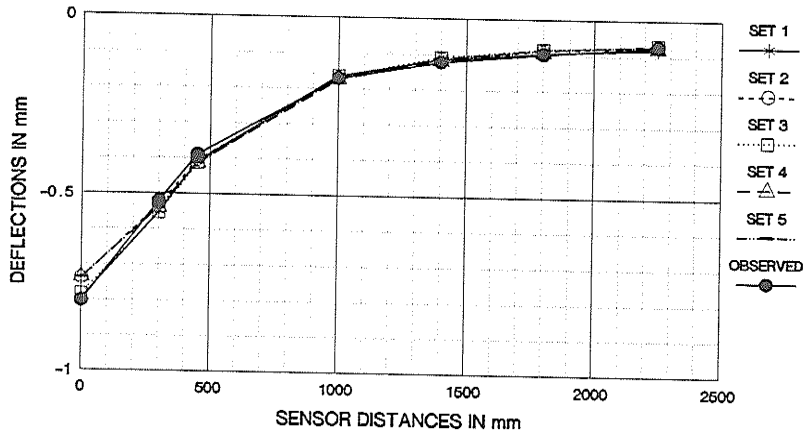


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

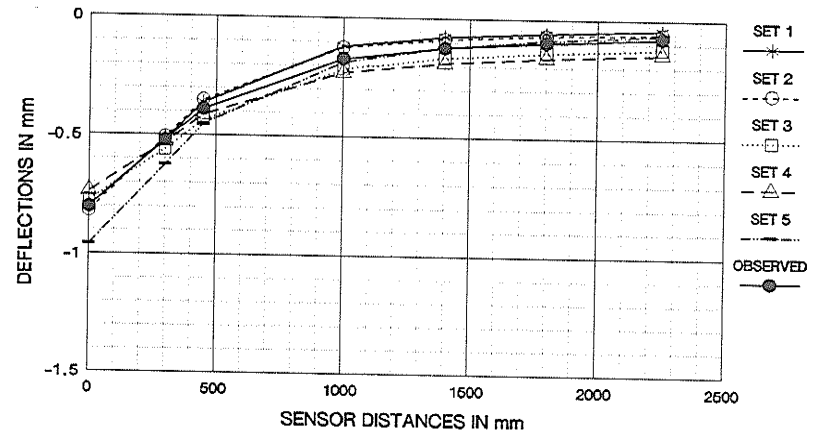


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY. 15-33: STA. 6 + 020: LOAD 1417 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

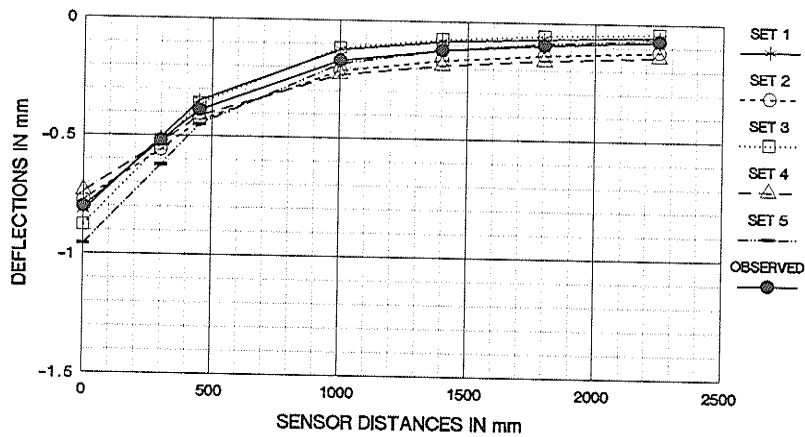
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

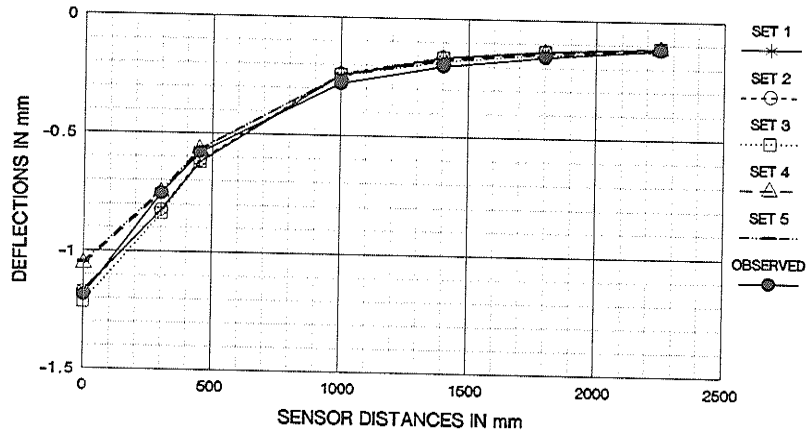


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

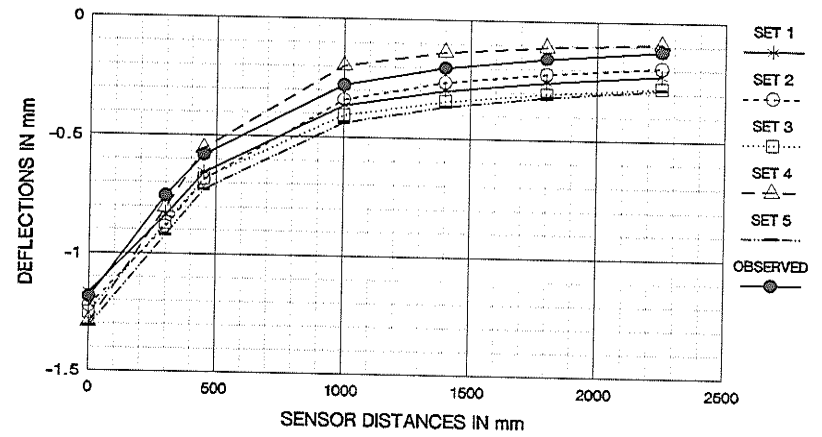


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY . 15-33:STA . 6 + 140 L LOAD 789 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

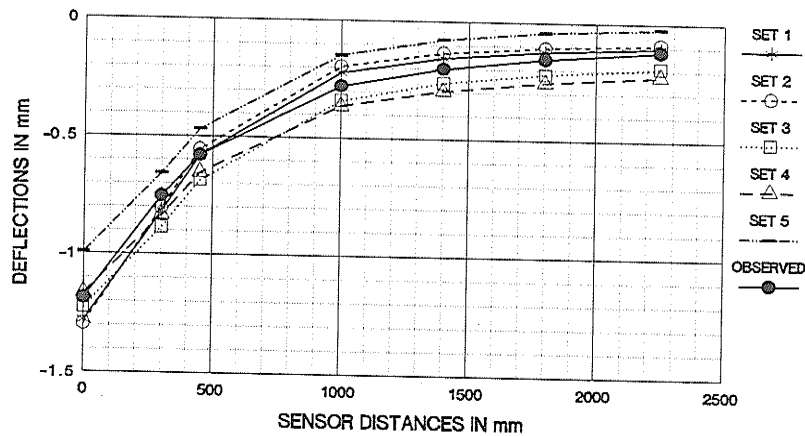
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

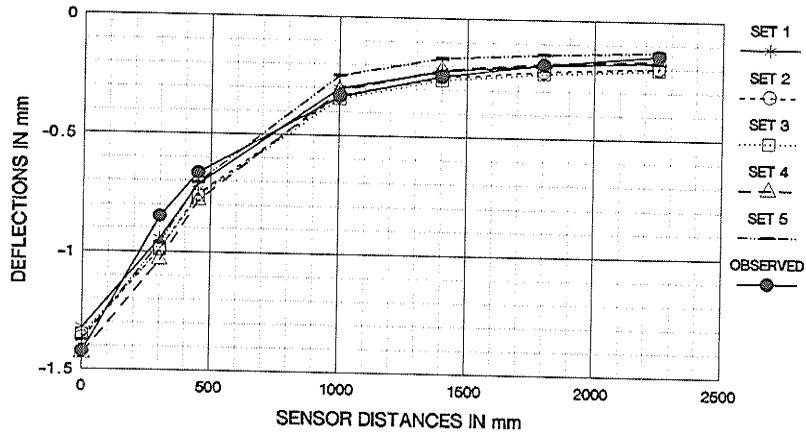


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

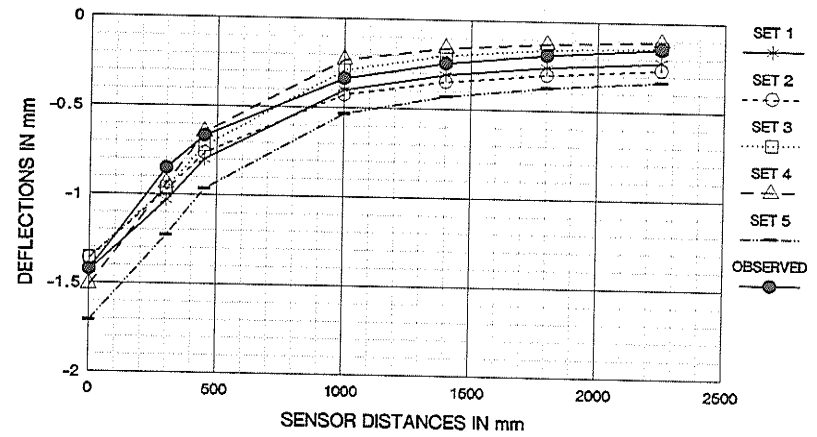


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY. 15-33:STA. 6 + 140 L :LOAD 1249 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

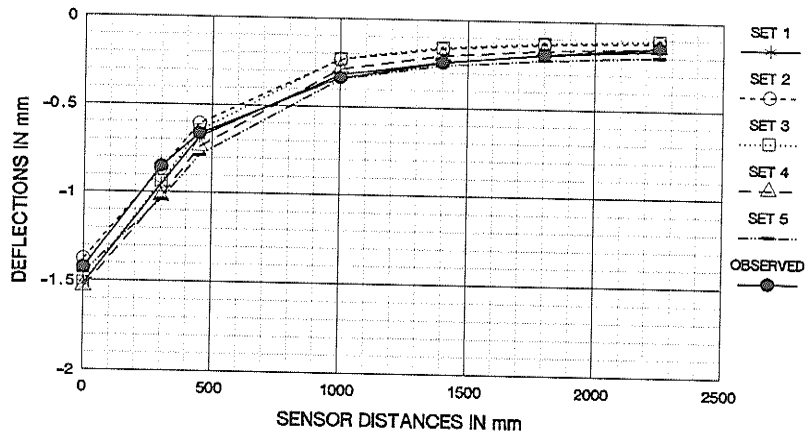
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

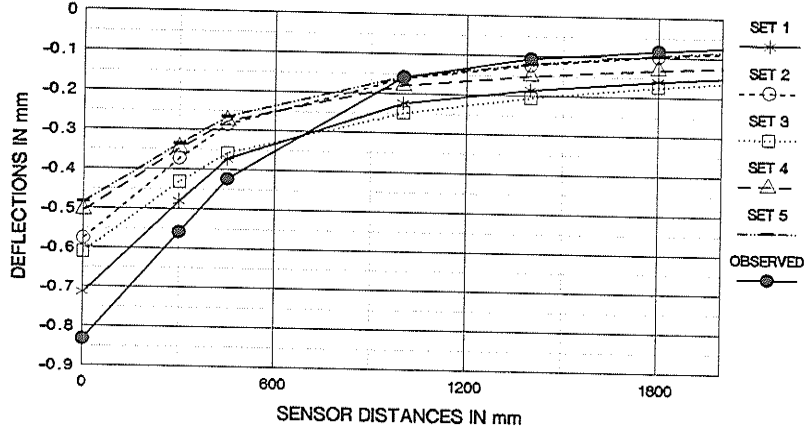


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

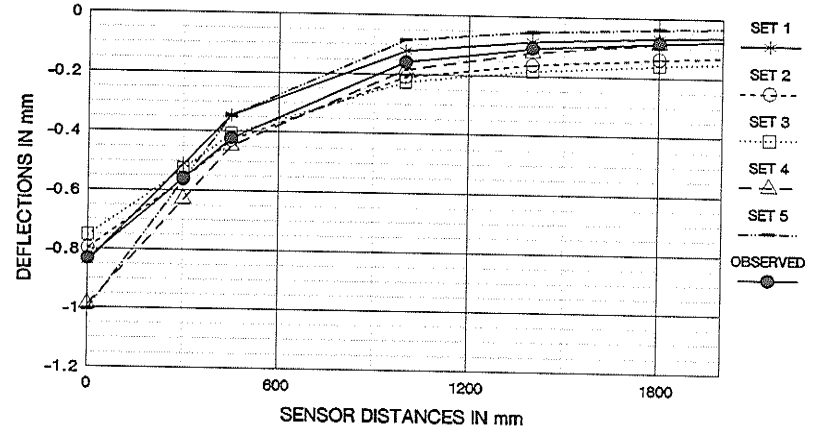
SASKATOON: RWY . 15-33:STA. 6 + 140 L :LOAD 1457 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

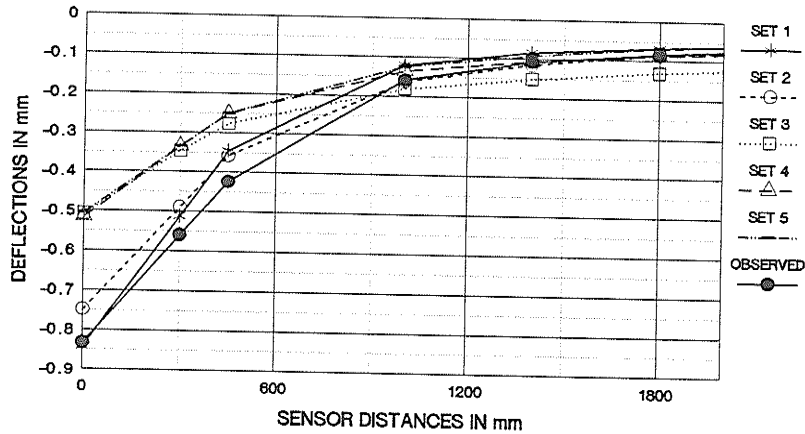
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

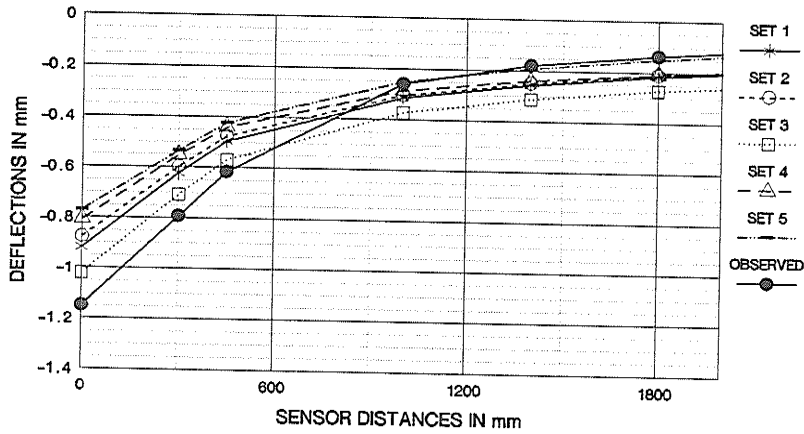


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

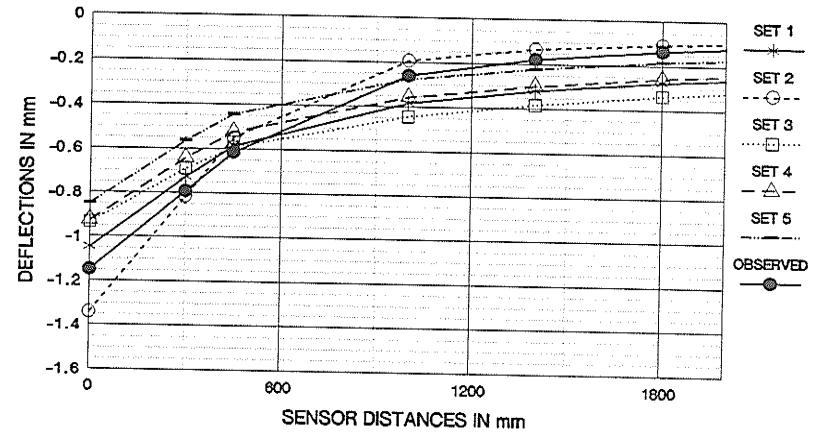


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY. 15-33: STA. 6 + 260: LOAD 782 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

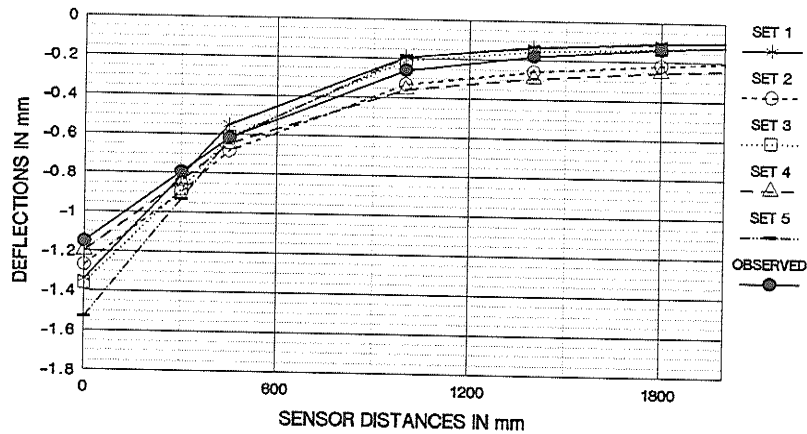
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

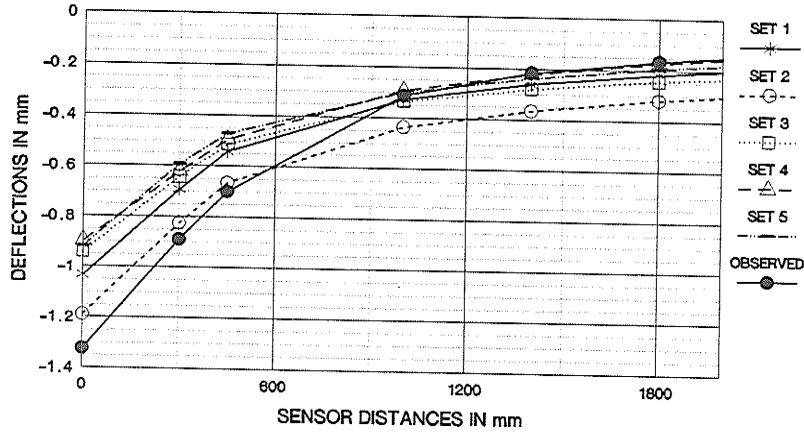


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

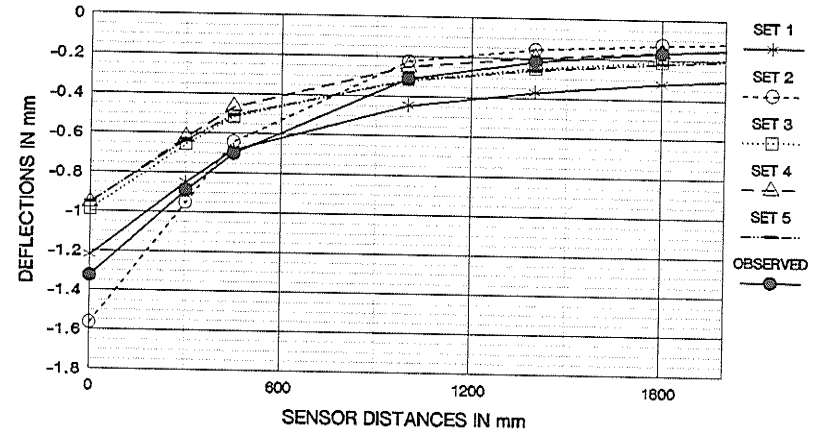
SASKATOON: RWY. 15-33: STA. 6 + 260: LOAD 1245 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

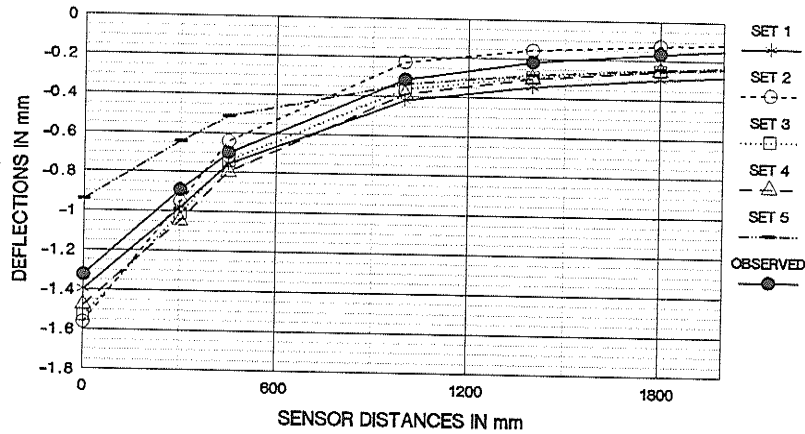
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

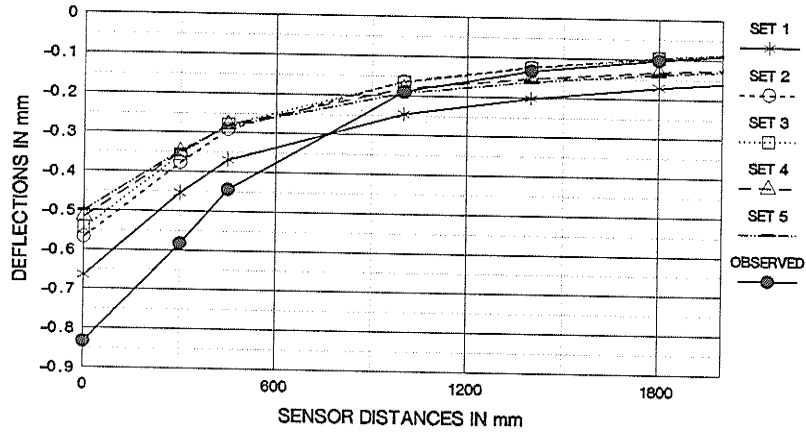


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

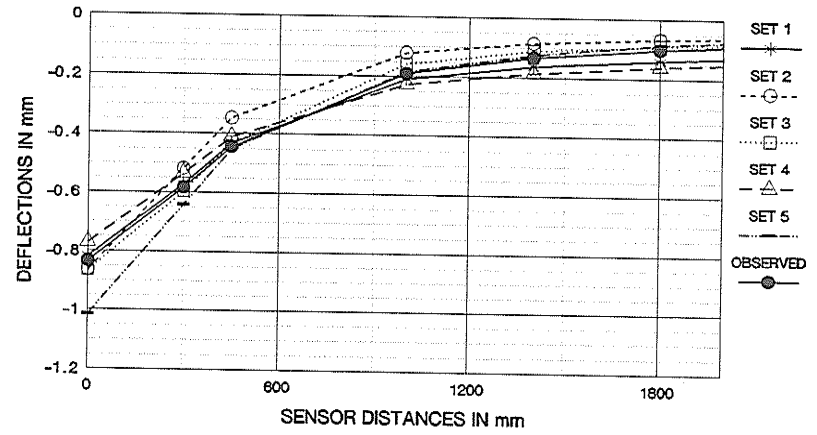
SASKATOON: RWY. 15-33: STA. 6 + 260: LOAD 1452 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

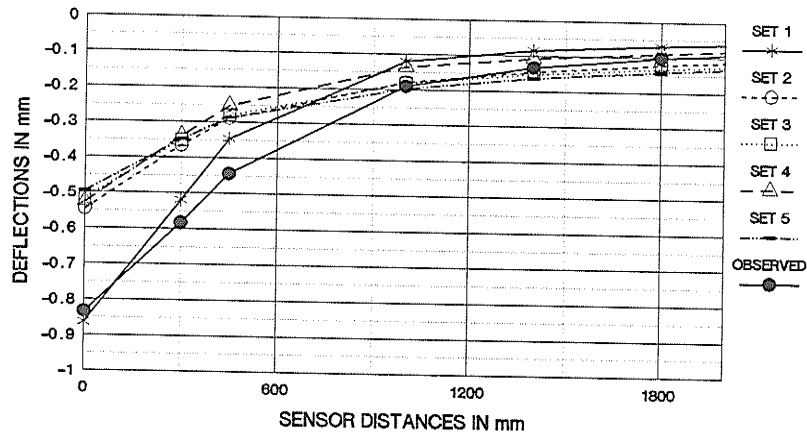
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

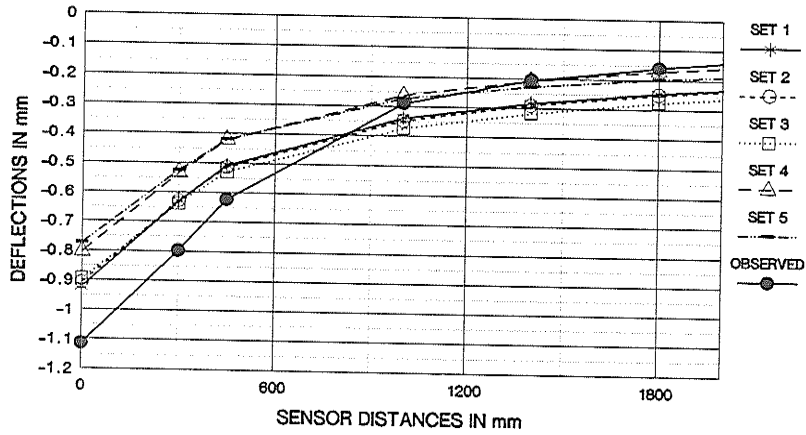


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

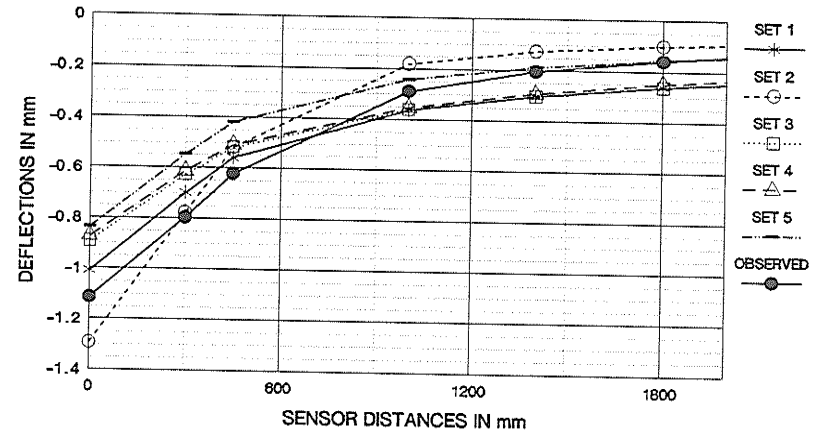
SASKATOON: RWY . 15-33: STA . 6 + 380: LOAD 786 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

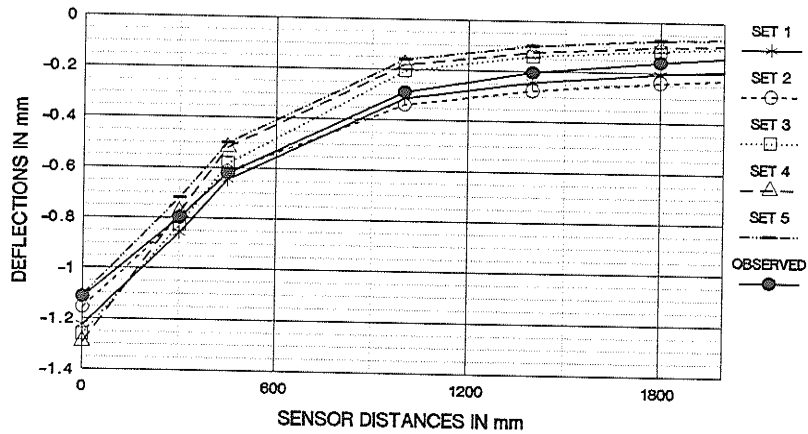
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

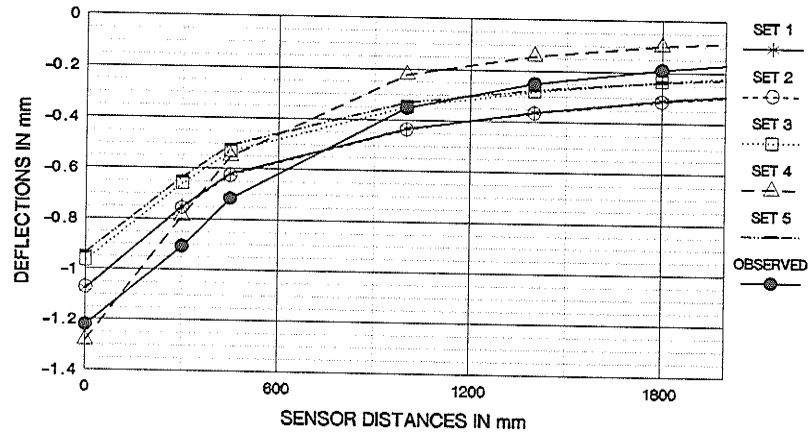


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

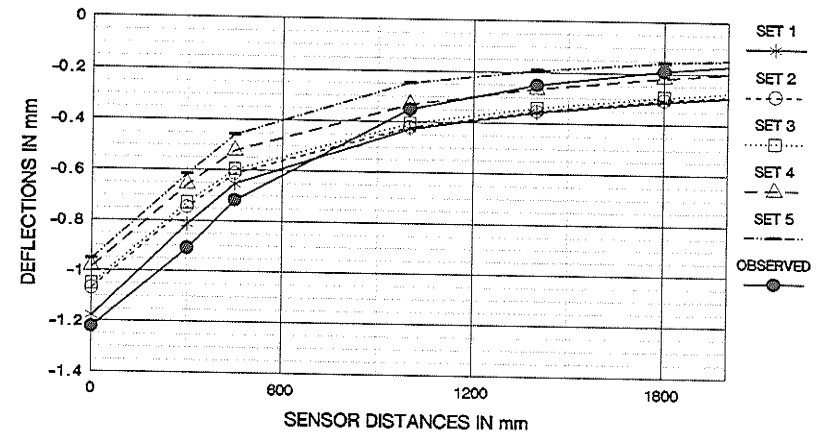
SASKATOON: RWY. 15-33: STA. 6 + 380: LOAD 1177 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

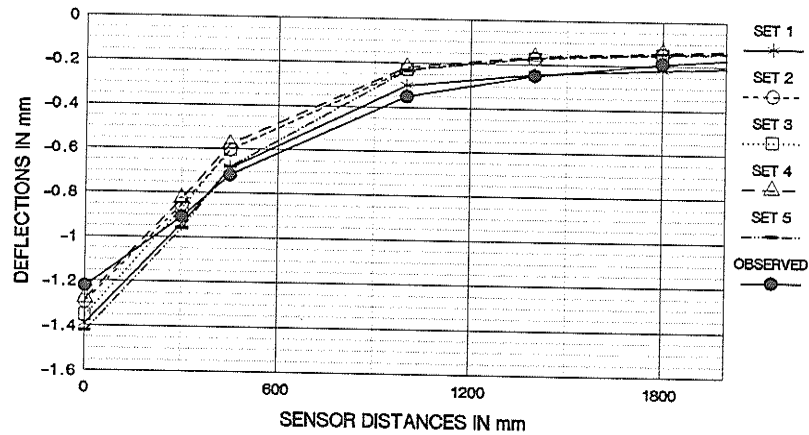
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

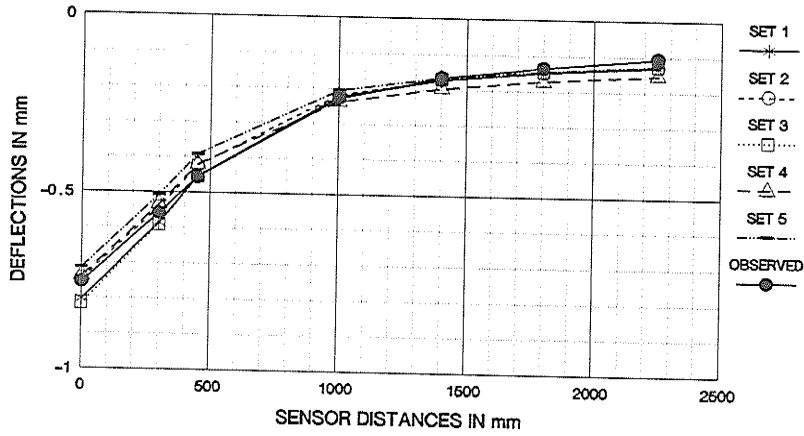


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

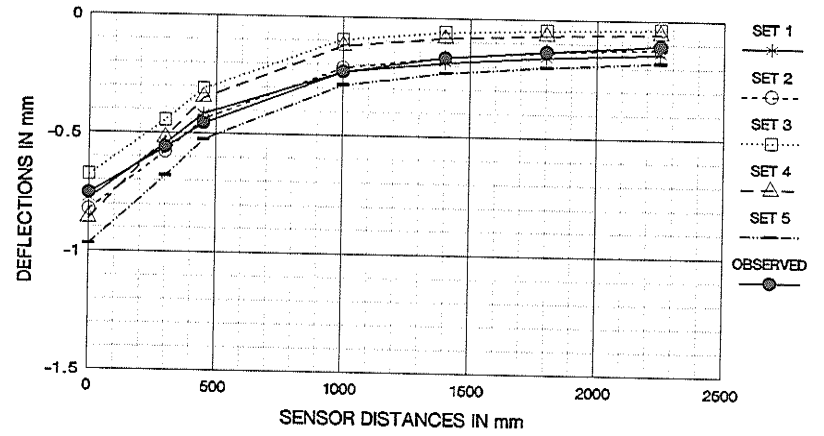
SASKATOON: RWY . 15-33: STA. 6 + 380: LOAD 1422 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

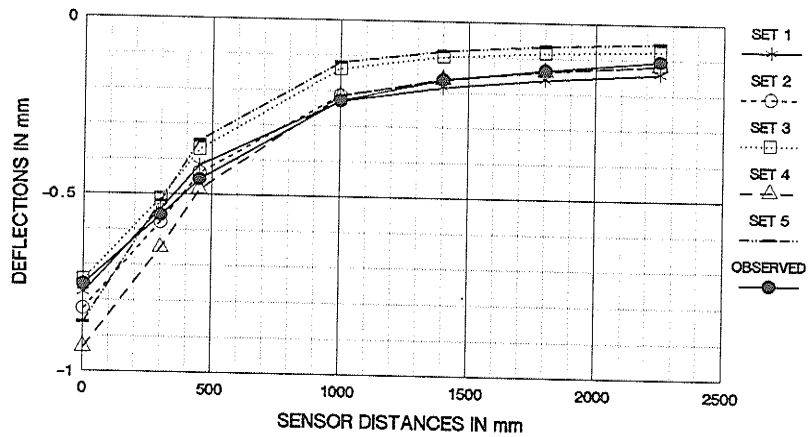
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

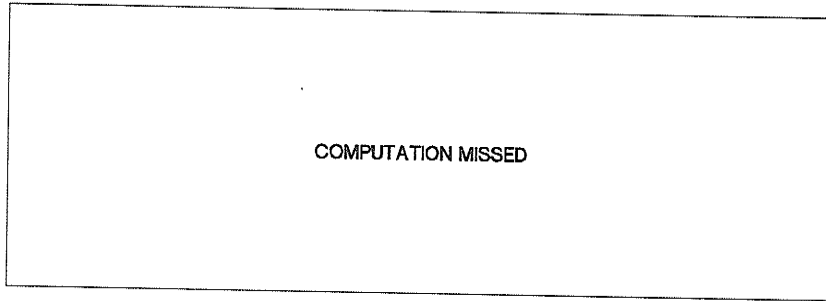


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

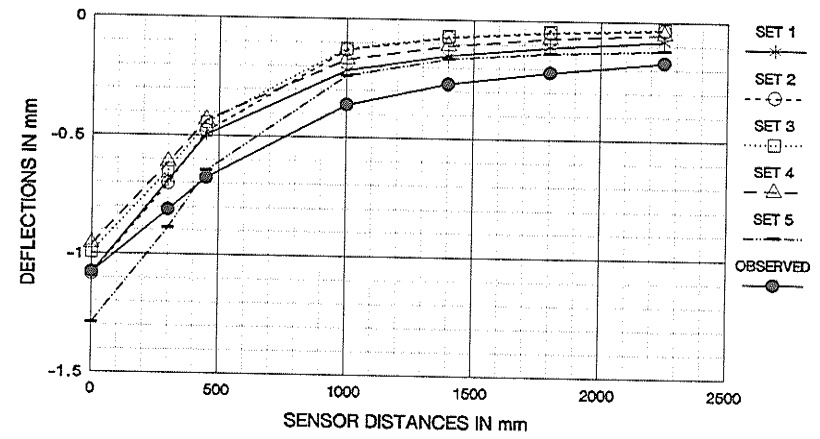
SASKATOON: RWY . 15-33:STA . 6 + 470 LLOAD 782 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

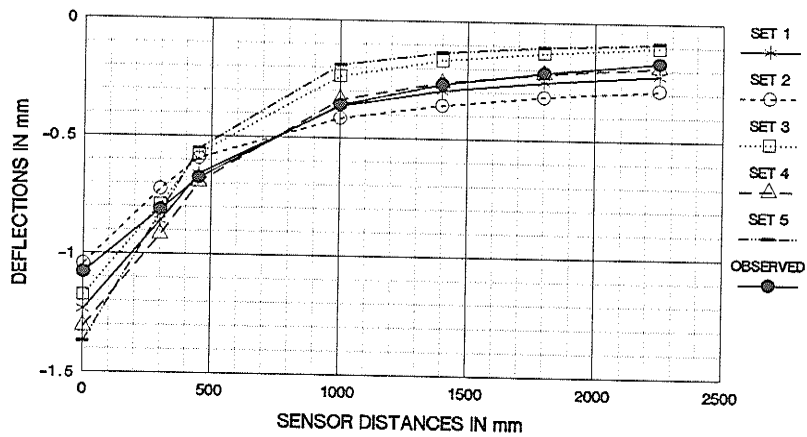
OPTIMIZATION CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

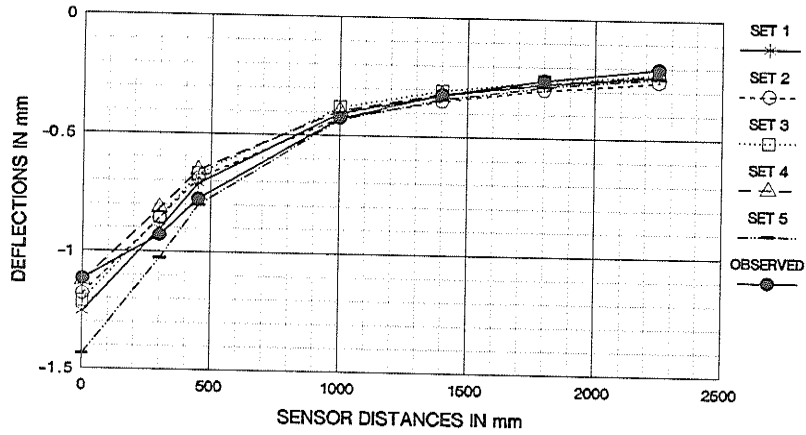


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

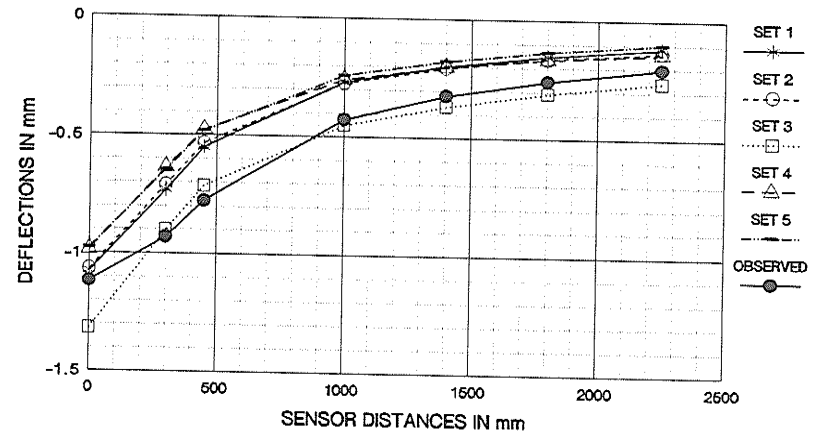
SASKATOON: RWY . 15-33:STA. 6 + 470 LLOAD 1243 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

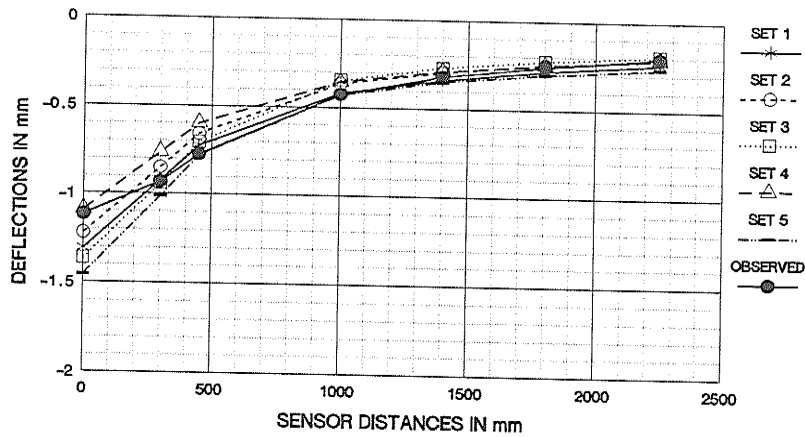
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

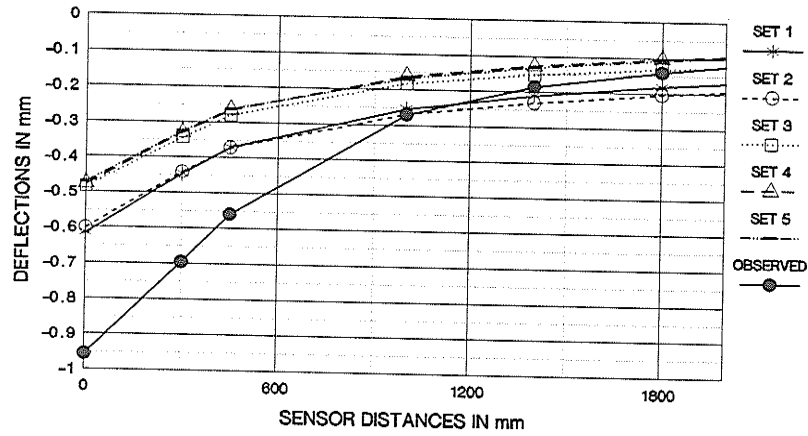


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

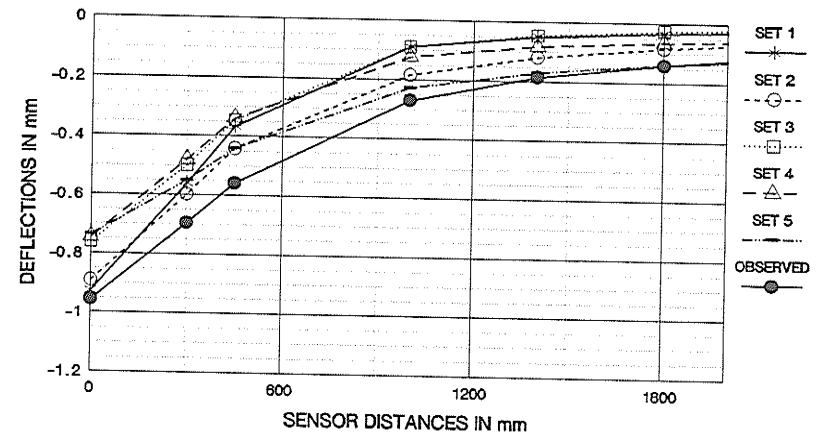
SASKATOON: RWY . 15-33:STA . 6 + 470 LLOAD 1462 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

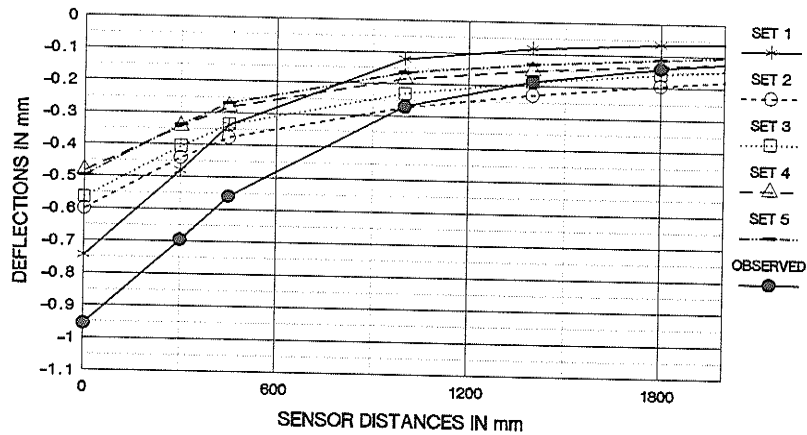
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

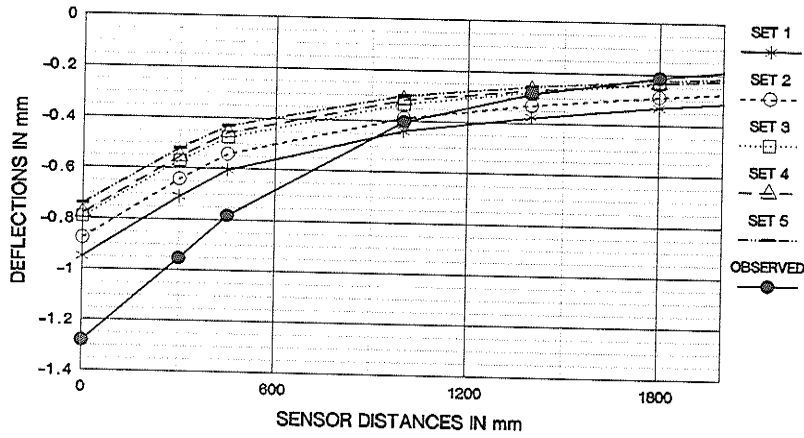


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

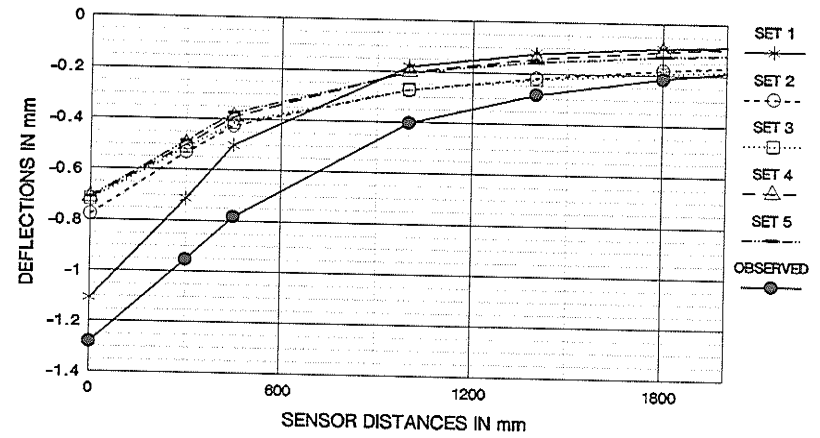
SASKATOON: RWY . 15-33: STA . 6 + 590: LOAD 784 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

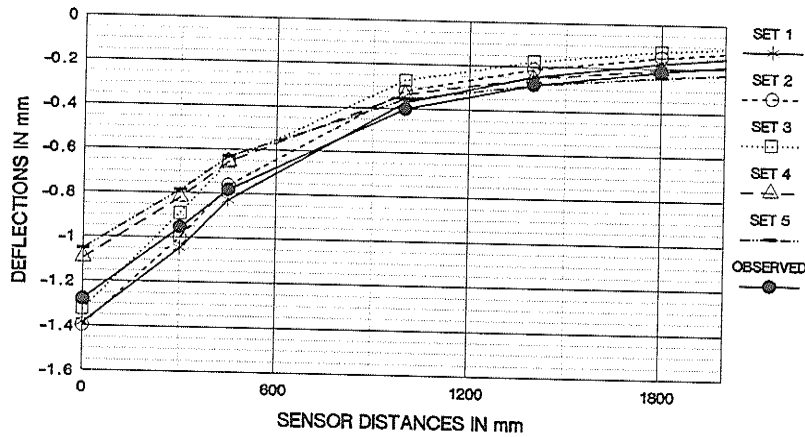
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

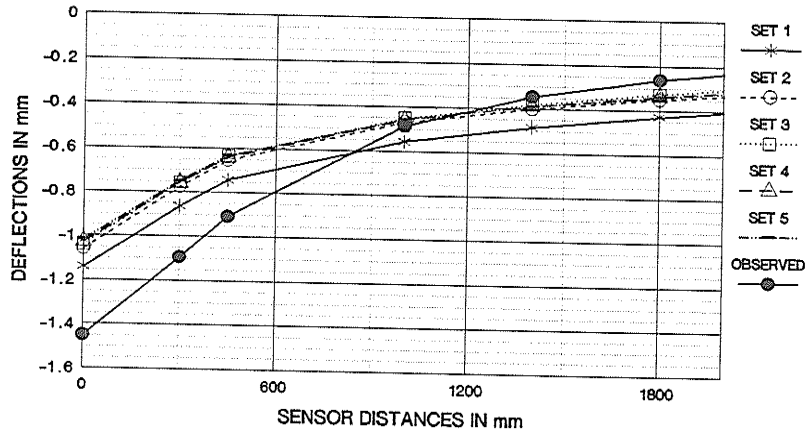


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

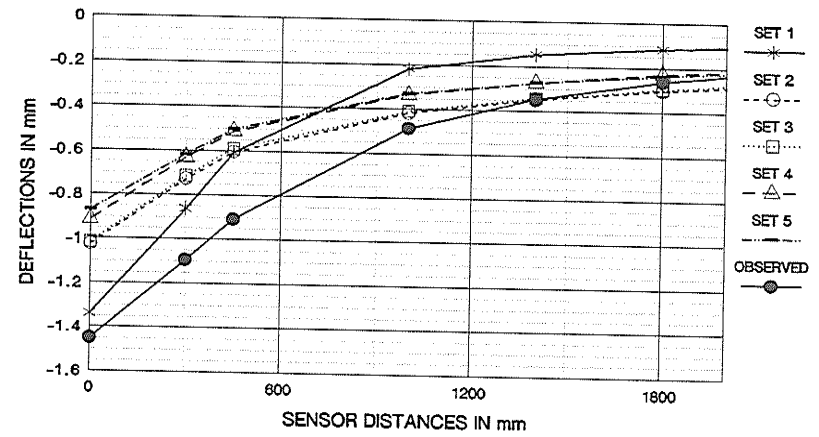
SASKATOON: RWY. 15-33: STA. 6 + 590: LOAD 1166 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

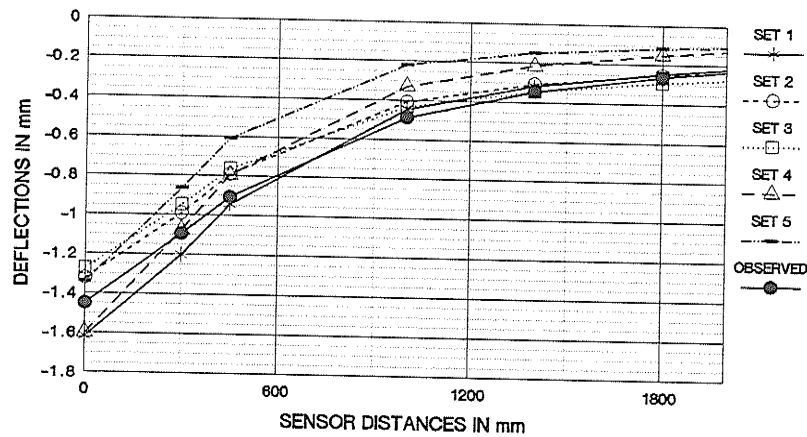
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

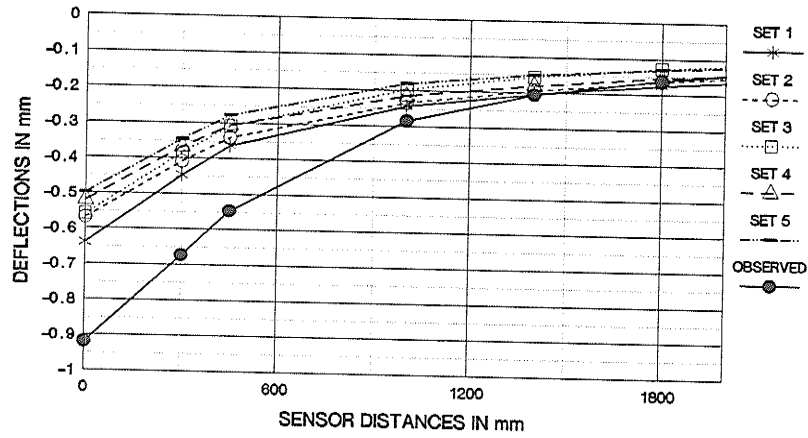


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

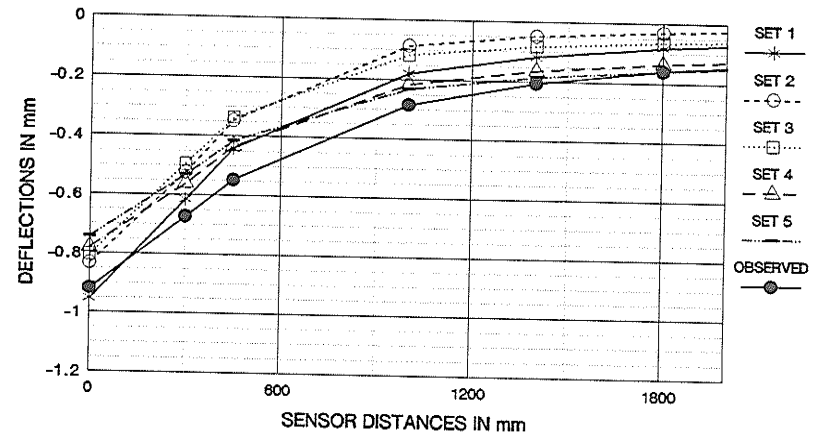
SASKATOON: RWY. 15-33: STA. 6 + 590: LOAD 1409 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

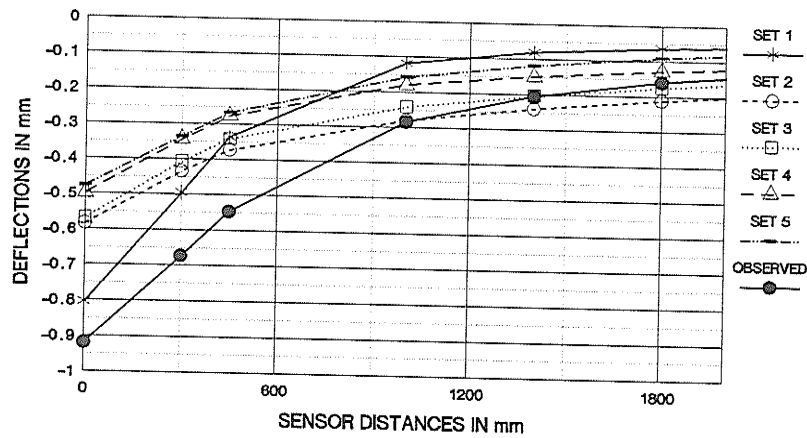
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

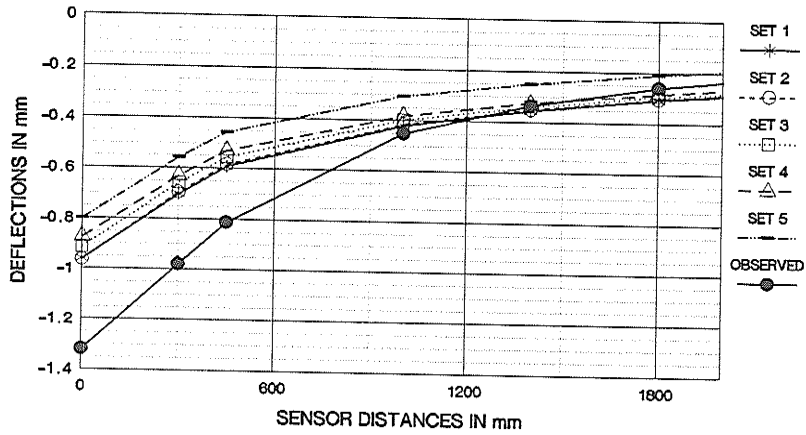


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

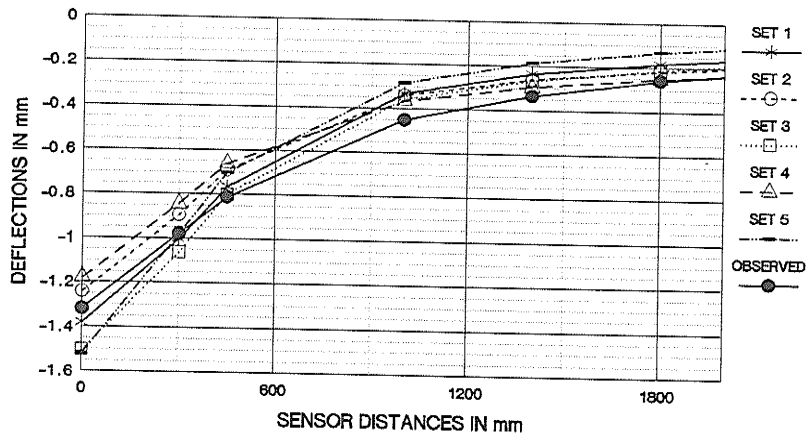
SASKATOON: RWY . 15-33: STA . 6 + 680: LOAD 771 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN

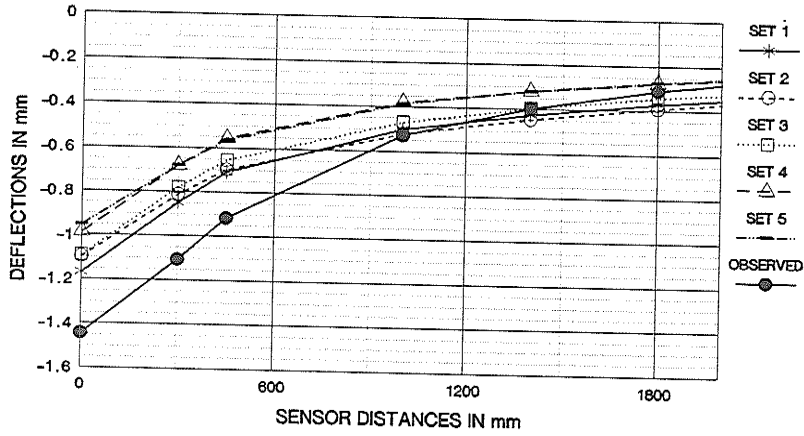


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

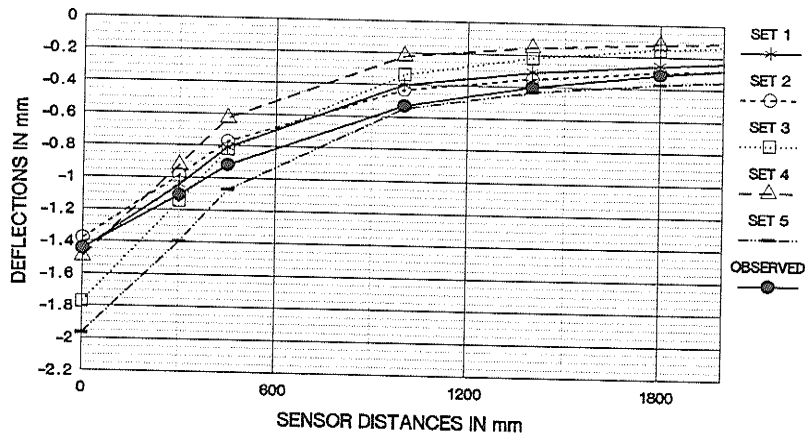


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL
 SASKATOON: RWY . 15-33: STA. 6 + 680: LOAD 1228 kPa
 CALCULATED AND OBSERVED DEFLECTION BASINS

OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

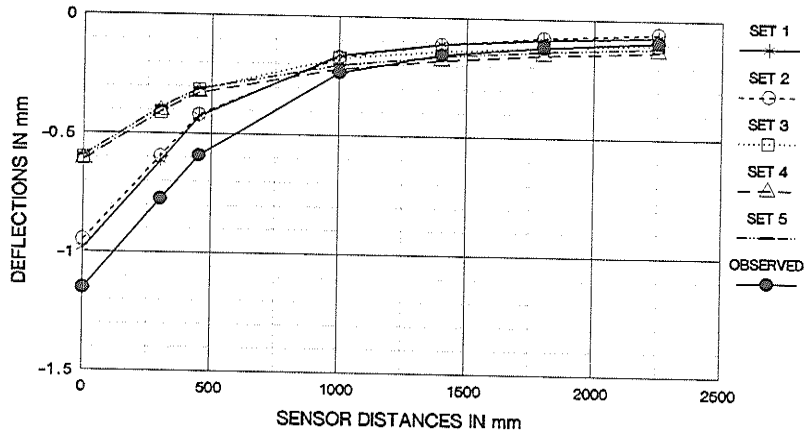


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

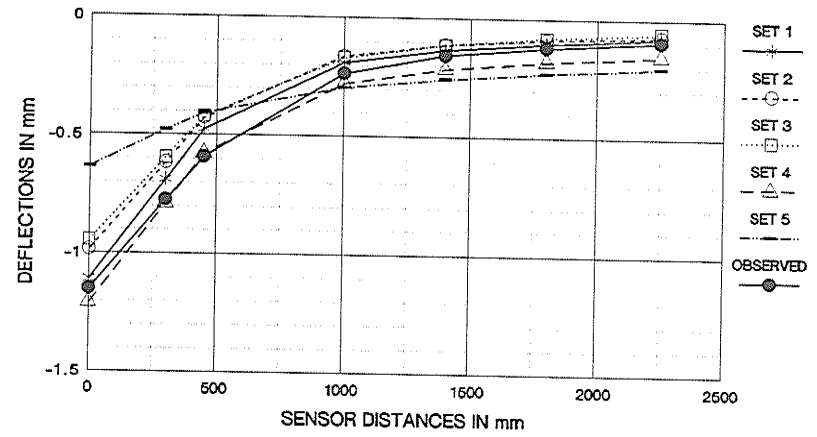
SASKATOON: RWY . 15-33: STA. 6 + 680: LOAD 1434 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

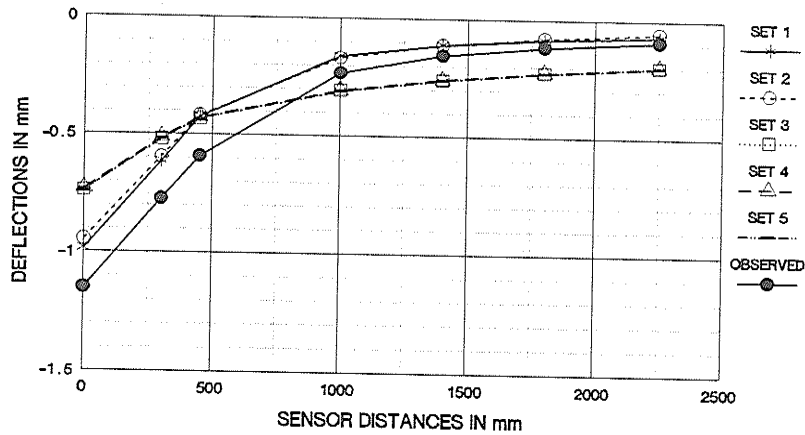
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

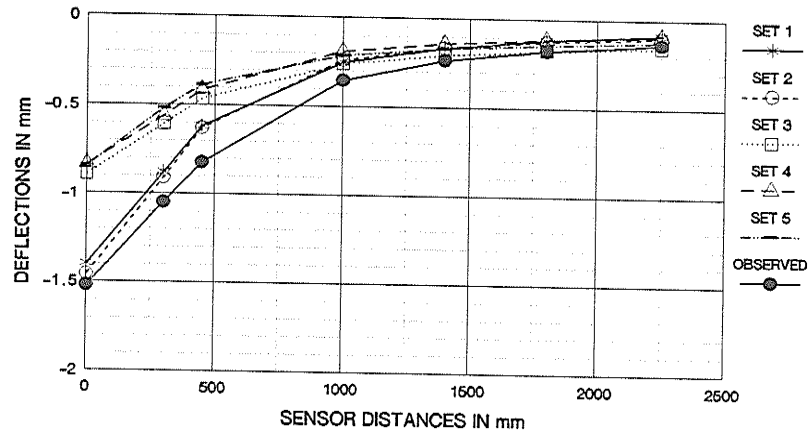


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

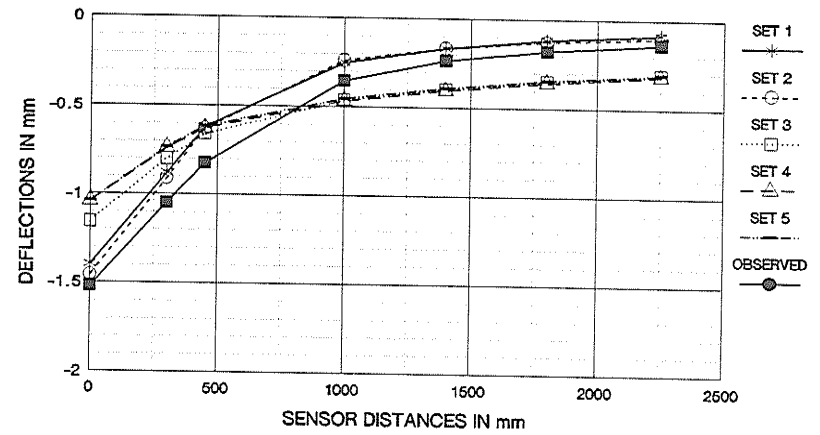
SASKATOON: RWY. 15-33:STA. 5 + 360 R:LOAD 737 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

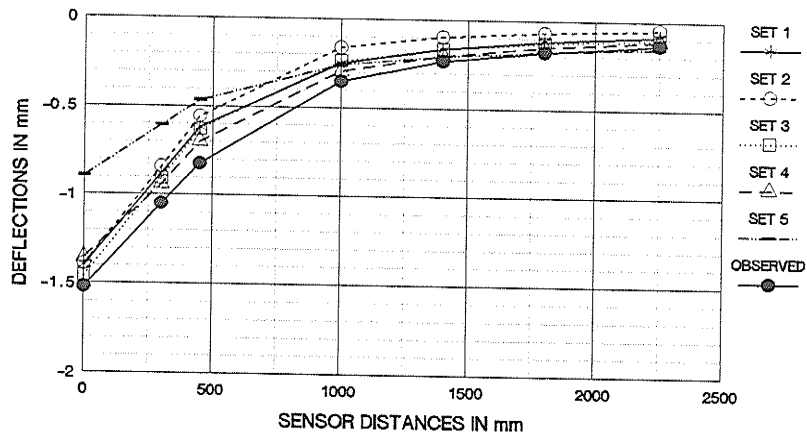
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

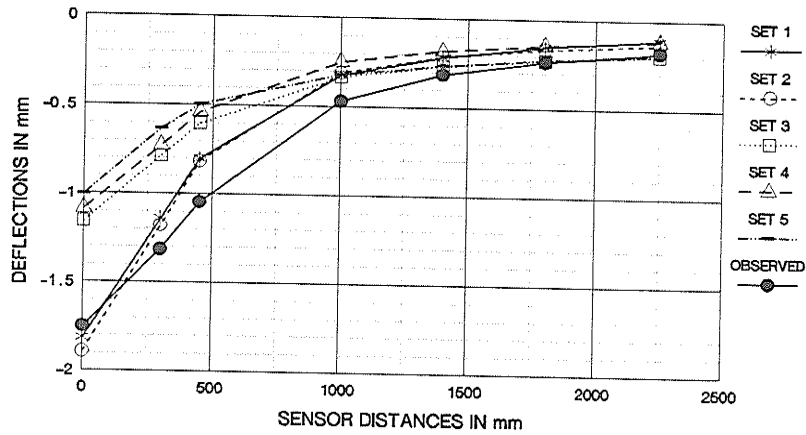


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

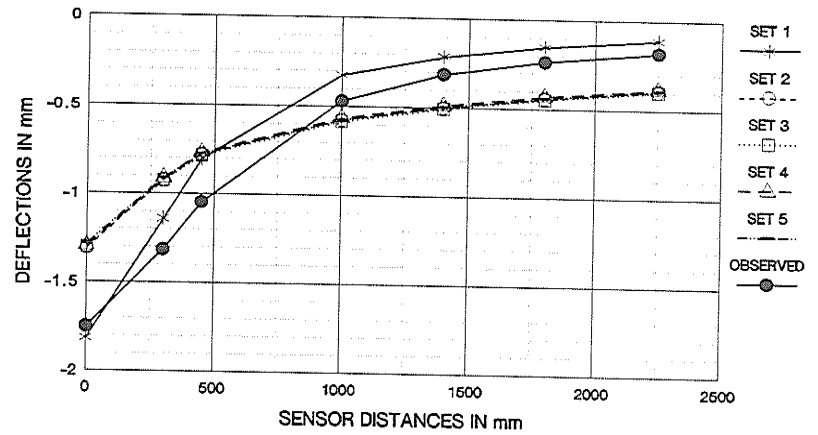
SASKATOON: RWY . 15-33:STA. 5 + 360 R:LOAD 1090 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

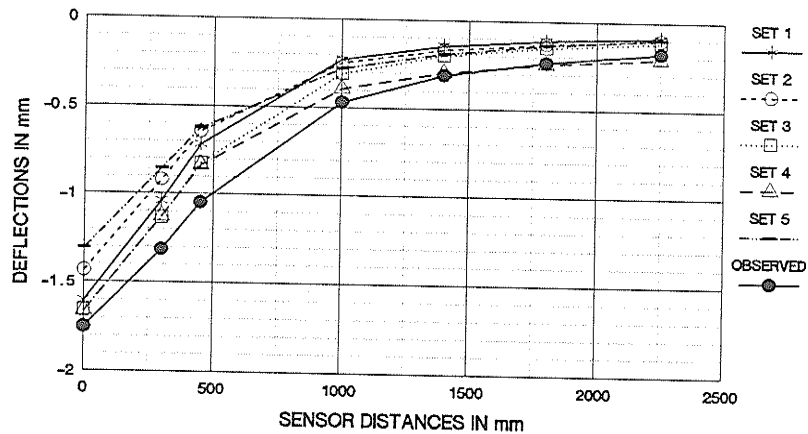
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

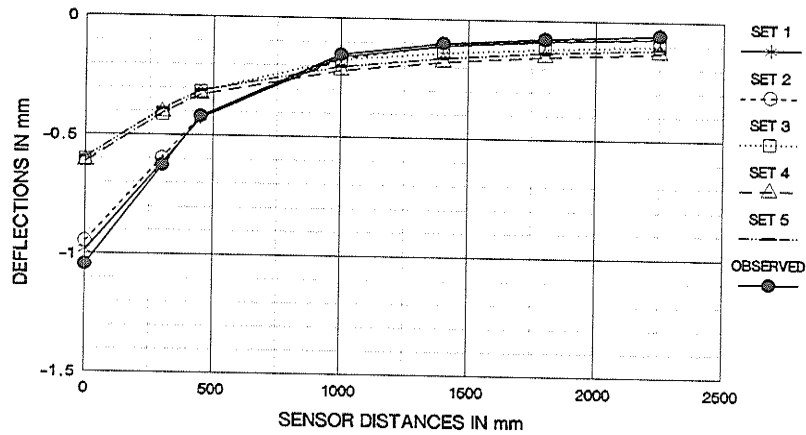


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

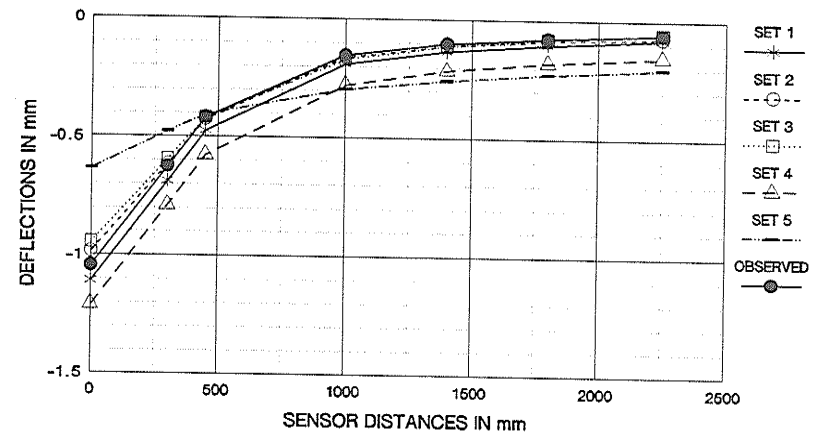
SASKATOON: RWY. 15-33:STA. 5 + 360 R:LOAD 1415 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

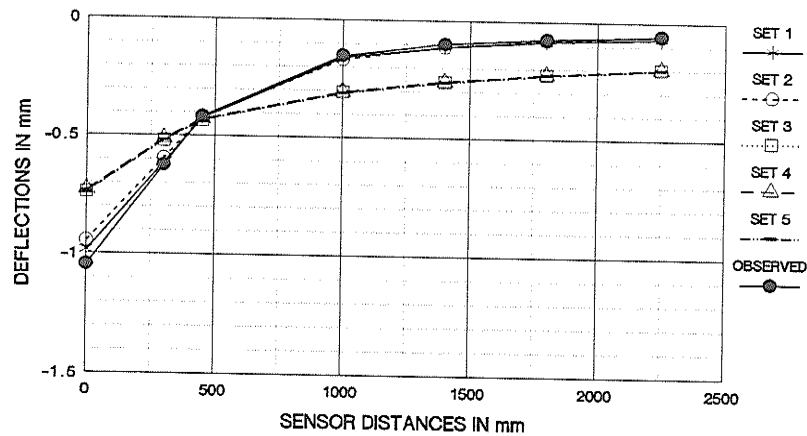
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

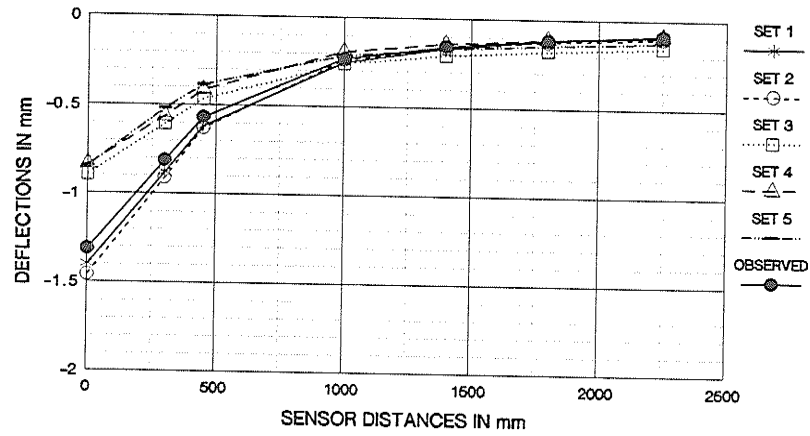


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

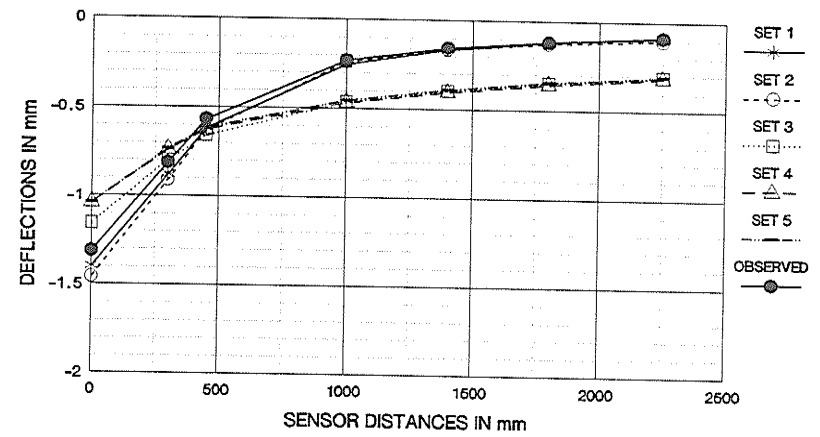
SASKATOON: RWY . 15-33:STA . 5 + 630 R:LOAD 732 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

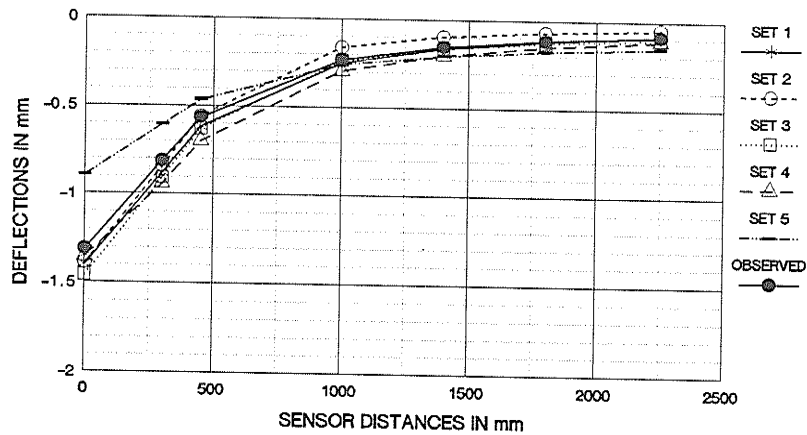
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

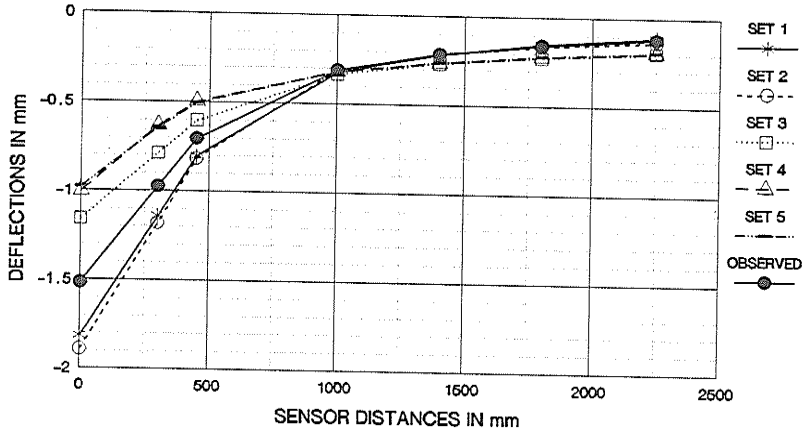


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

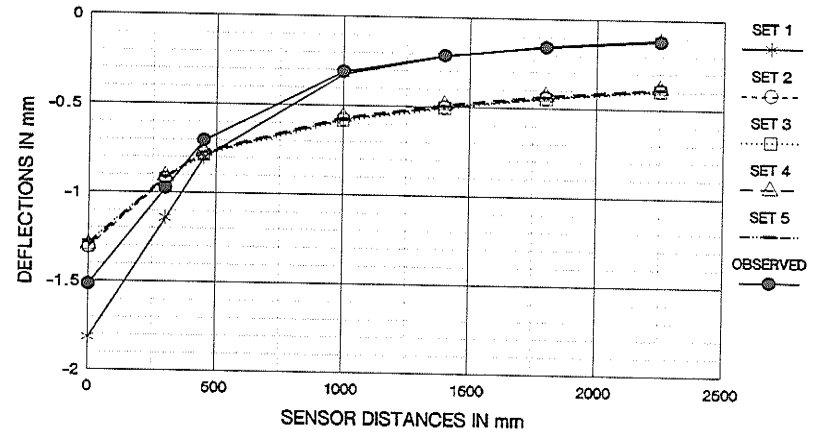
SASKATOON: RWY . 15-33:STA. 5 + 630 R:LOAD 1075 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

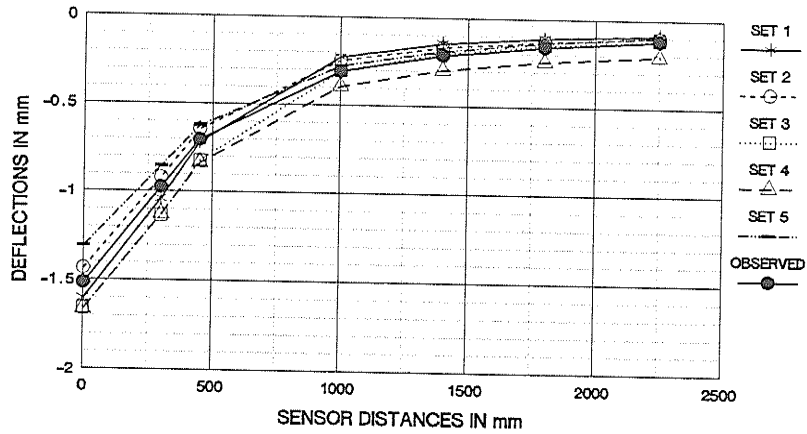
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

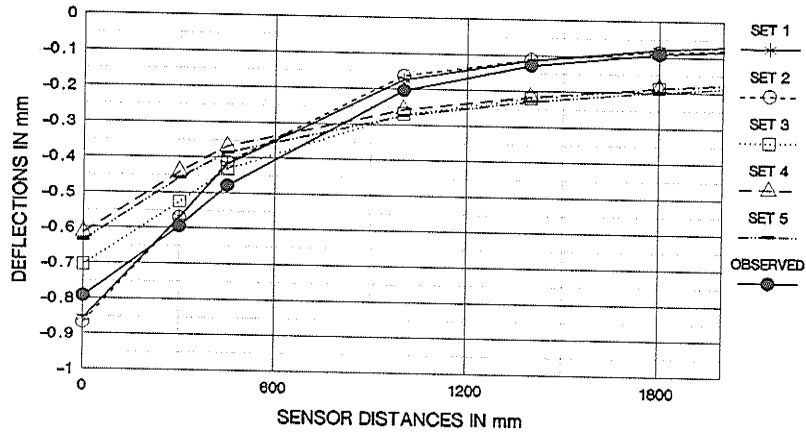


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

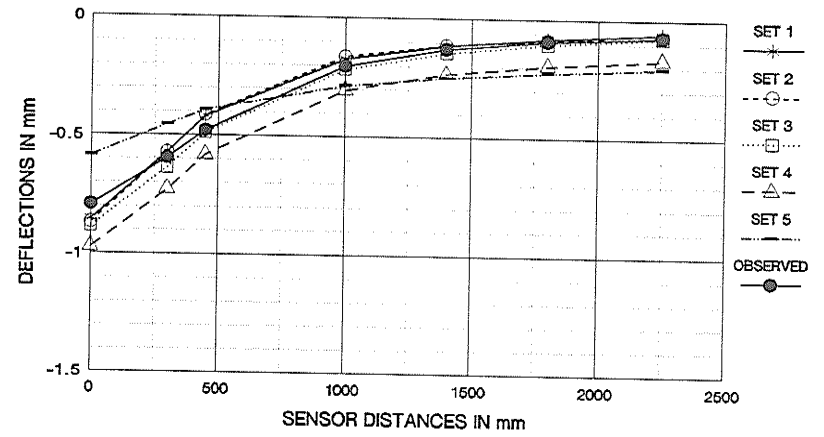
SASKATOON: RWY . 15-33:STA . 5 + 630 R:LOAD 1415 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

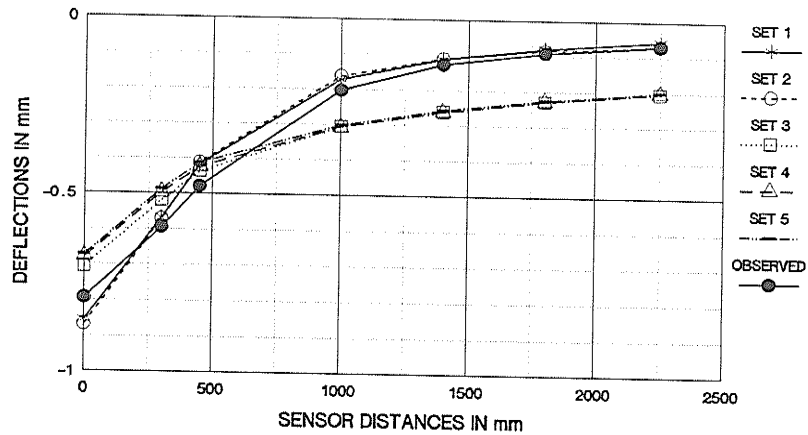
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

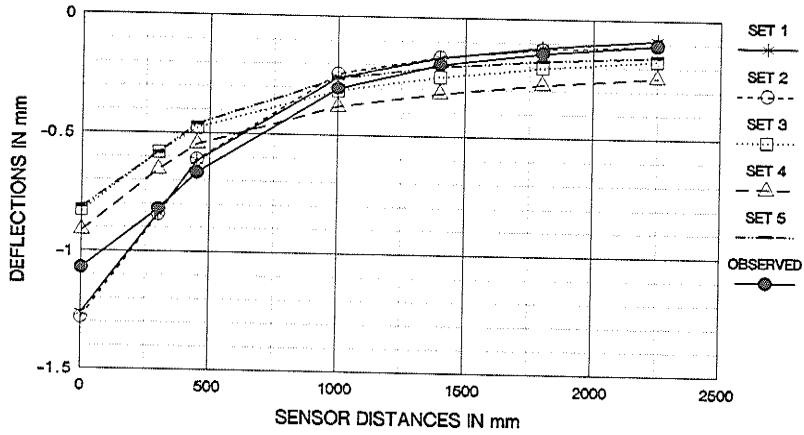


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

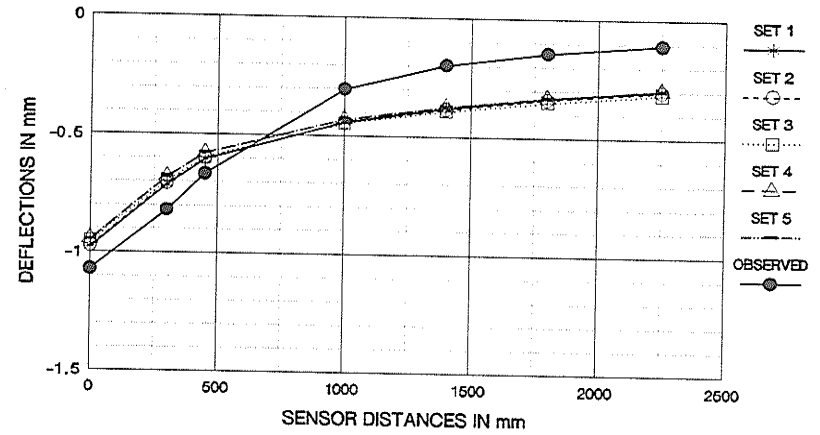
SASKATOON: RWY . 15-33:STA . 5 + 840 R.LOAD 733 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

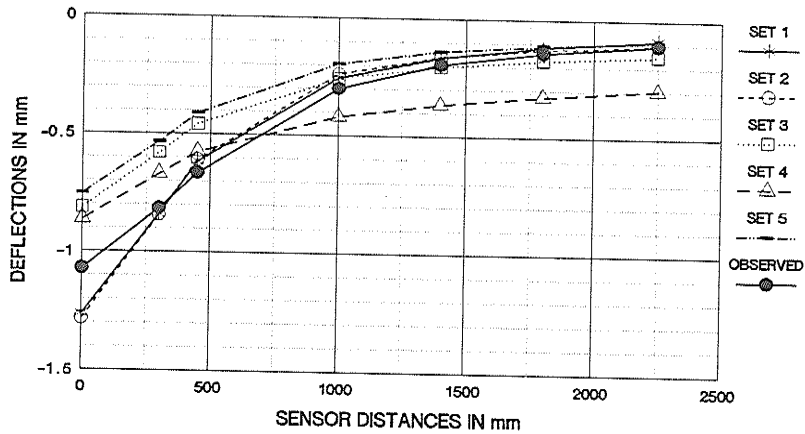
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

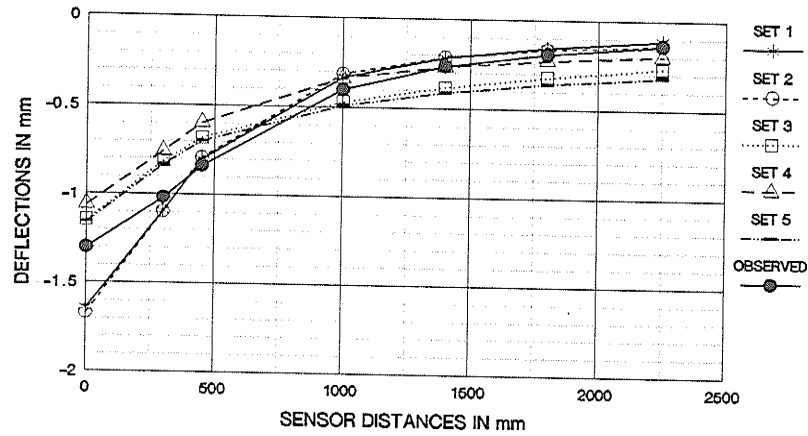


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

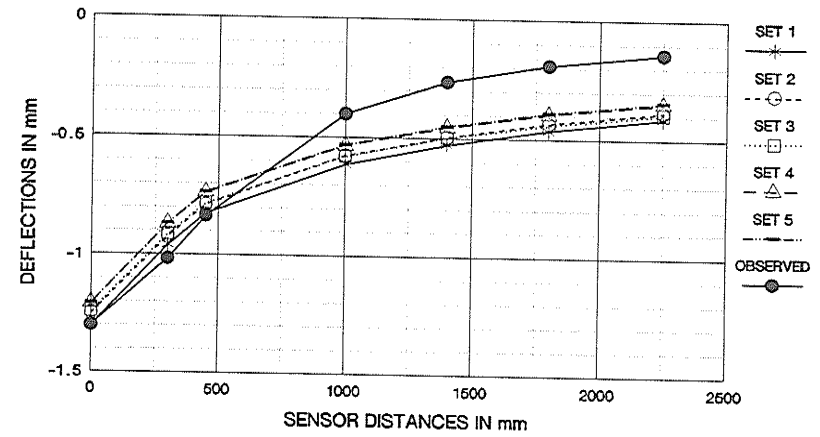
SASKATOON: RWY . 15-33:STA . 5 + 840 R:LOAD 1083 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

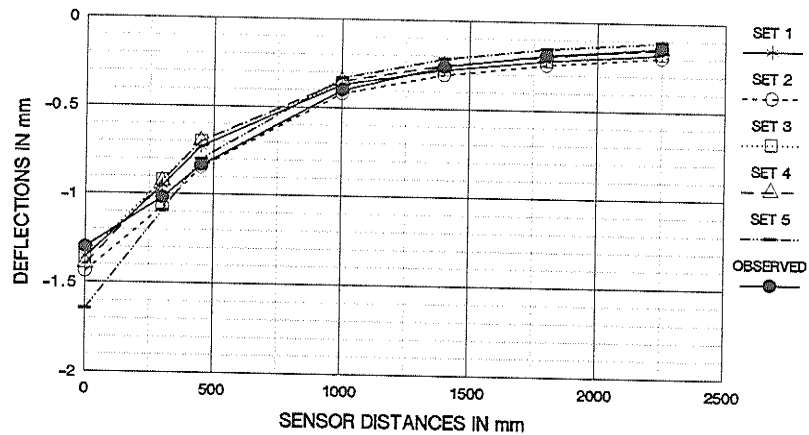
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

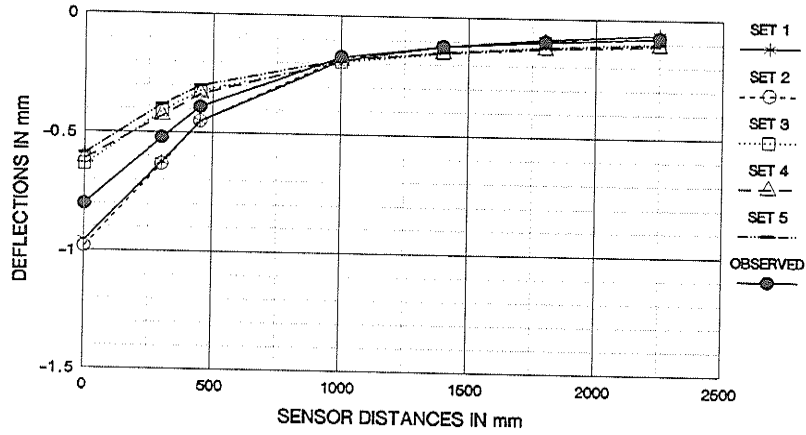


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

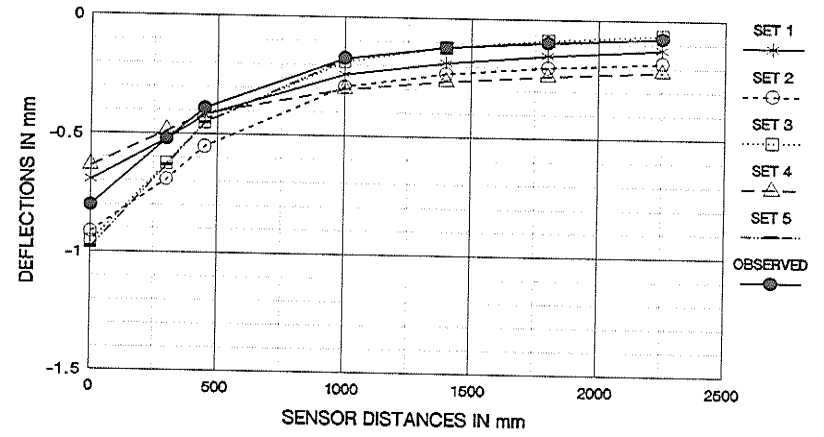
SASKATOON: RWY . 15-33:STA. 5 + 840 R.LOAD 1409 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

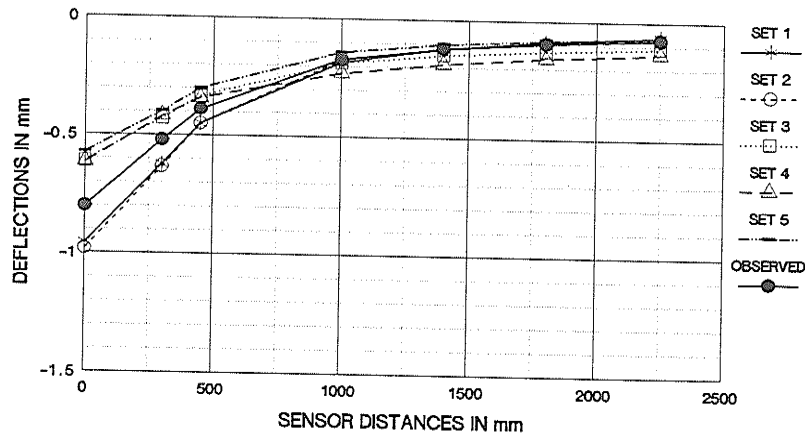
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

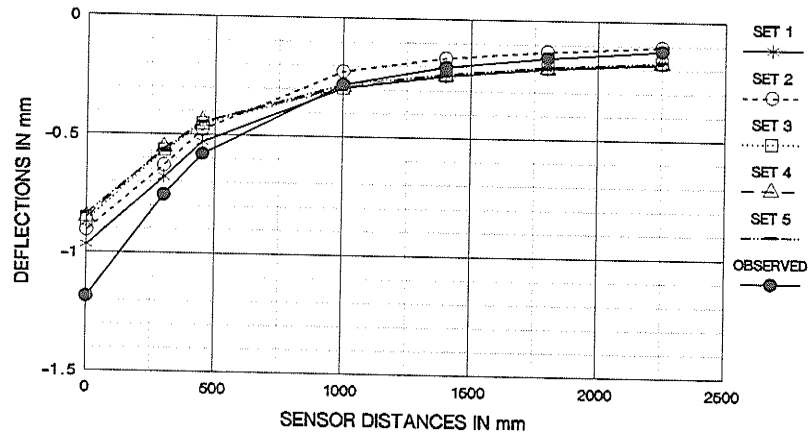


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

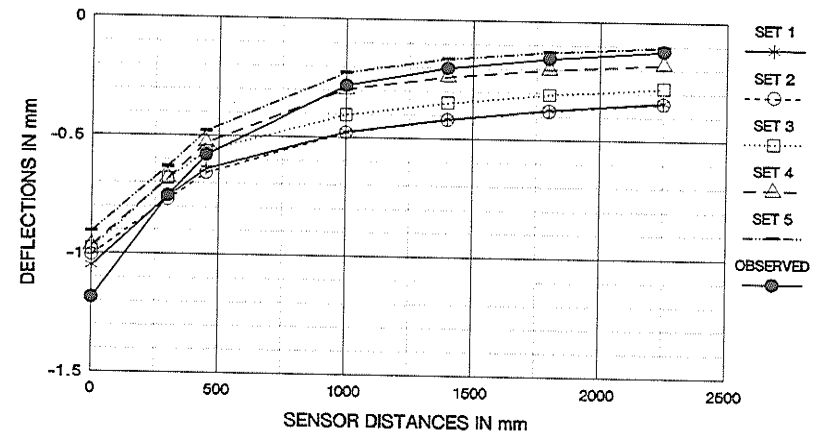
SASKATOON: RWY. 15-33:STA. 6 + 140 L:LOAD 789 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

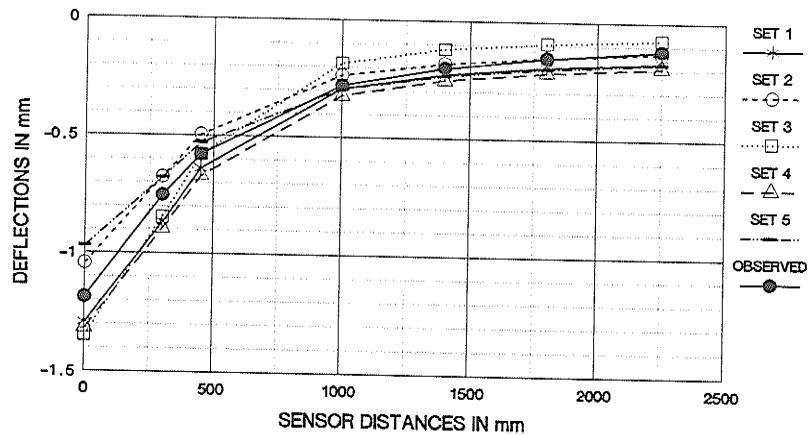
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

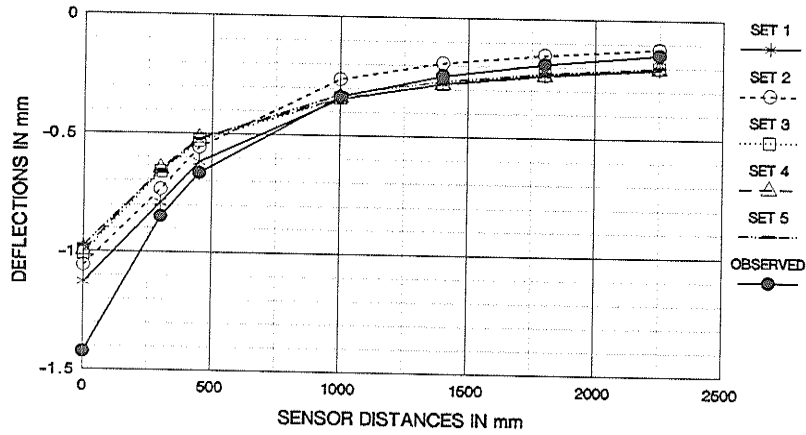


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

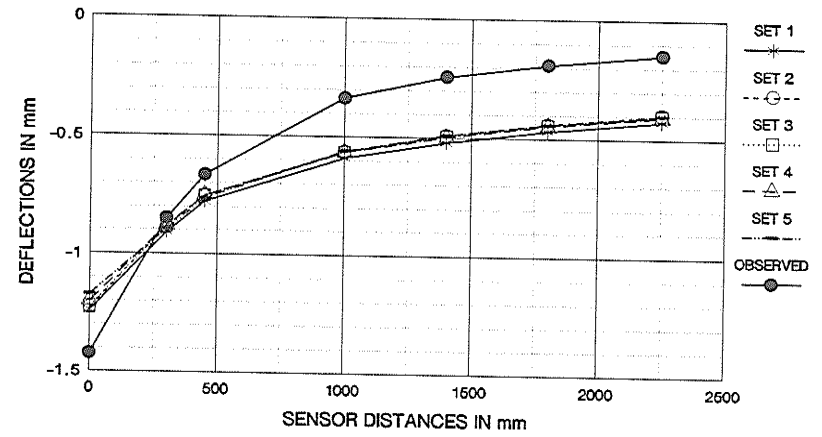
SASKATOON: RWY . 15-33:STA. 6 + 140 LLOAD 1249 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

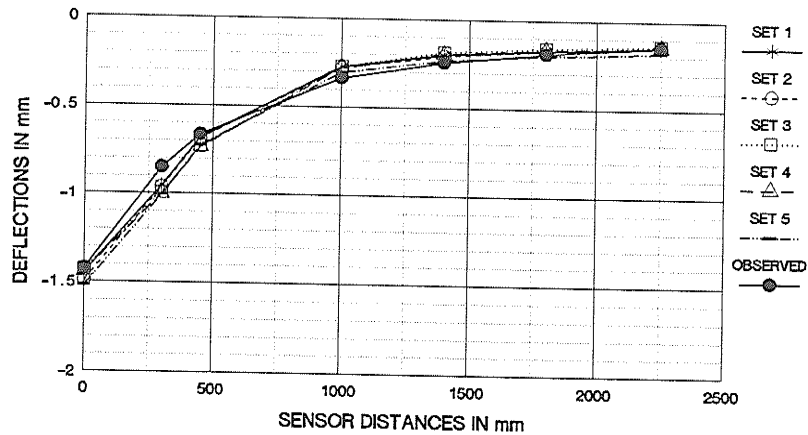
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

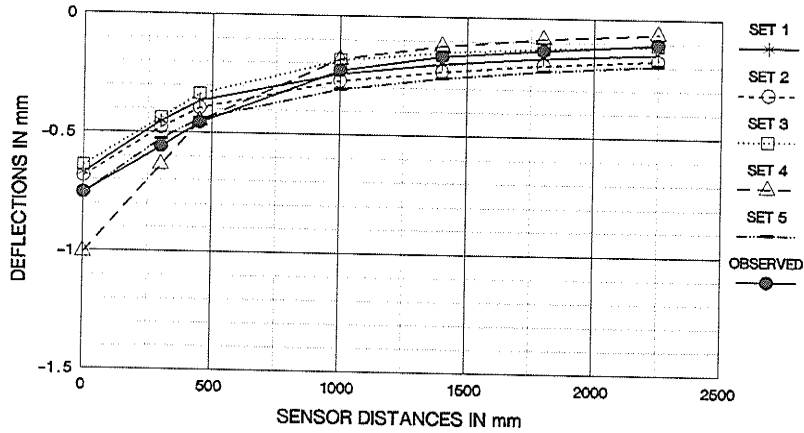


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

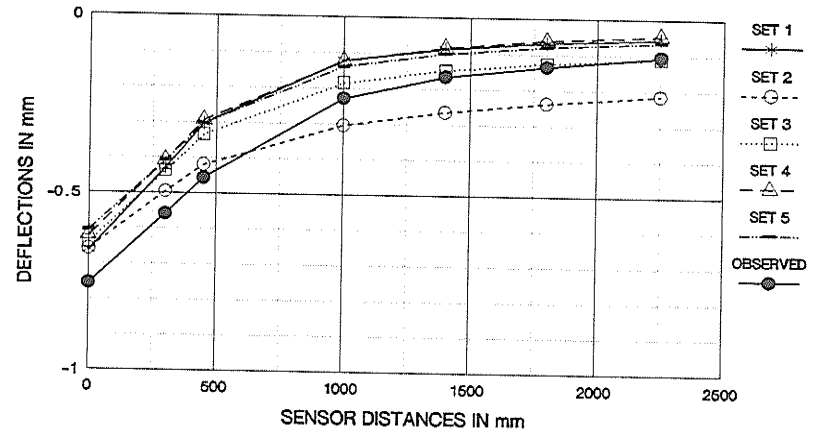
SASKATOON: RWY. 15-33:STA. 6 + 140 LLOAD 1457 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

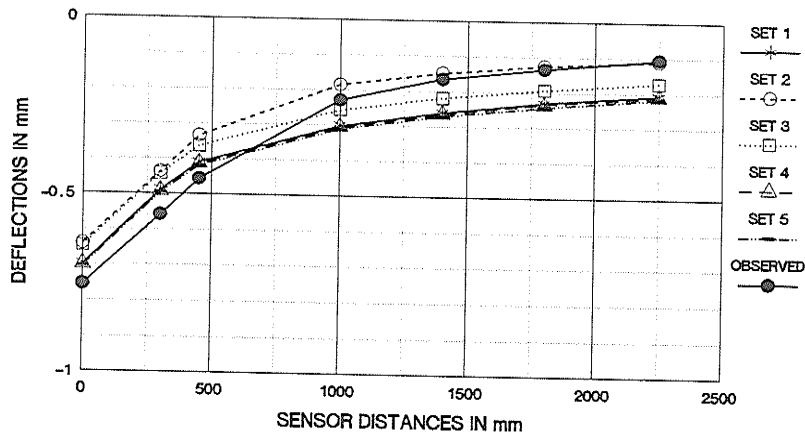
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

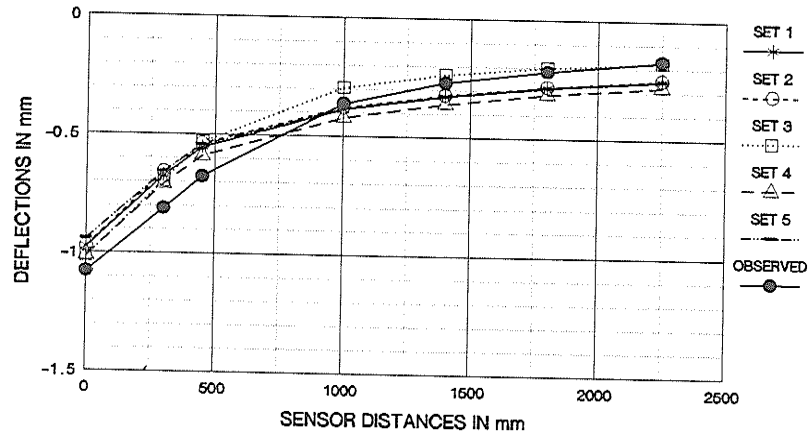


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

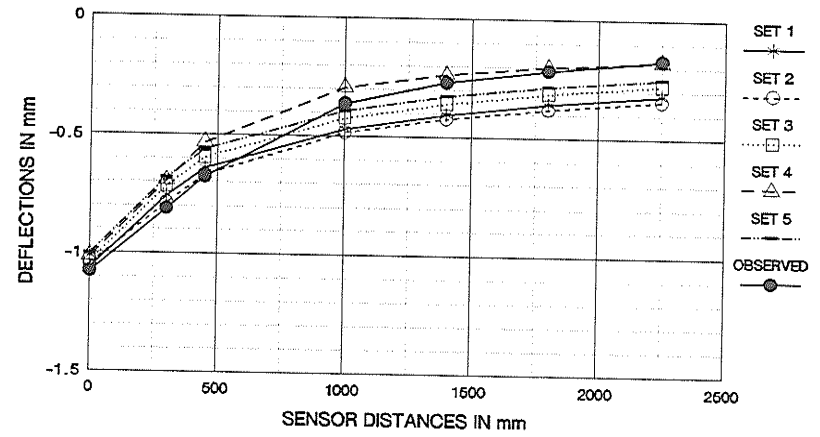
SASKATOON: RWY . 15-33: STA . 6 + 470 LLOAD 782 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

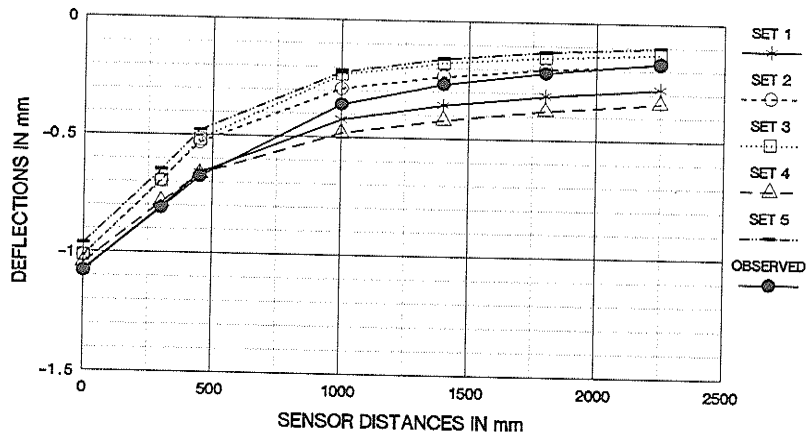
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

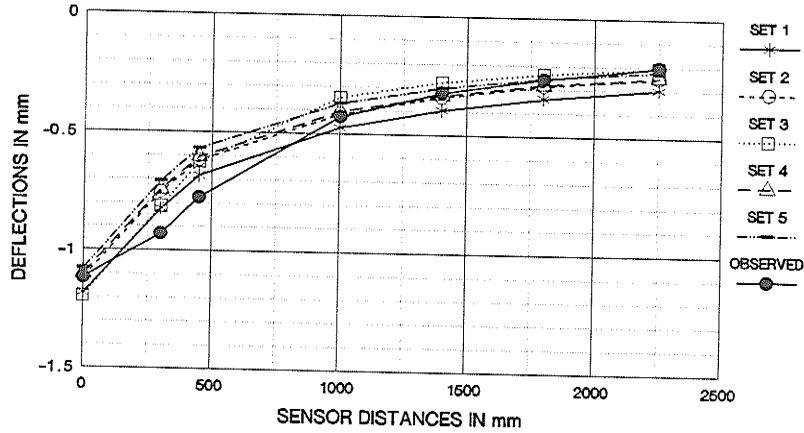


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

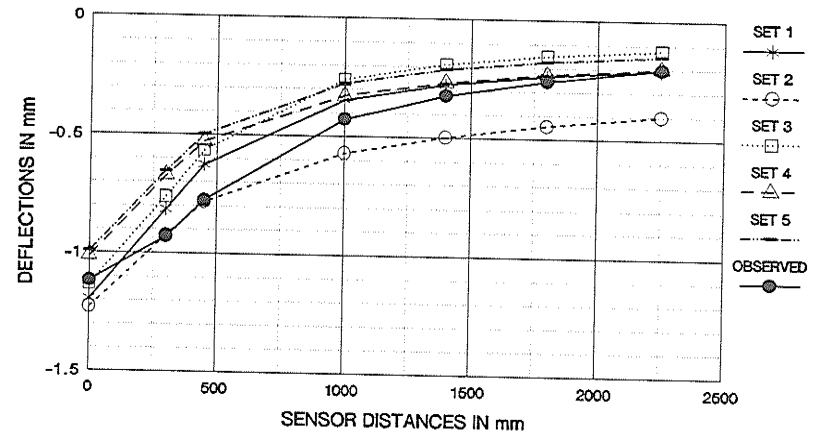
SASKATOON: RWY . 15-33:STA. 6 + 470 LLOAD 1243 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

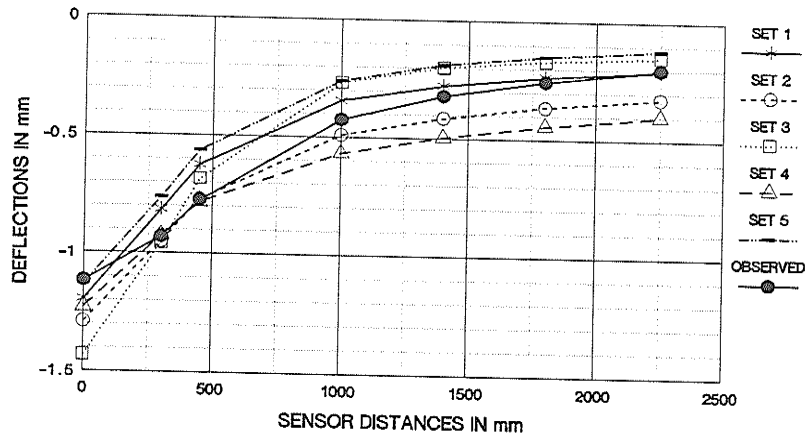
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



ANSYS FEM ANALYSIS : ISOTROPIC MODEL

SASKATOON: RWY . 15-33:STA. 6 + 470 LLOAD 1462 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS

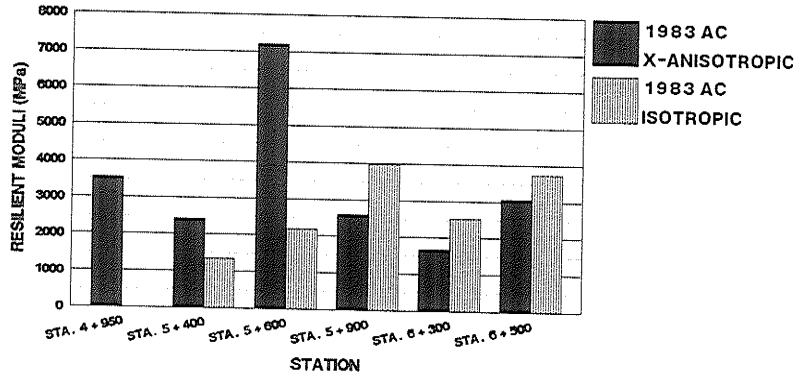
ANSYS FEM ANALYSIS

BRANDON: RWY . 08-26: PROFILE OF MODULI OF BOUND LAYERS

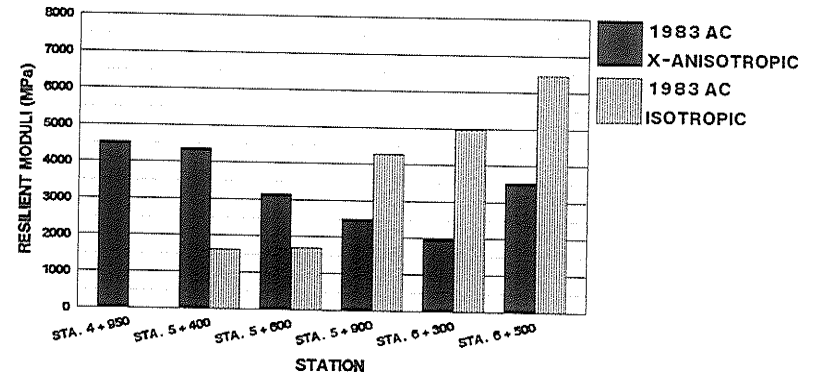
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

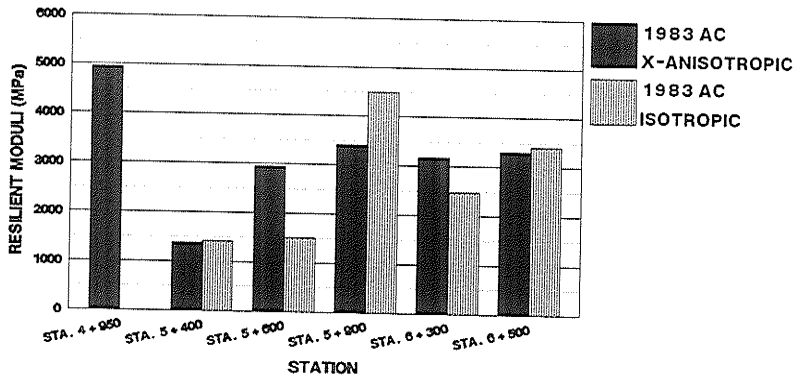
LOAD STEP 1: (600 kPa)



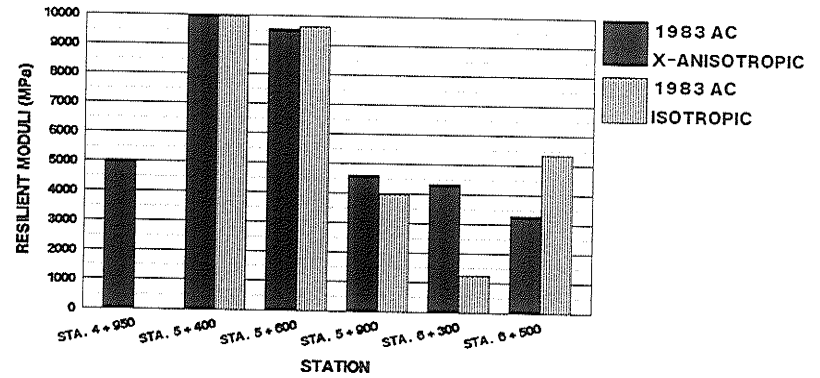
LOAD STEP 2: (800 kPa)



LOAD STEP 3: (1200 kPa)



LOAD STEP 4: (1400 kPa)



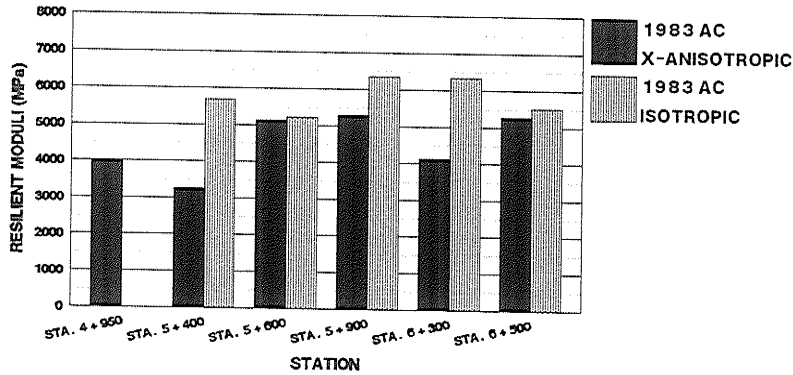
ANSYS FEM ANALYSIS

BRANDON: RWY . 08-26: PROFILE OF MODULI OF BOUND LAYERS

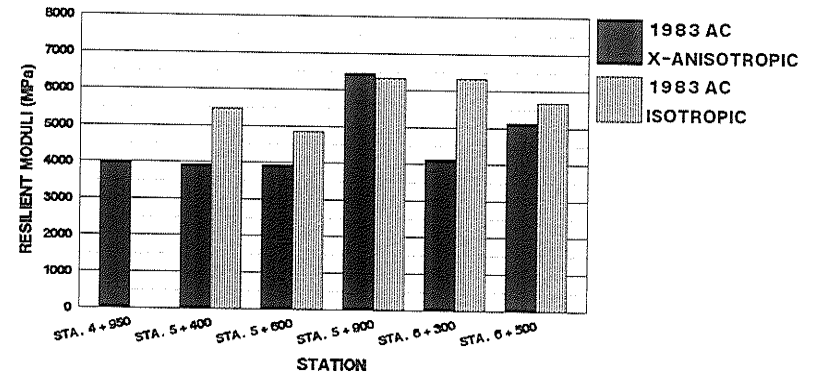
OPTIMIZING CRITERION: MAXIMUM DEFLECTION

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

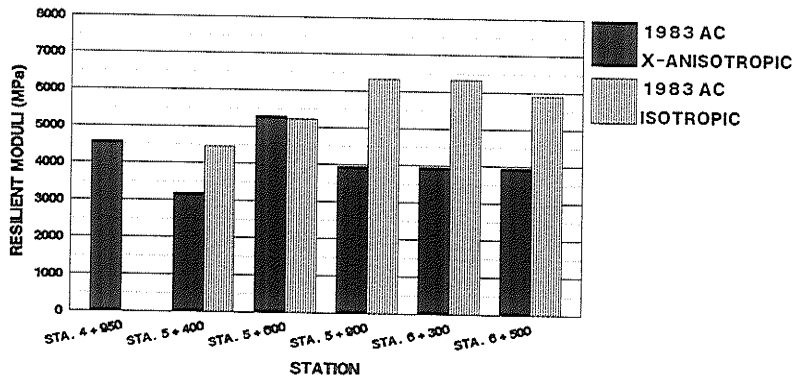
LOAD STEP 1: (600 kPa)



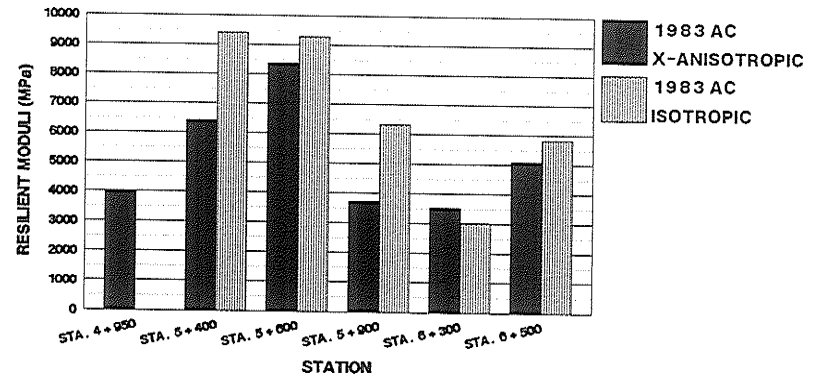
LOAD STEP 2: (800 kPa)



LOAD STEP 3: (1200 kPa)



LOAD STEP 4: (1400 kPa)



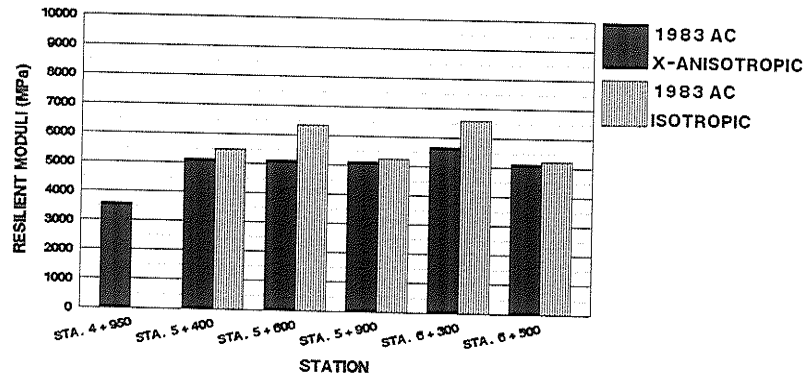
ANSYS FEM ANALYSIS

BRANDON: RWY. 08-26: PROFILE OF MODULI OF BOUND LAYERS

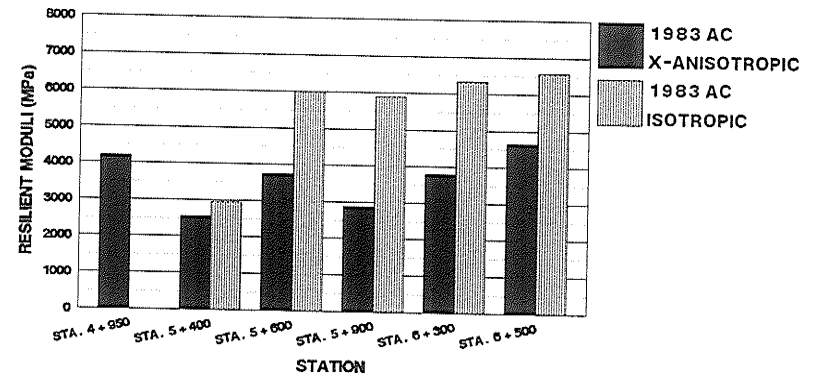
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

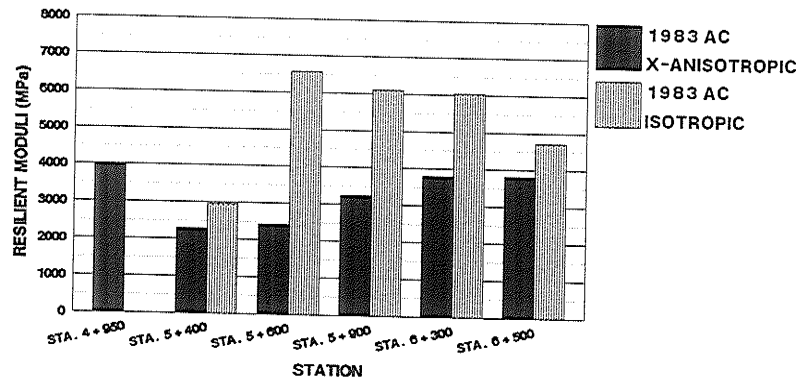
LOAD STEP 1: (600 kPa)



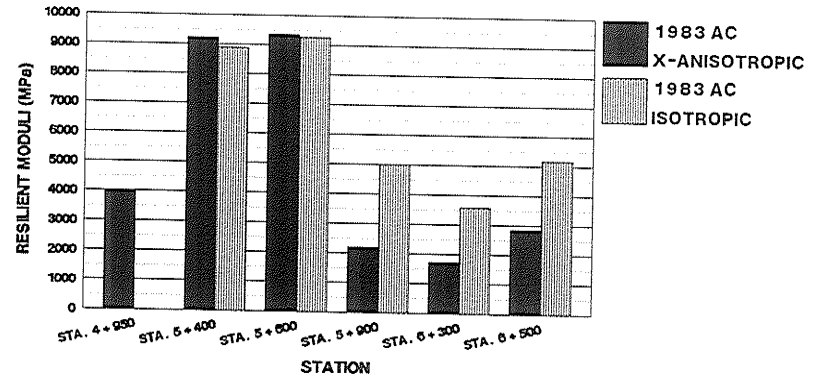
LOAD STEP 2: (800 kPa)



LOAD STEP 3: (1200 kPa)



LOAD STEP 4: (1400 kPa)



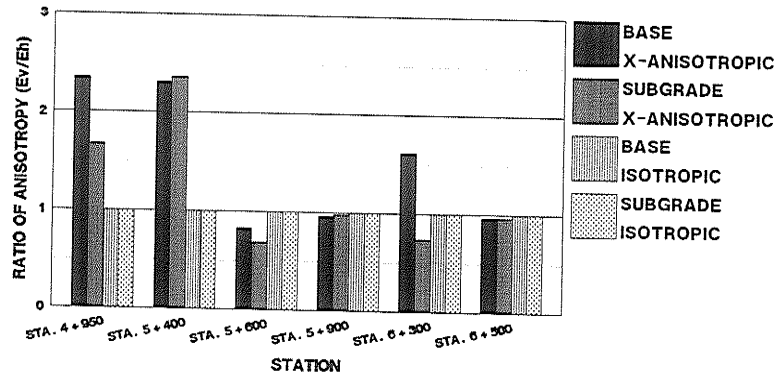
ANSYS FEM ANALYSIS

BRANDON: RWY . 08-26: PROFILE OF MODULI OF UNBOUND LAYERS

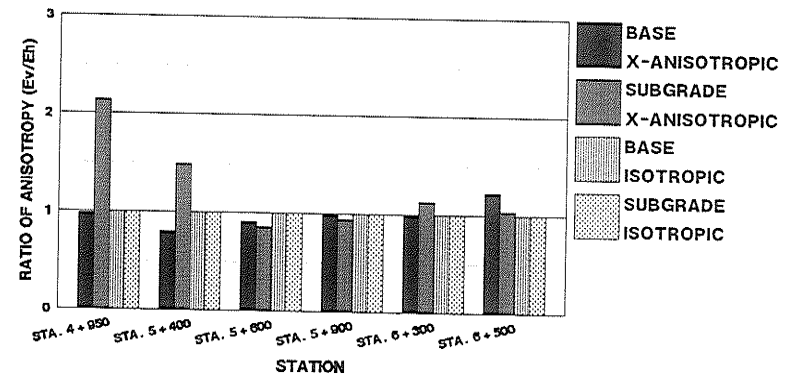
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

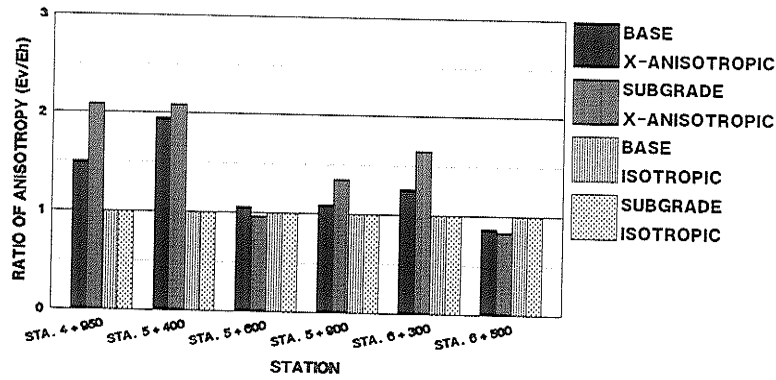
LOAD STEP 1: (600 kPa)



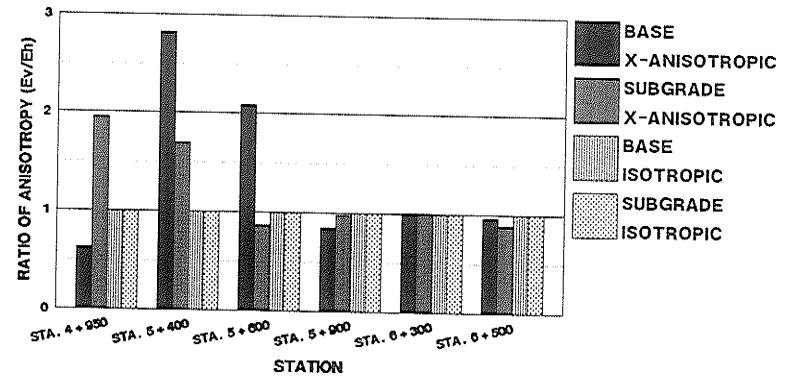
LOAD STEP 2: (800 kPa)



LOAD STEP 3: (1200 kPa)



LOAD STEP 4: (1400 kPa)



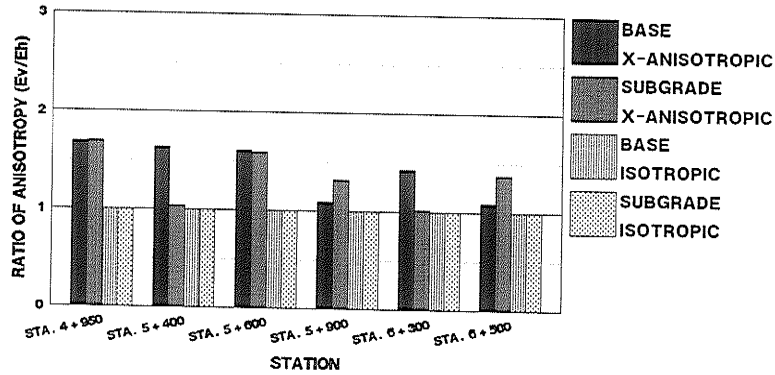
ANSYS FEM ANALYSIS

BRANDON: RWY . 08-26: PROFILE OF MODULI OF UNBOUND LAYERS

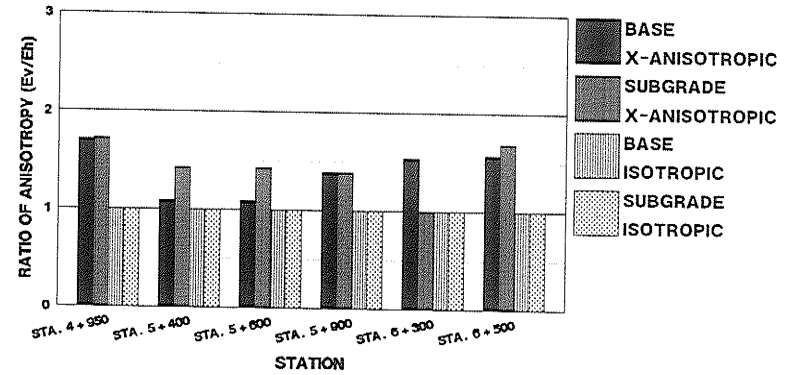
OPTIMIZING CRITERION: MAXIMUM DEFLECTION

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

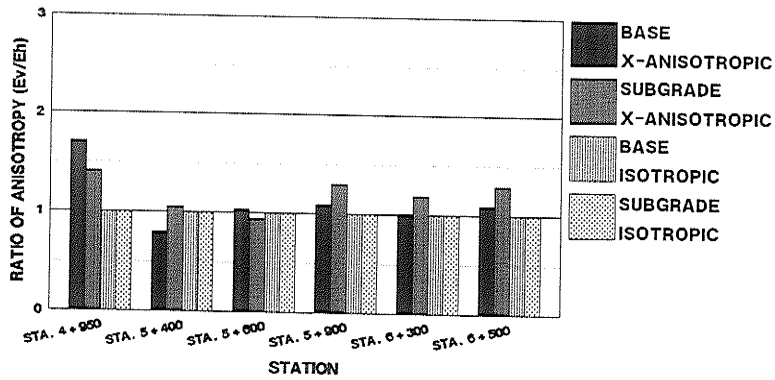
LOAD STEP 1: (600 kPa)



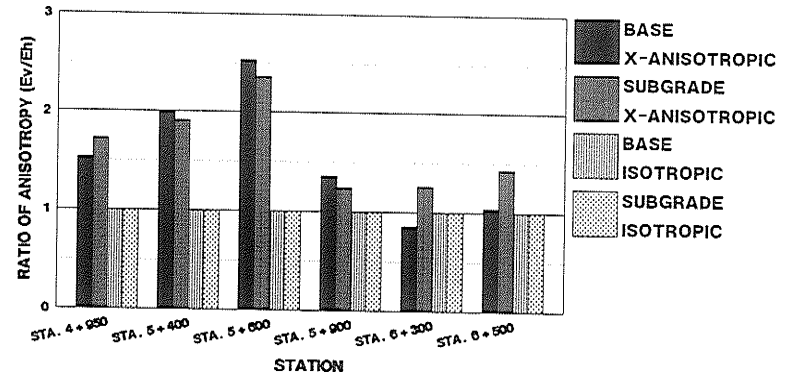
LOAD STEP 2: (800 kPa)



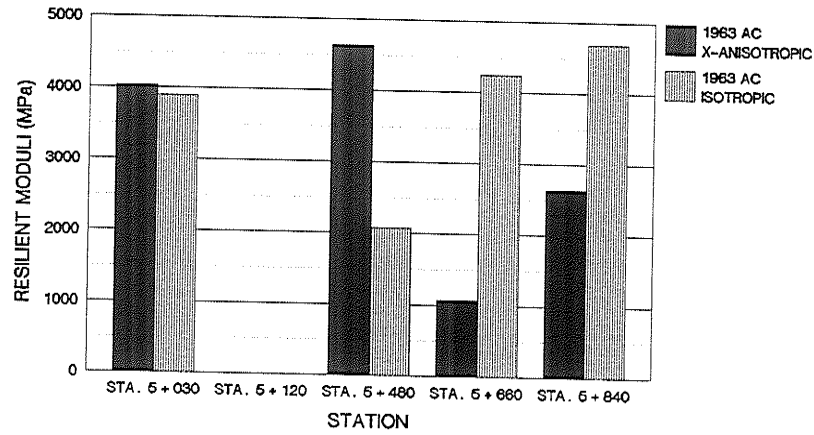
LOAD STEP 3: (1200 kPa)



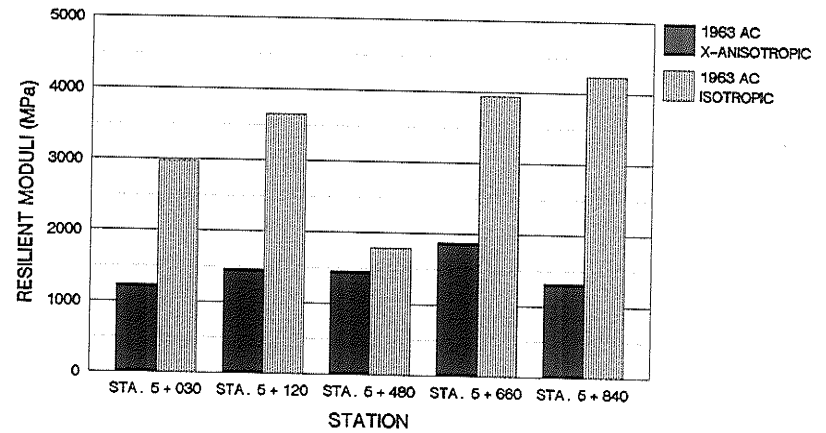
LOAD STEP 4: (1400 kPa)



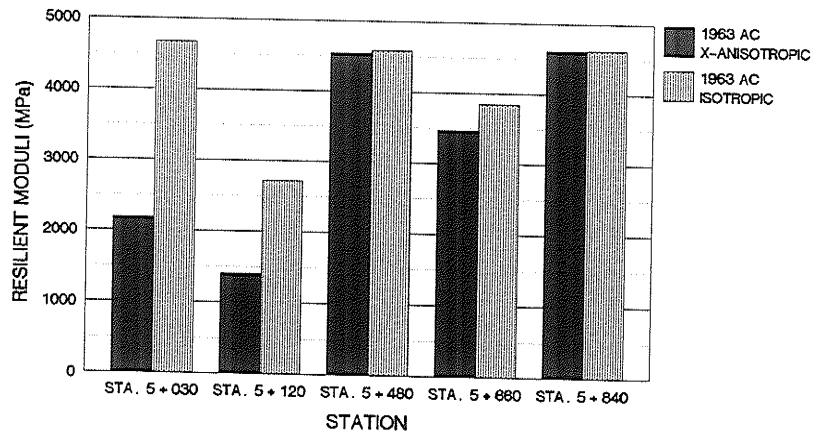
LOAD STEP 1: (500 kPa)



LOAD STEP 2: (750 kPa)



LOAD STEP 3: (1000 kPa)



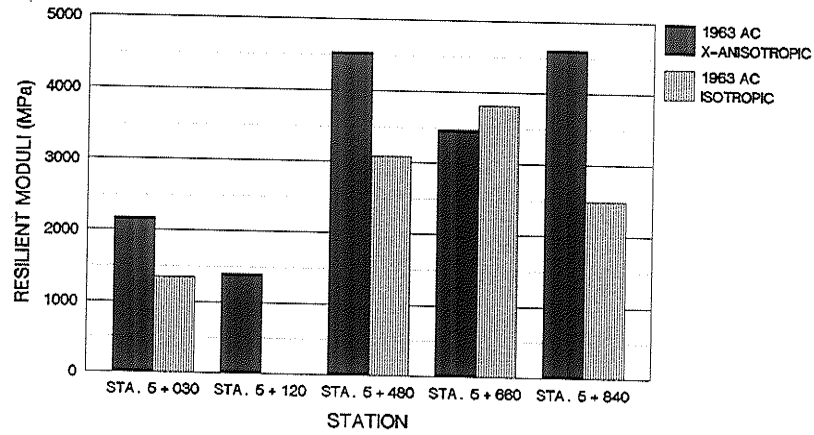
ANSYS FEM ANALYSIS

ST. ANDREWS RWY. 13-31: PROFILE OF MODULI OF BOUND MATERIALS

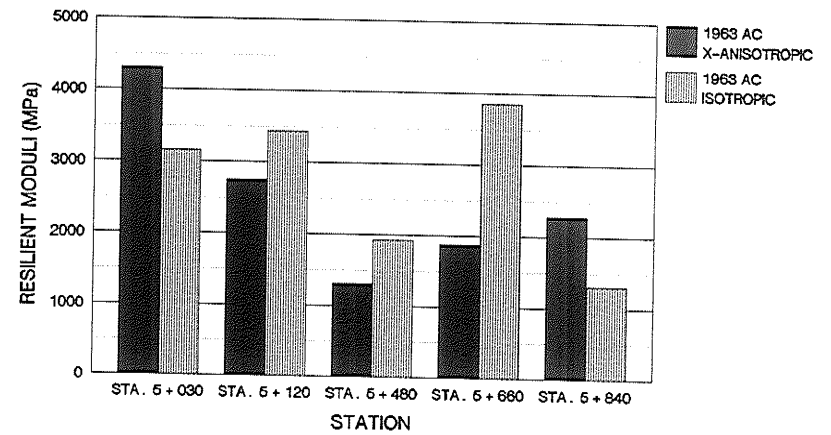
OPTIMIZING CRITERION: "AREA" OF BASIN

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

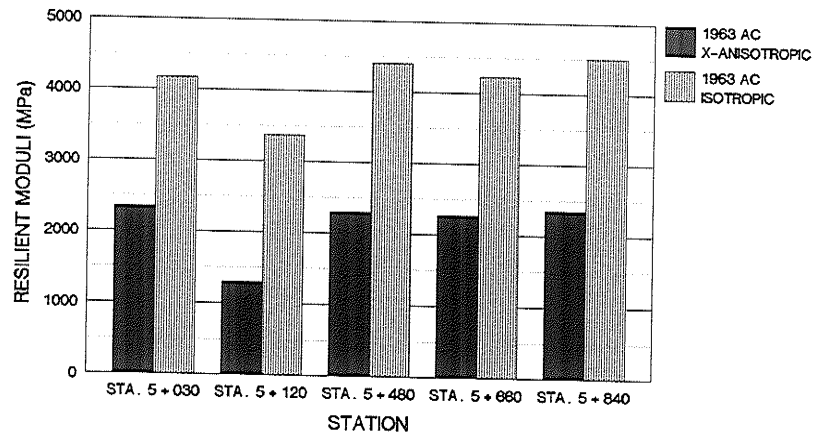
LOAD STEP 1: (500 kPa)



LOAD STEP 2: (750 kPa)



LOAD STEP 3: (1000 kPa)



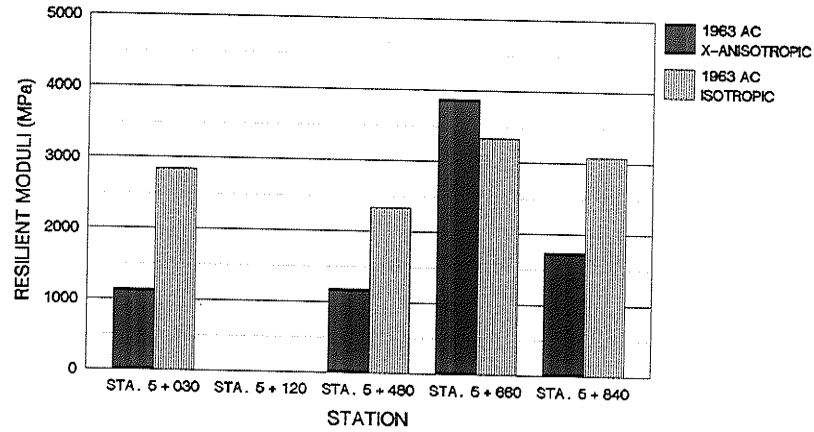
ANSYS FEM ANALYSIS

ST. ANDREWS RWY. 13-31: PROFILE OF MODULI OF BOUND MATERIALS

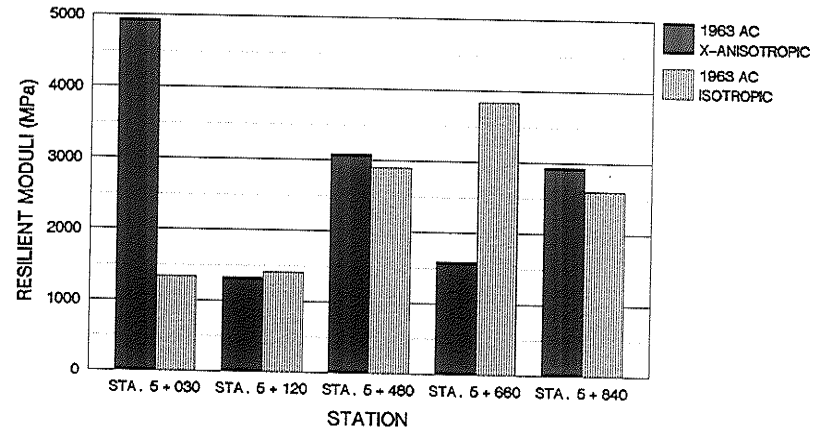
OPTIMIZING CRITERION: MAXIMUM DEFLECTION

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

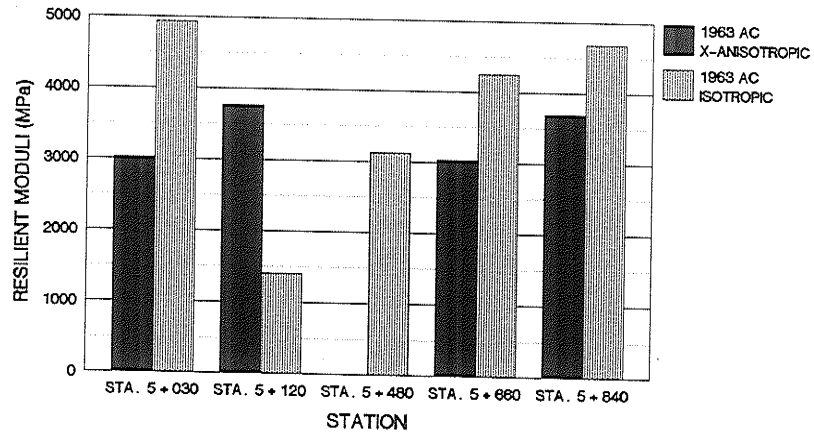
LOAD STEP 1: (500 kPa)



LOAD STEP 2: (750 kPa)



LOAD STEP 3: (1000 kPa)



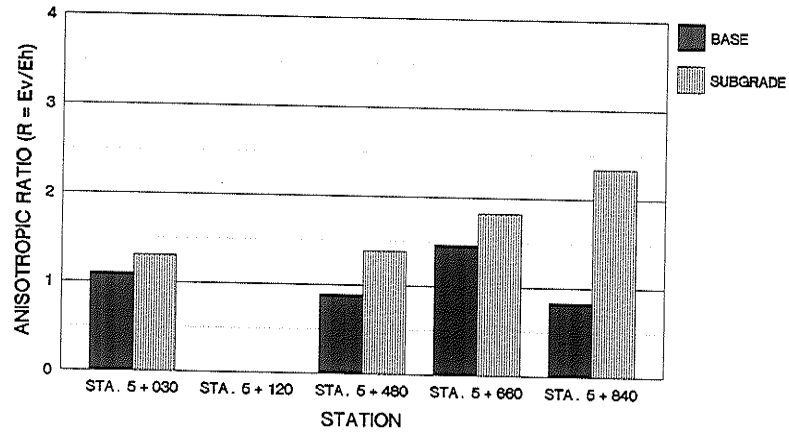
ANSYS FEM ANALYSIS

STANDREWS RWY. 13-31: PROFILE OF MODULI OF BOUND MATERIALS

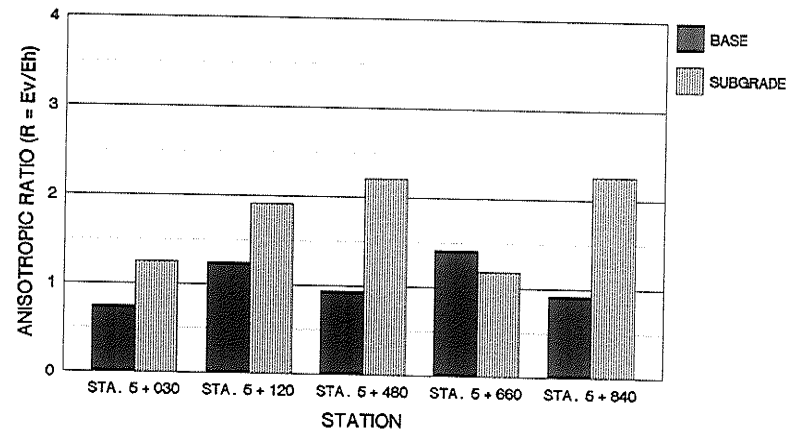
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

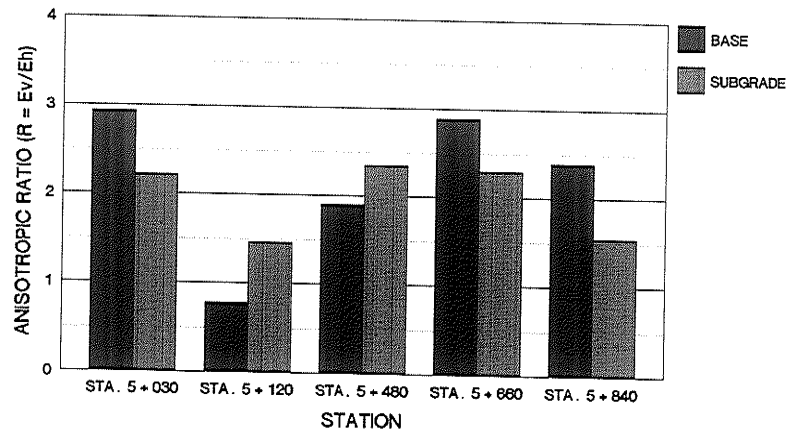
LOAD STEP 1: (500 kPa)



LOAD STEP 2: (750 kPa)



LOAD STEP 3: (1000 kPa)



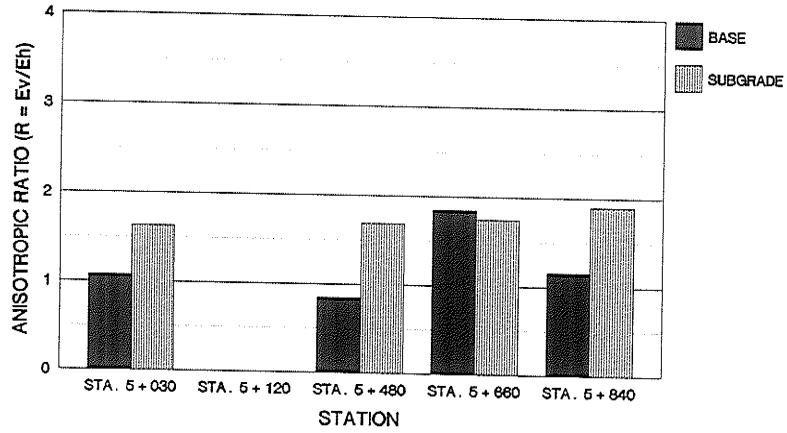
ANSYS FEM ANALYSIS

ST. ANDREWS RWY. 13-31; PROFILE OF MODULI OF UNBOUND MATERIALS

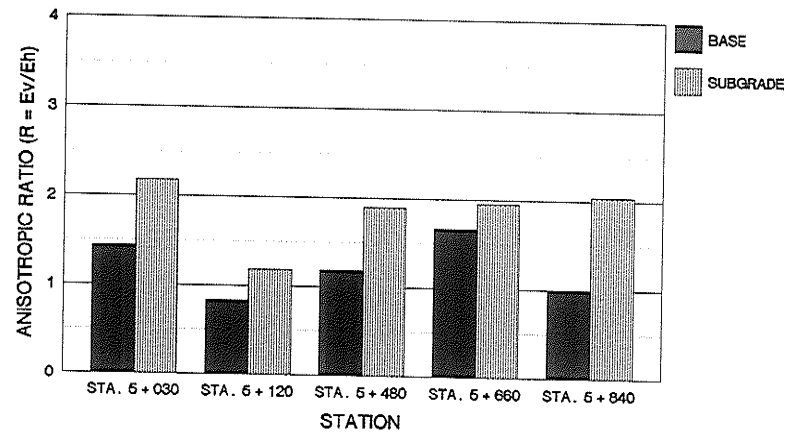
OPTIMIZING CRITERION: "AREA" OF BASIN

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

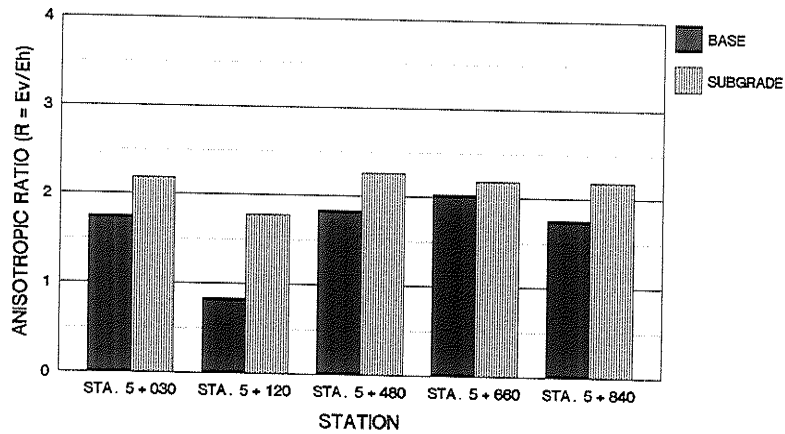
LOAD STEP 1: (500 kPa)



LOAD STEP 2: (750 kPa)



LOAD STEP 3: (1000 kPa)



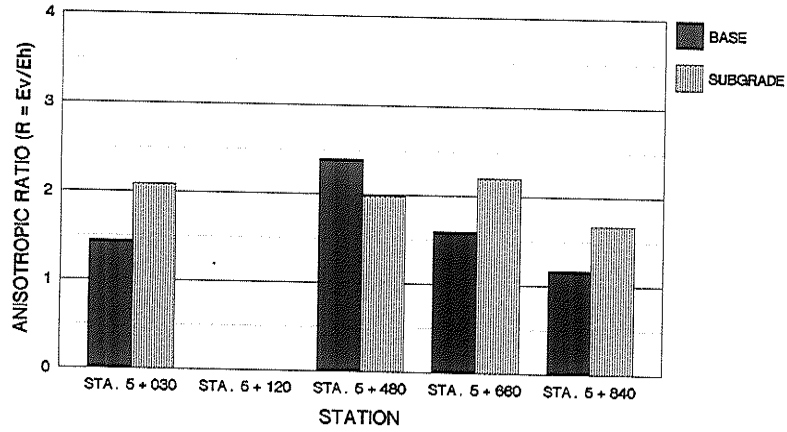
ANSYS FEM ANALYSIS

ST. ANDREWS RWY. 13-31: PROFILE OF MODULI OF UNBOUND MATERIALS

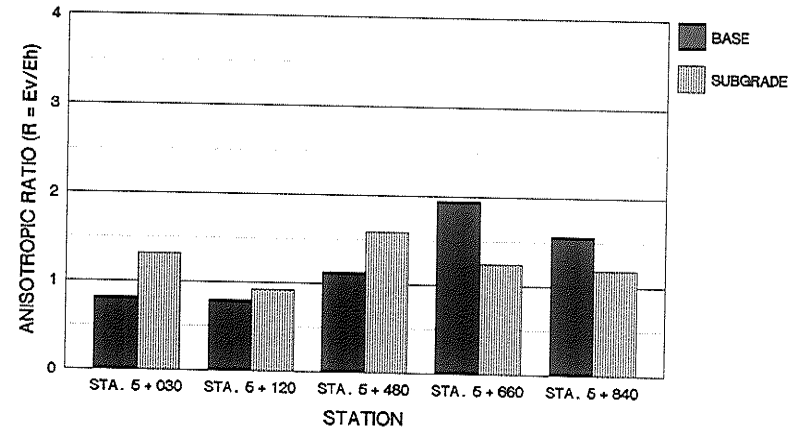
OPTIMIZING CRITERION: MAXIMUM DEFLECTION

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

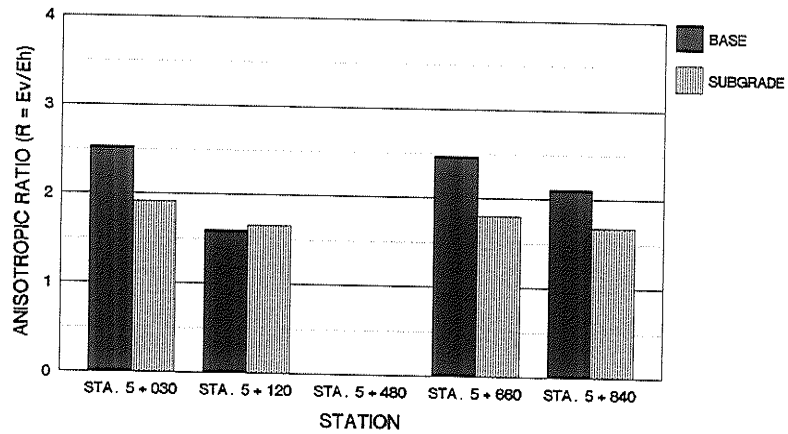
LOAD STEP 1: (500 kPa)



LOAD STEP 2: (750 kPa)



LOAD STEP 3: (1000 kPa)



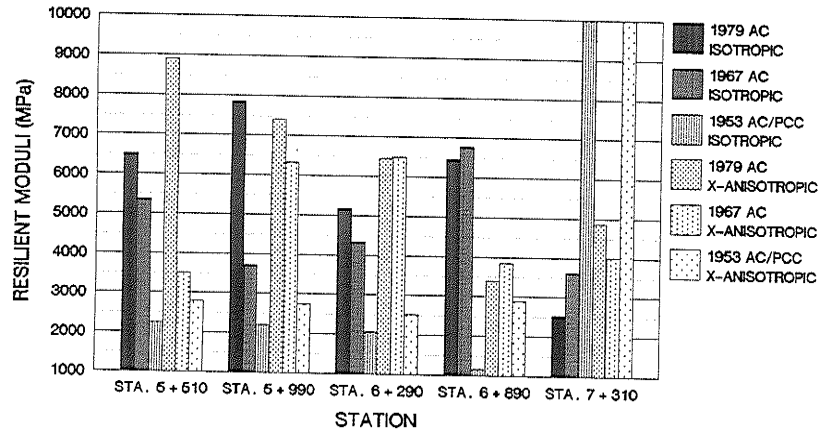
ANSYS FEM ANALYSIS

STANDREWS RWY. 13-31: PROFILE OF MODULI OF UNBOUND MATERIALS

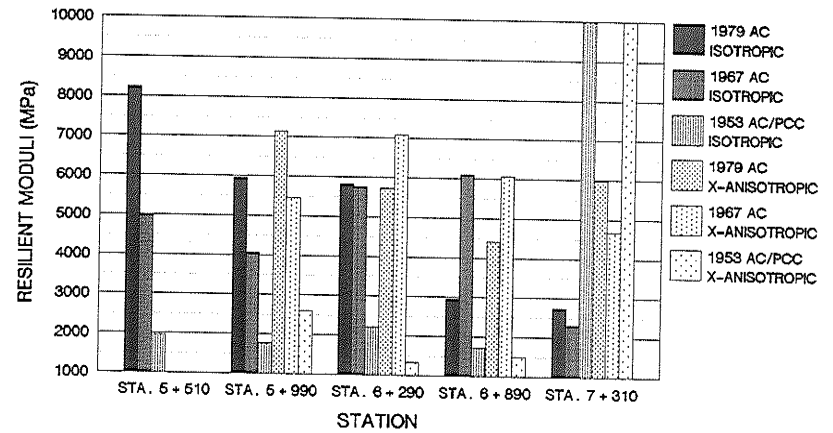
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

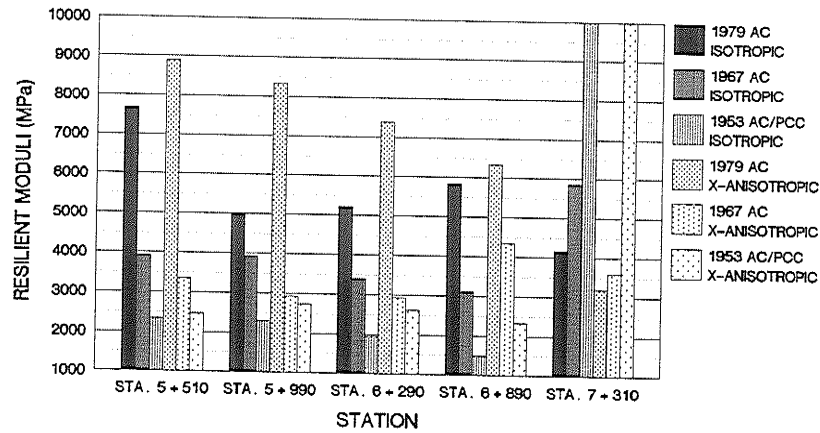
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3 (1500 kPa)



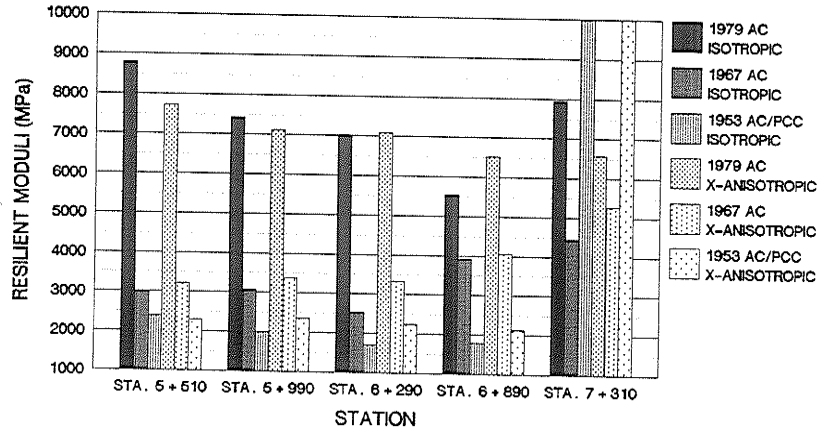
ANSYS FEM ANALYSIS

REGINA RWY. 12-30: PROFILE OF MODULI OF BOUND MATERIALS

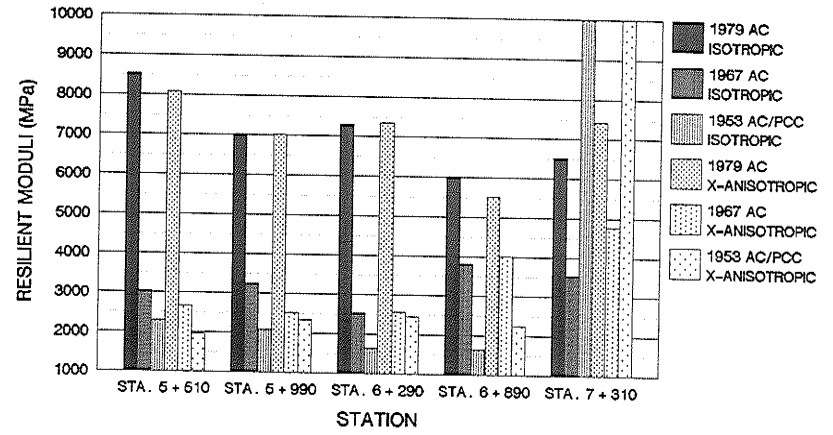
OPTIMIZING CRITERION: "AREA" OF BASIN

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

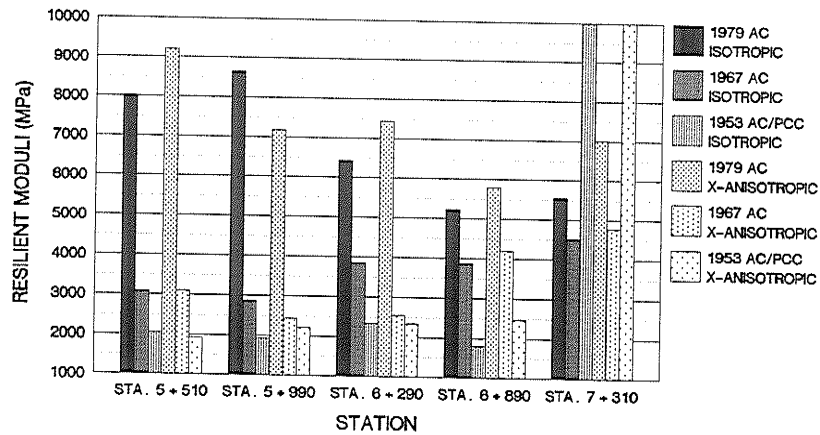
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3: (1500 kPa)



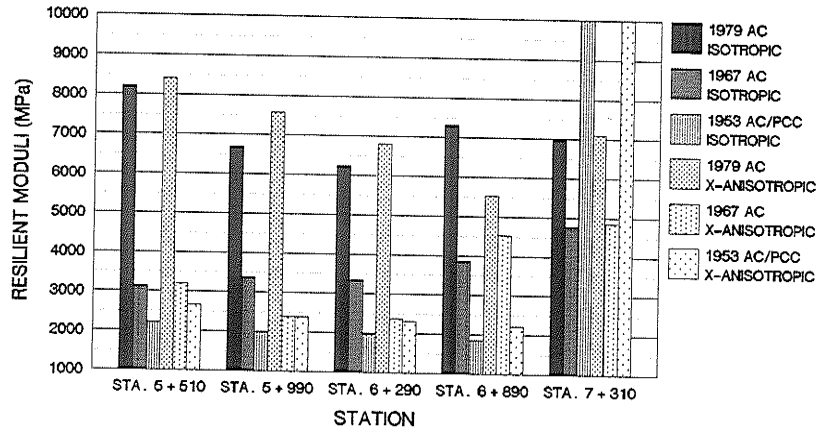
ANSYS FEM ANALYSIS

REGINA RWY. 12-30: PROFILE OF MODULI OF BOUND MATERIALS

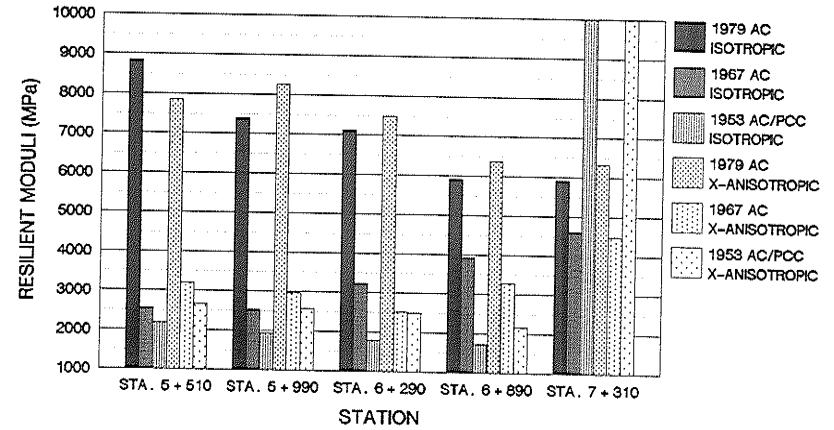
OPTIMIZING CRITERION: MAXIMUM DEFLECTION

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

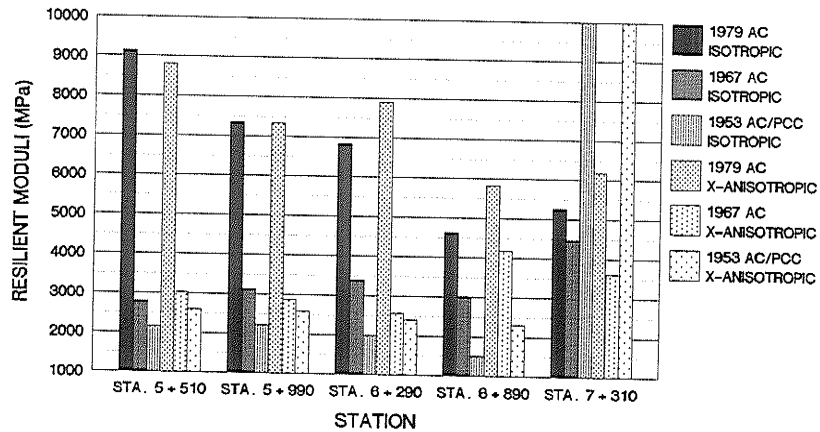
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3: (1500 kPa)



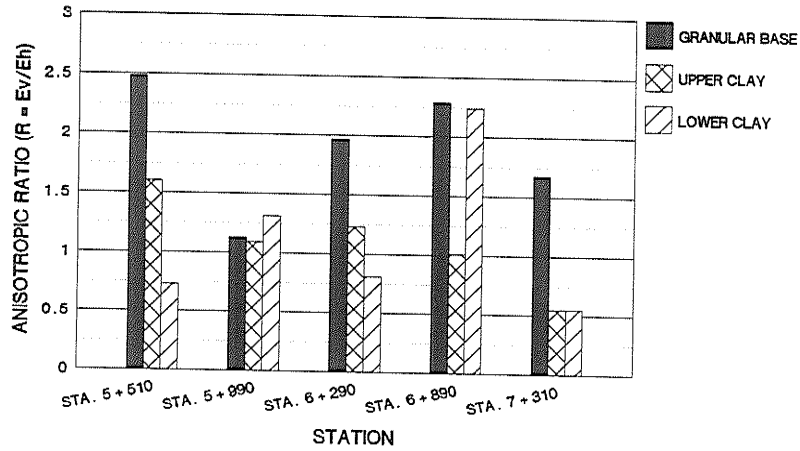
ANSYS FEM ANALYSIS

REGINA RWY. 12-30: PROFILE OF MODULI OF BOUND MATERIALS

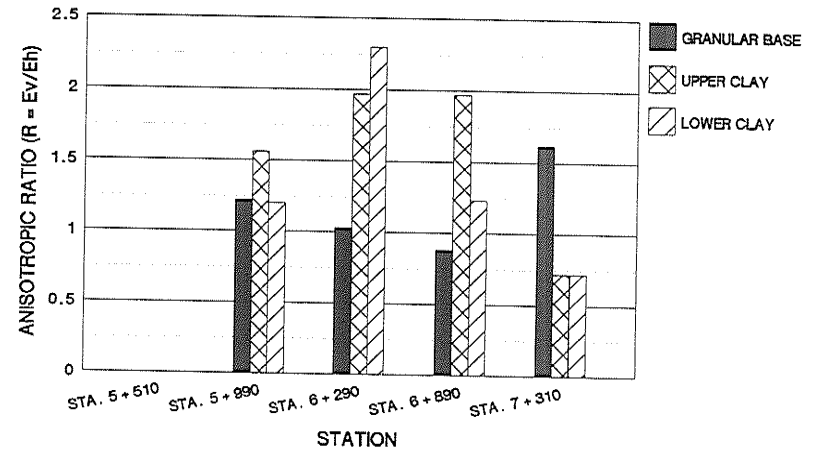
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

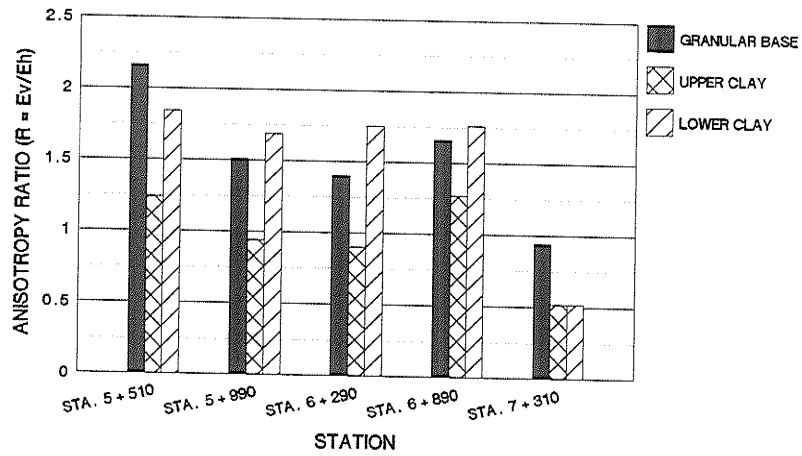
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 3 (1500 kPa)

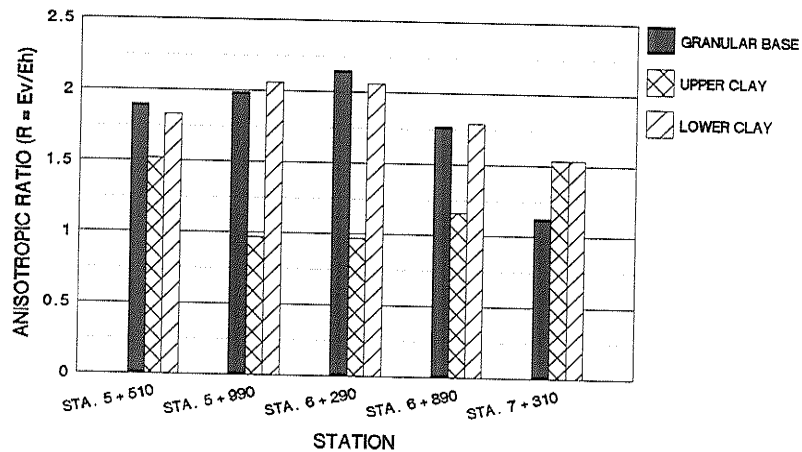


ANSYS FEM ANALYSIS: X-ANISOTROPIC MODEL

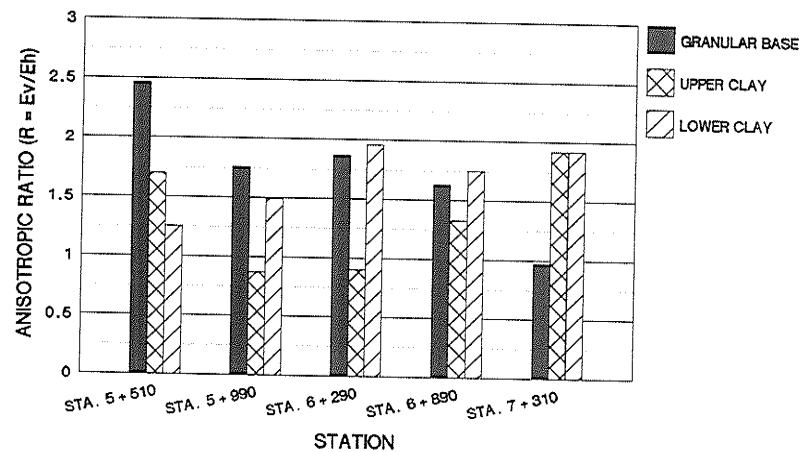
REGINA RWY. 12-30: ANISOTROPIC RATIOS IN UNBOUND MATERIALS

OPTIMIZING CRITERION: "AREA" OF BASIN

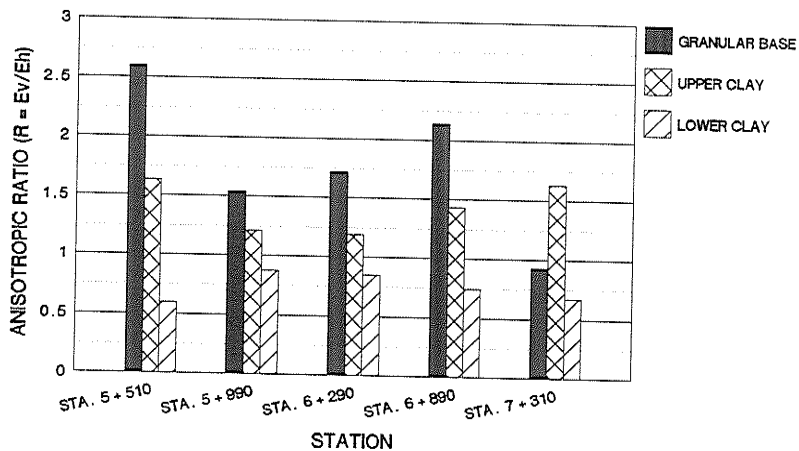
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 3 (1500 kPa)

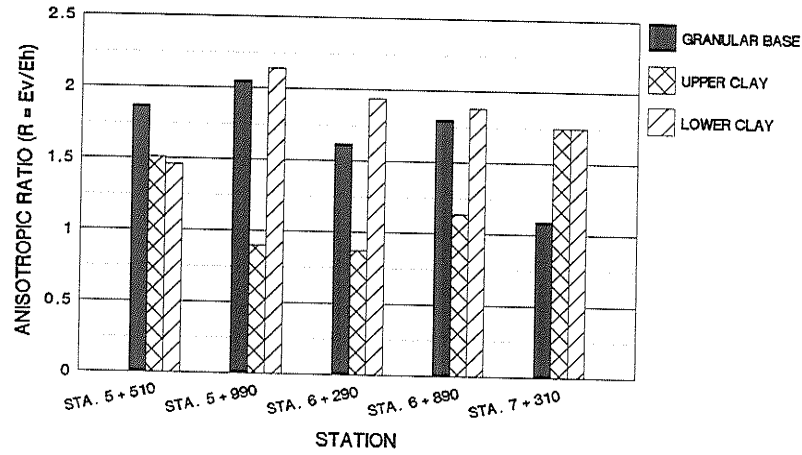


ANSYS FEM ANALYSIS: X-ANISOTROPIC MODEL

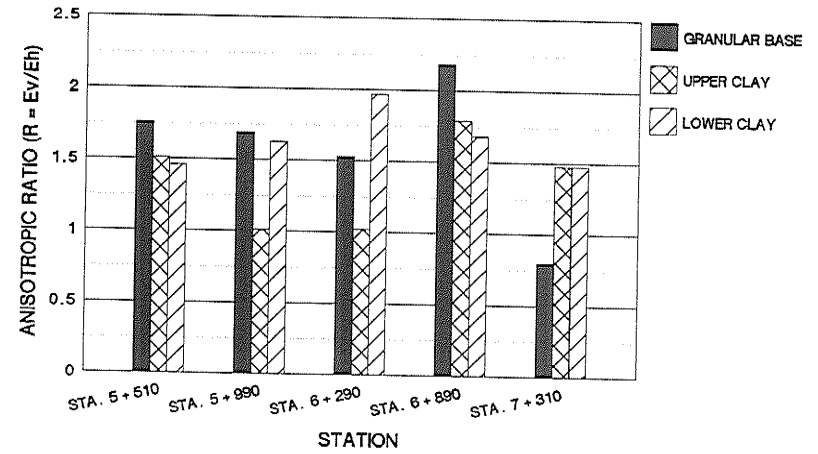
REGINA RWY. 12-30: ANISOTROPIC RATIOS IN UNBOUND MATERIALS

OPTIMIZING CRITERION: MAXIMUM DEFLECTION

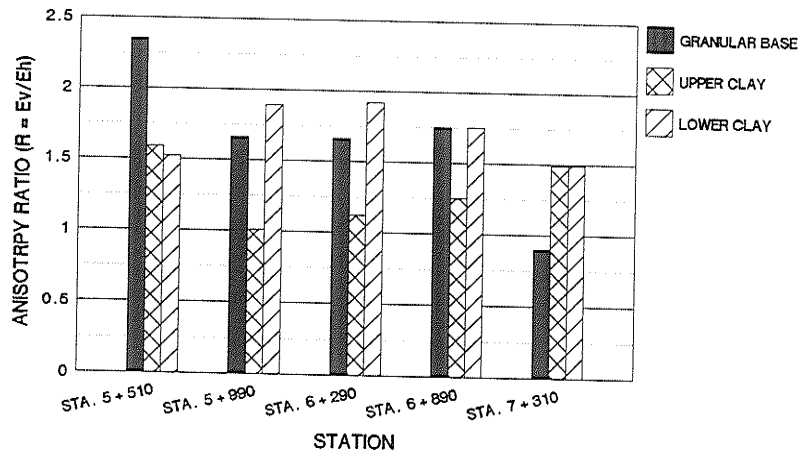
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 3 (1500 kPa)

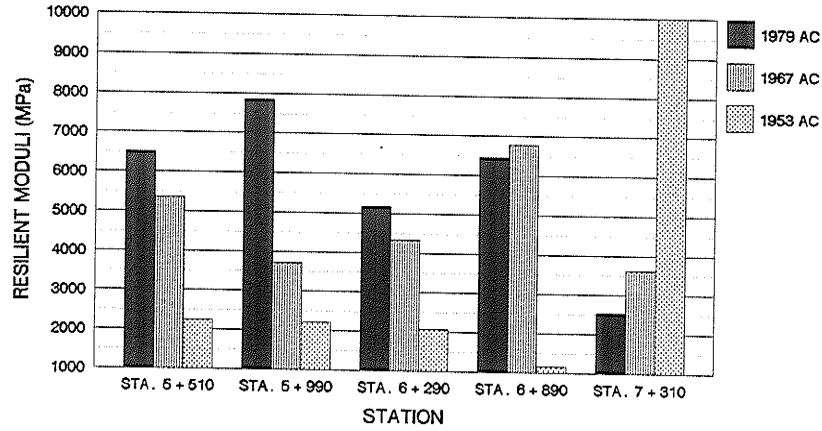


ANSYS FEM ANALYSIS: X-ANISOTROPIC MODEL

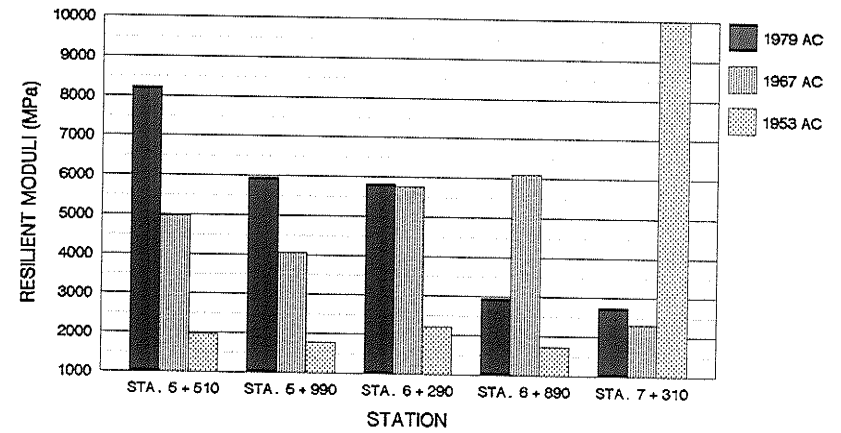
REGINA RWY. 12-30: ANISOTROPIC RATIOS IN UNBOUND MATERIALS

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

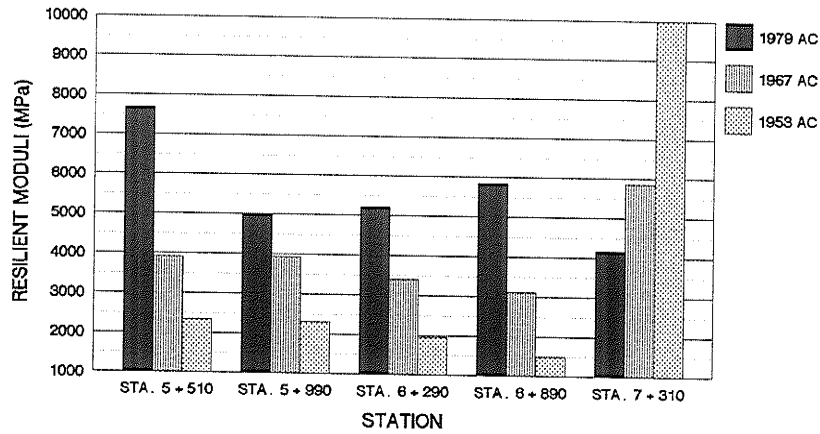
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3 (1500 kPa)

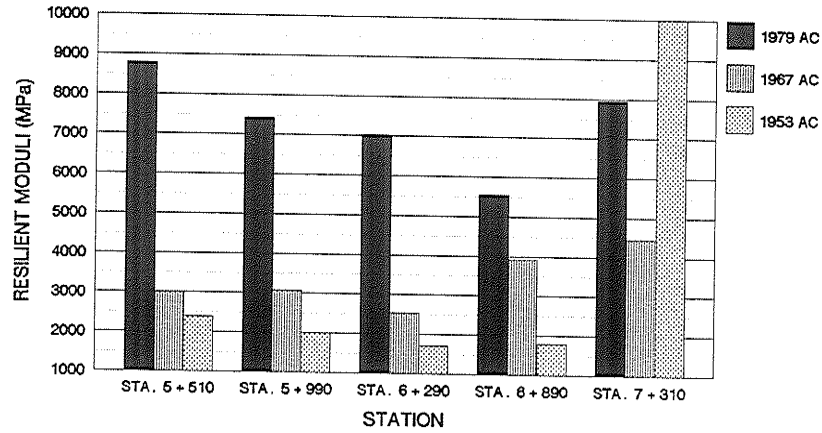


ANSYS FEM ANALYSIS: ISOTROPIC MODEL

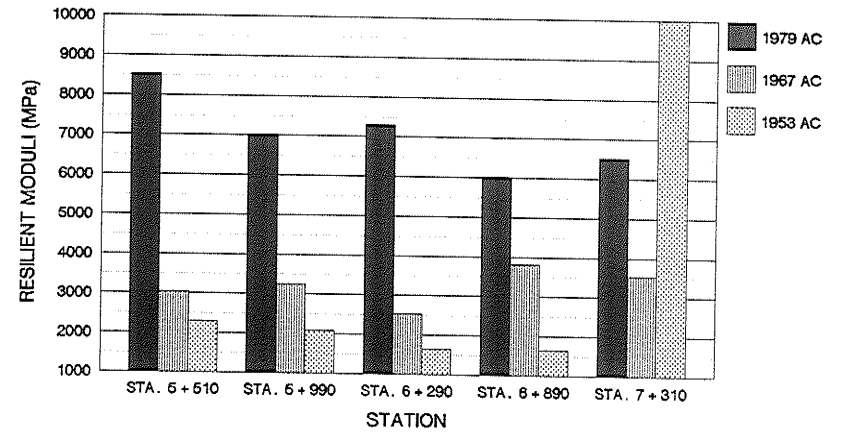
REGINA RWY. 12-30: PROFILE OF AC MODULI

OPTIMIZING CRITERION: "AREA" OF BASIN

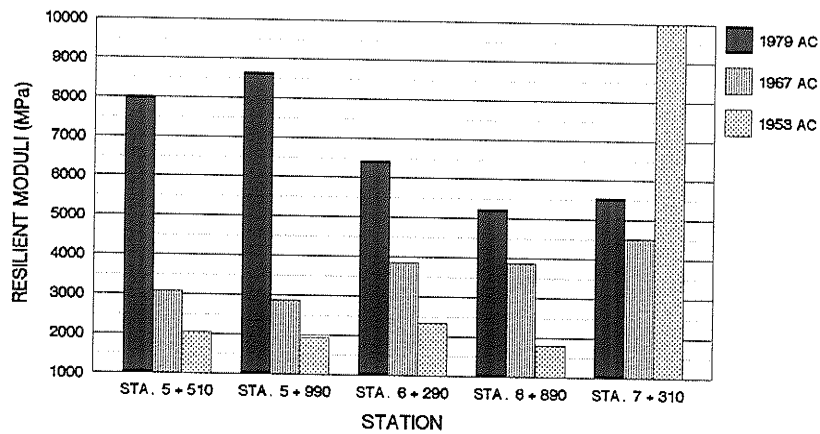
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3: (1500 kPa)

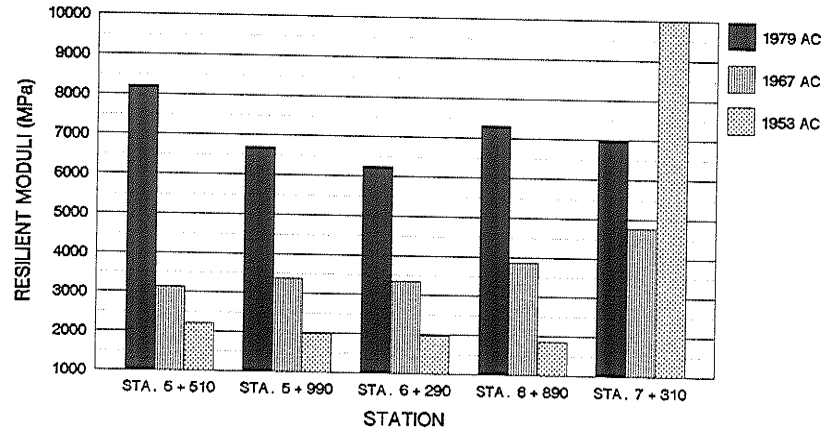


ANSYS FEM ANALYSIS: ISOTROPIC MODEL

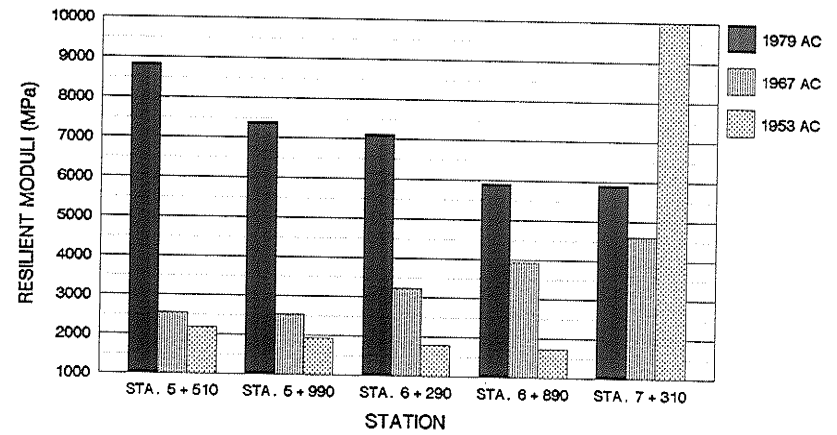
REGINA RWY. 12-30: PROFILE OF AC MODULI

OPTIMIZING CRITERION: MAXIMUM DEFLECTION

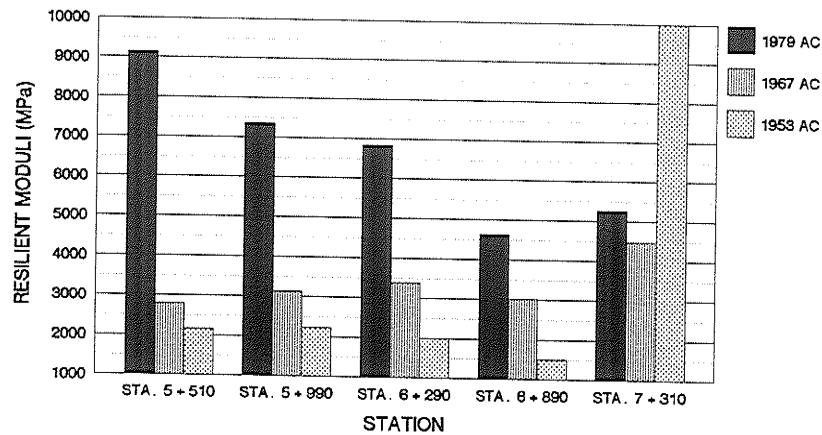
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3: (1500 kPa)

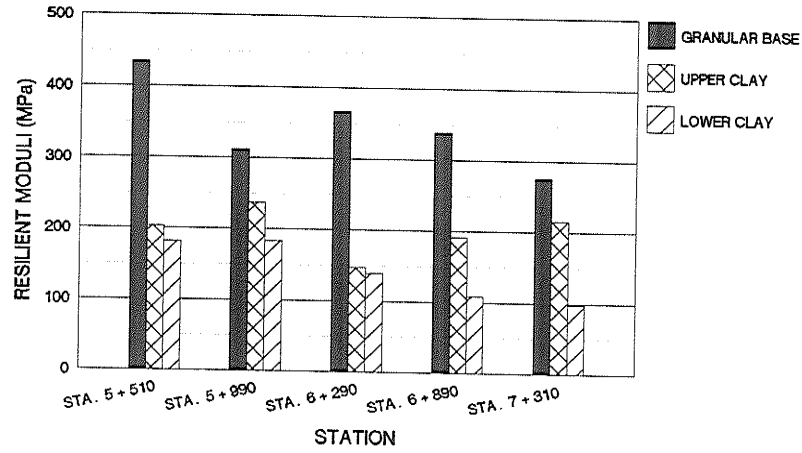


ANSYS FEM ANALYSIS: ISOTROPIC MODEL

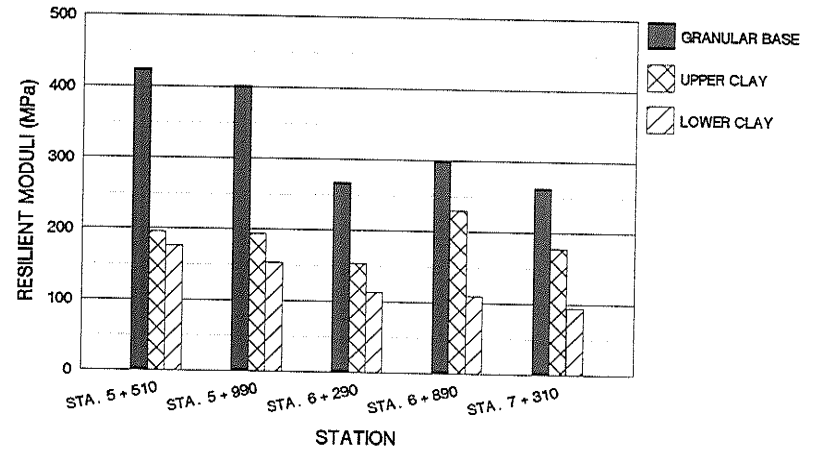
REGINA RWY. 12-30: PROFILE OF AC MODULI

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

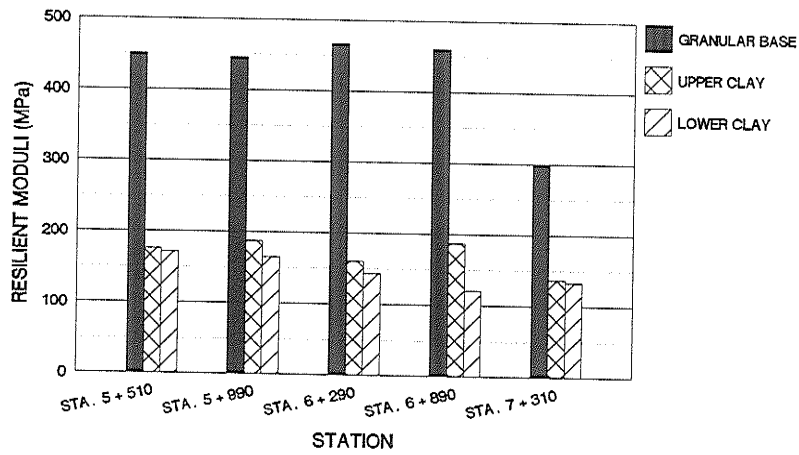
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 3 (1500 kPa)

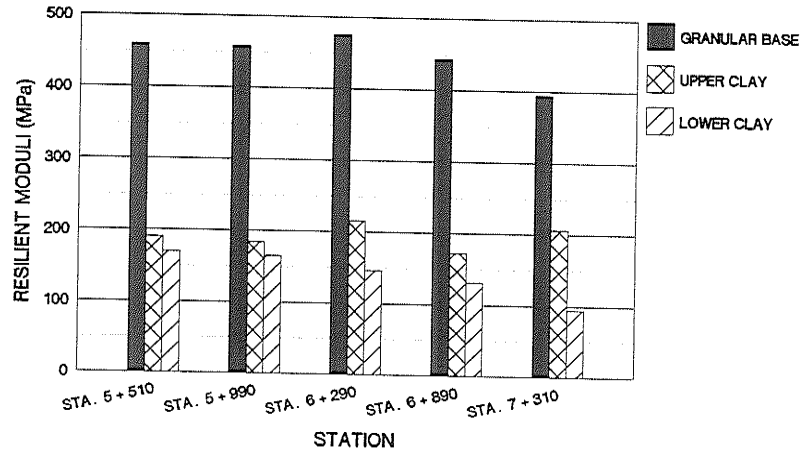


ANSYS FEM ANALYSIS: ISOTROPIC MODEL

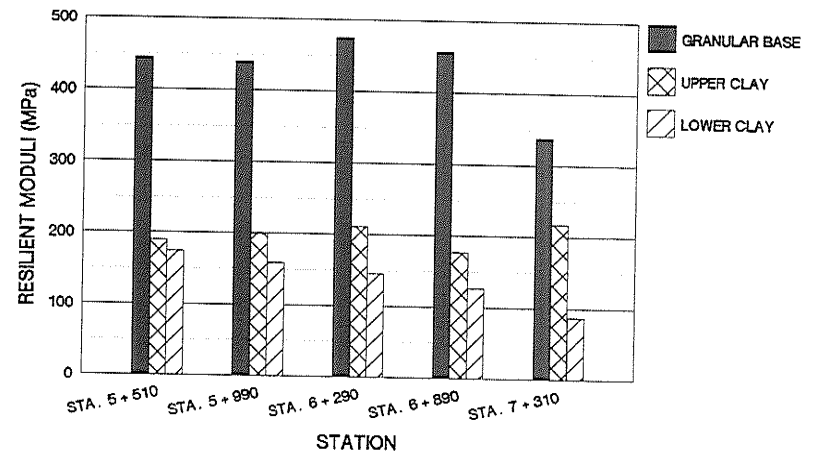
REGINA RWY. 12-30: PROFILE OF MODULI OF UNBOUND LAYERS

OPTIMIZING CRITERION: "AREA" OF BASIN

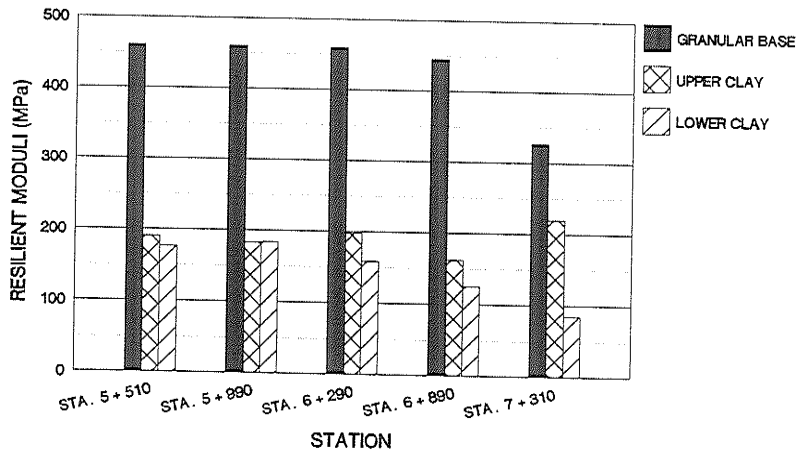
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 3 (1500 kPa)

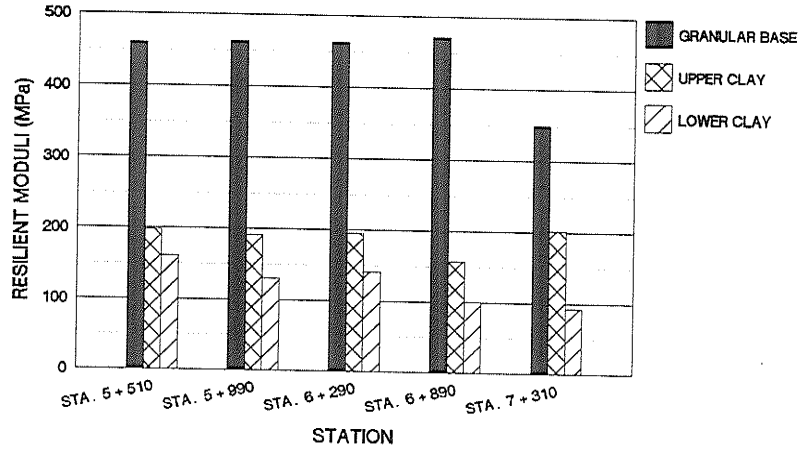


ANSYS FEM ANALYSIS: ISOTROPIC MODEL

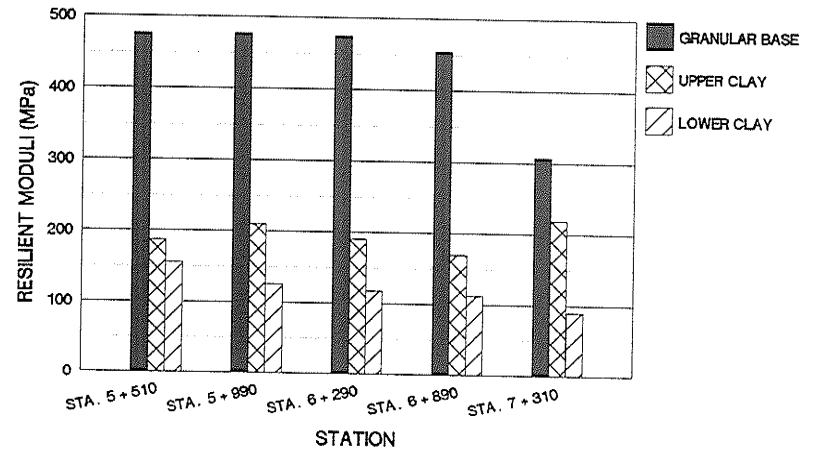
REGINA RWY. 12-30: PROFILE OF MODULI OF UNBOUND LAYERS

OPTIMIZING CRITERION: MAXIMUM DEFLECTION

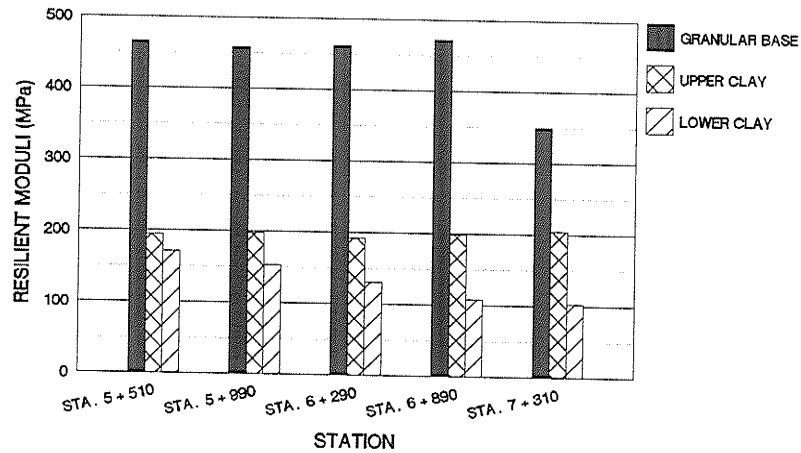
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 3 (1500 kPa)

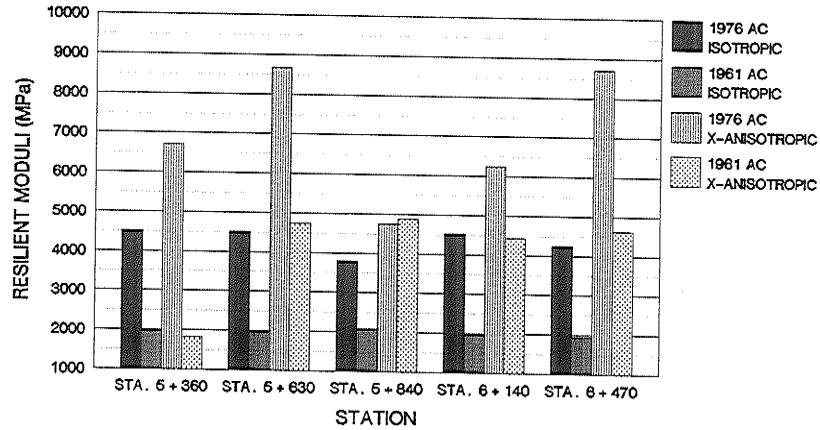


ANSYS FEM ANALYSIS: ISOTROPIC MODEL

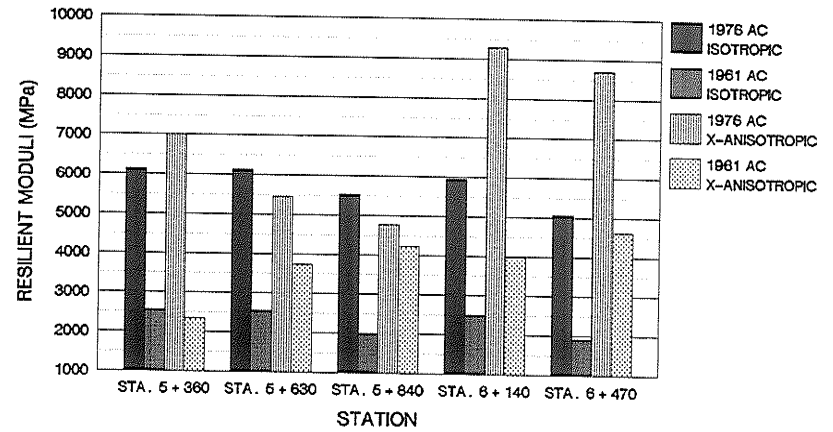
REGINA RWY. 12-30: PROFILE OF MODULI OF UNBOUND LAYERS

OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

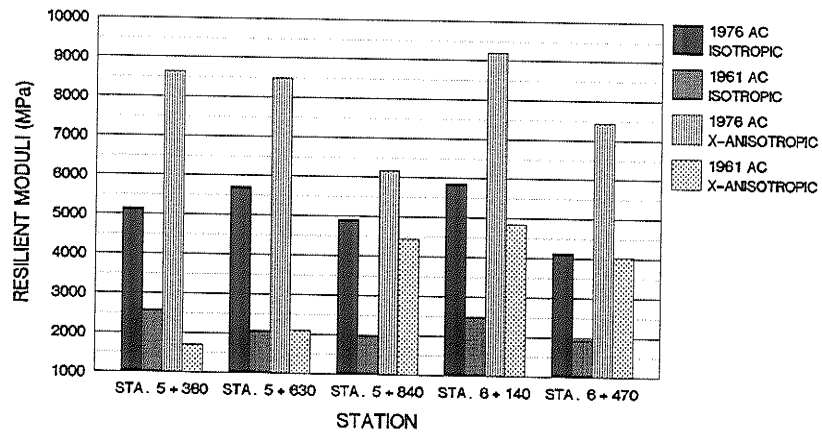
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3: (1400 kPa)



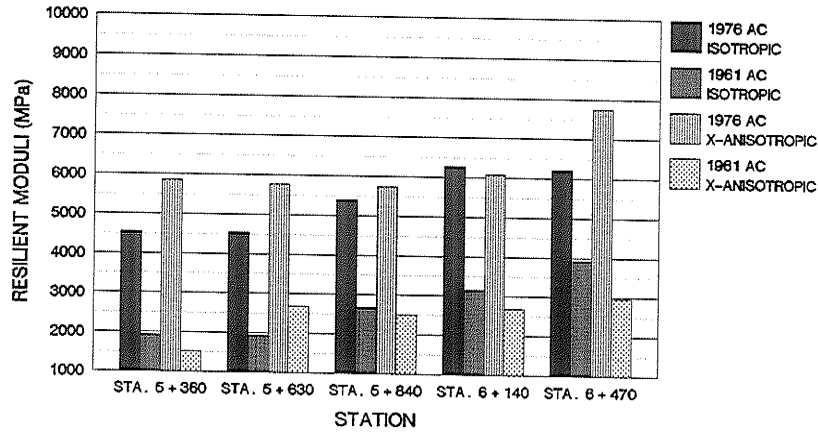
ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33: PROFILE OF MODULI OF BOUND LAYERS

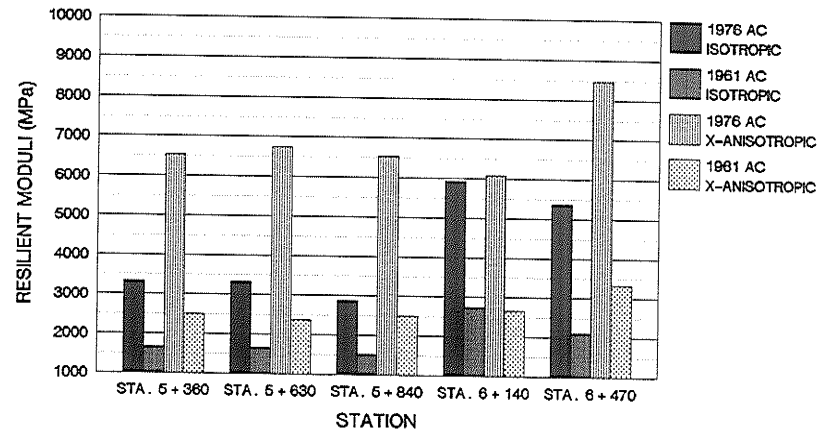
OPTIMIZING CRITERION: "AREA" OF BASIN

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

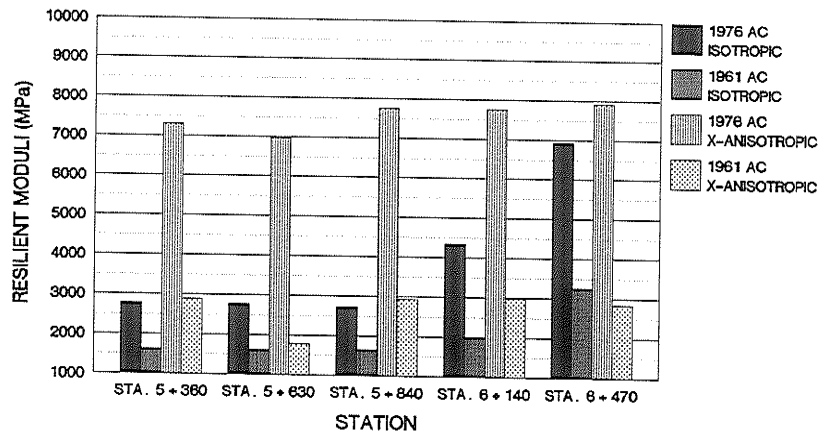
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3: (1400 kPa)



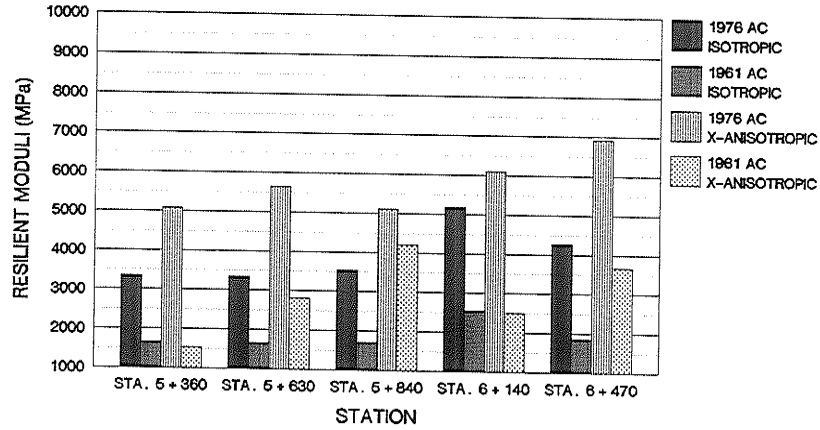
ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33: PROFILE OF MODULI OF BOUND LAYERS

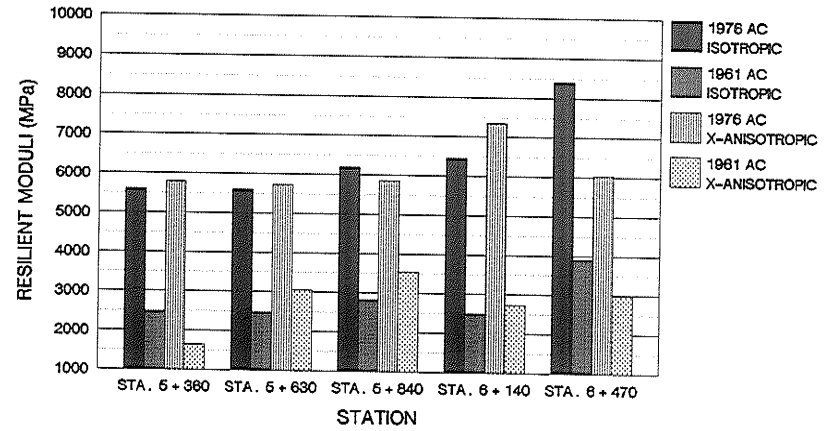
OPTIMIZING CRITERION: MAXIMUM DEFLECTION

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

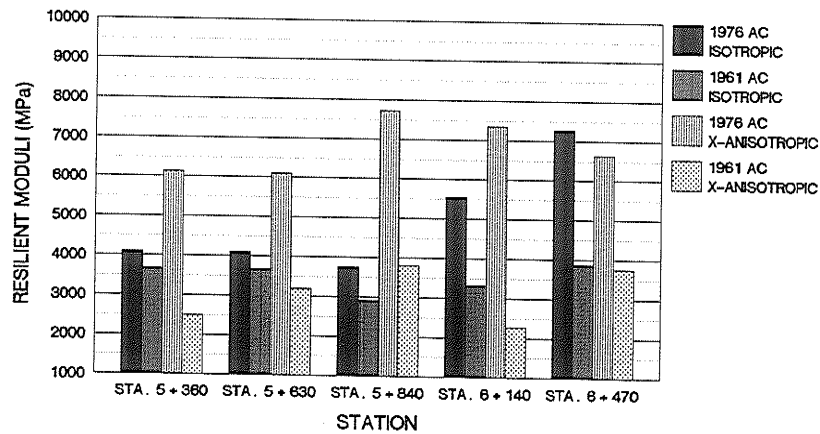
LOAD STEP 1: (750 kPa)



LOAD STEP 2: (1100 kPa)



LOAD STEP 3: (1400 kPa)



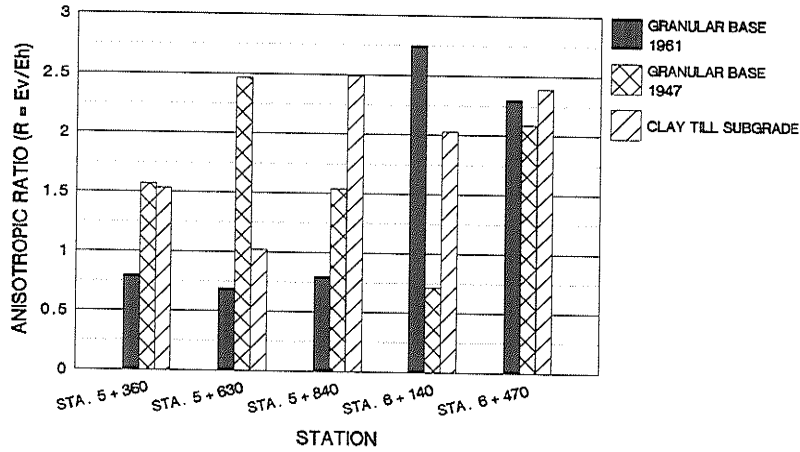
ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33: PROFILE OF MODULI OF BOUND LAYERS

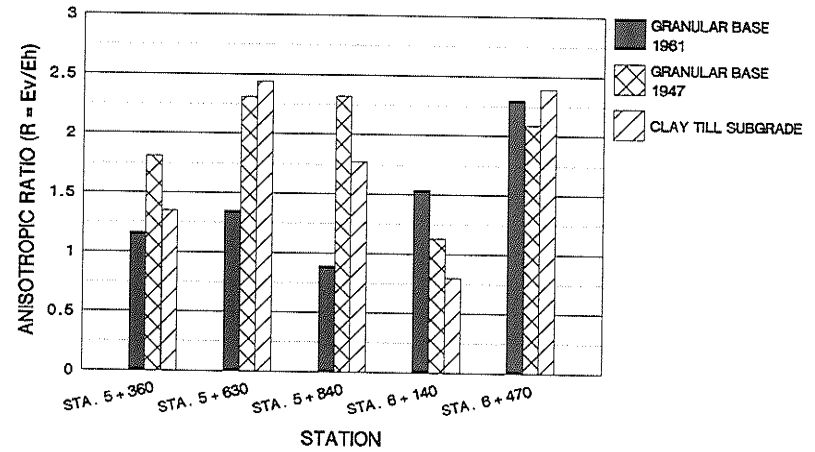
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

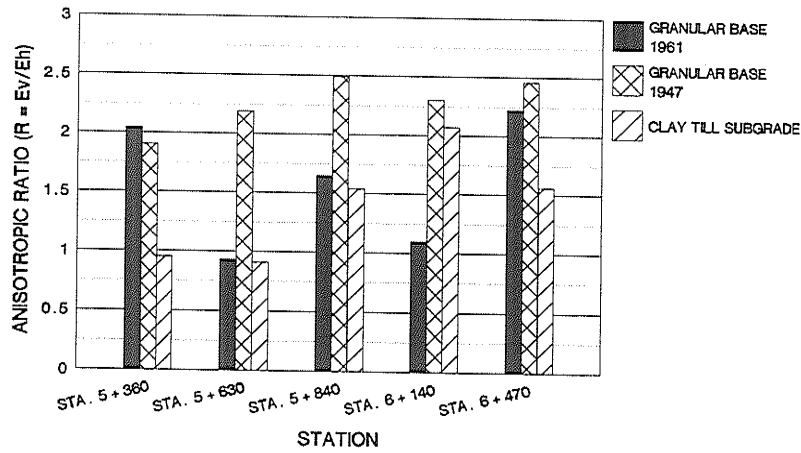
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 3 (1500 kPa)



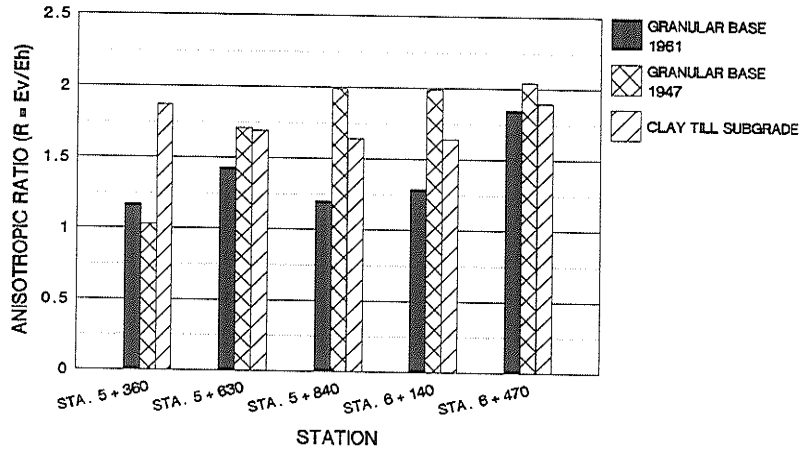
ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33: PROFILE OF MODULI OF UNBOUND LAYERS

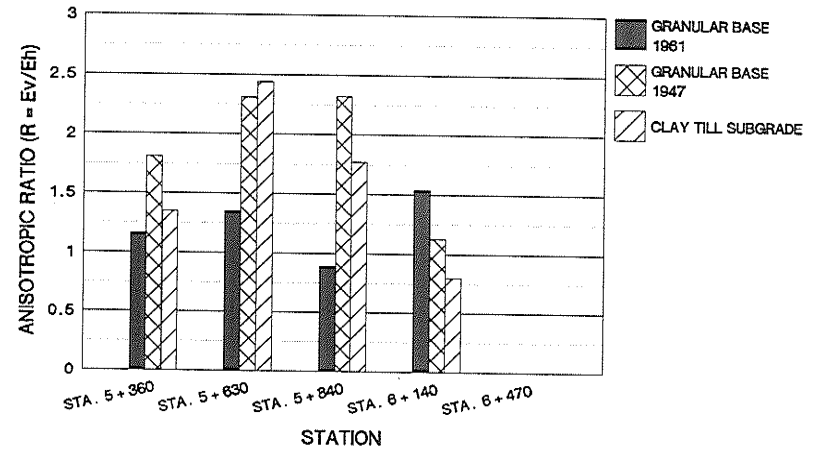
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

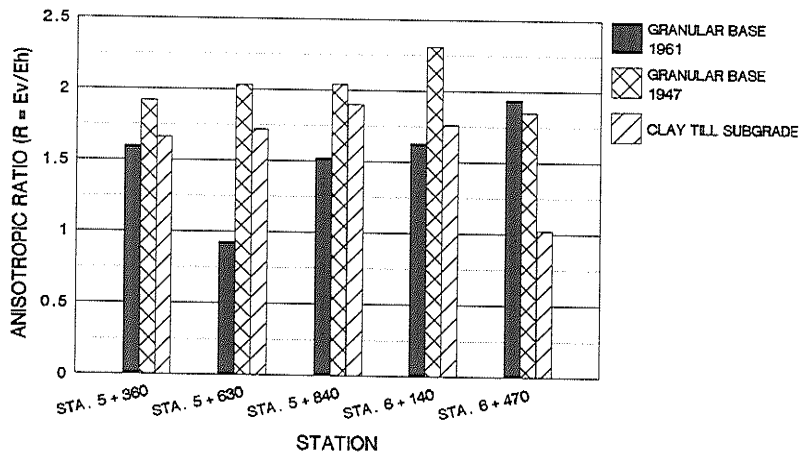
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 3 (1500 kPa)



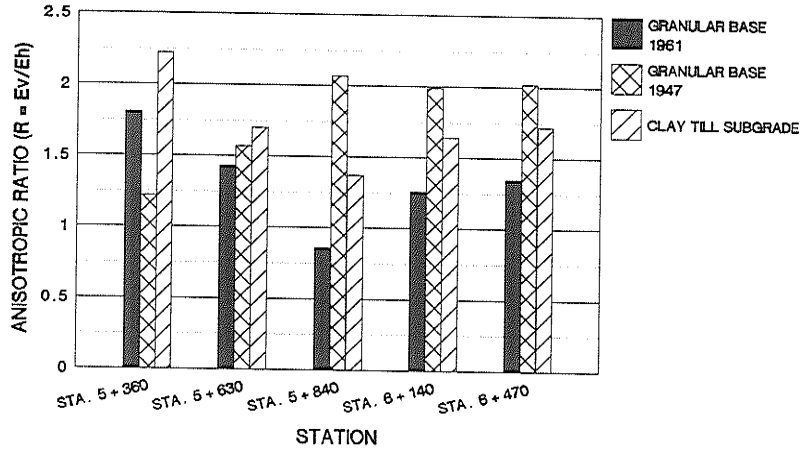
ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33: PROFILE OF MODULI OF UNBOUND LAYERS

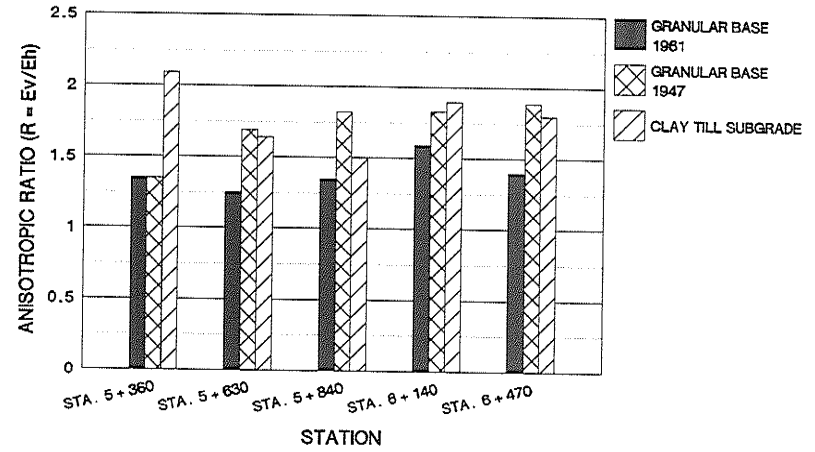
OPTIMIZING CRITERION: MAXIMUM DEFLECTION

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

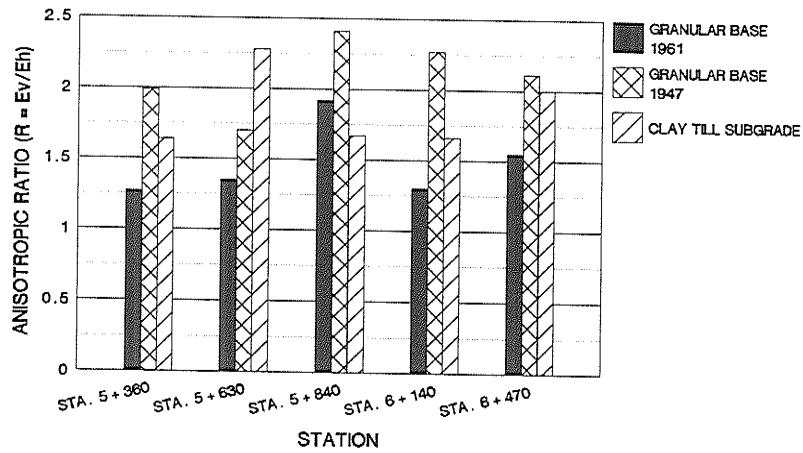
LOAD STEP 1 (750 kPa)



LOAD STEP 2 (1100 kPa)



LOAD STEP 2 (1100 kPa)



ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33: PROFILE OF MODULI OF UNBOUND LAYERS

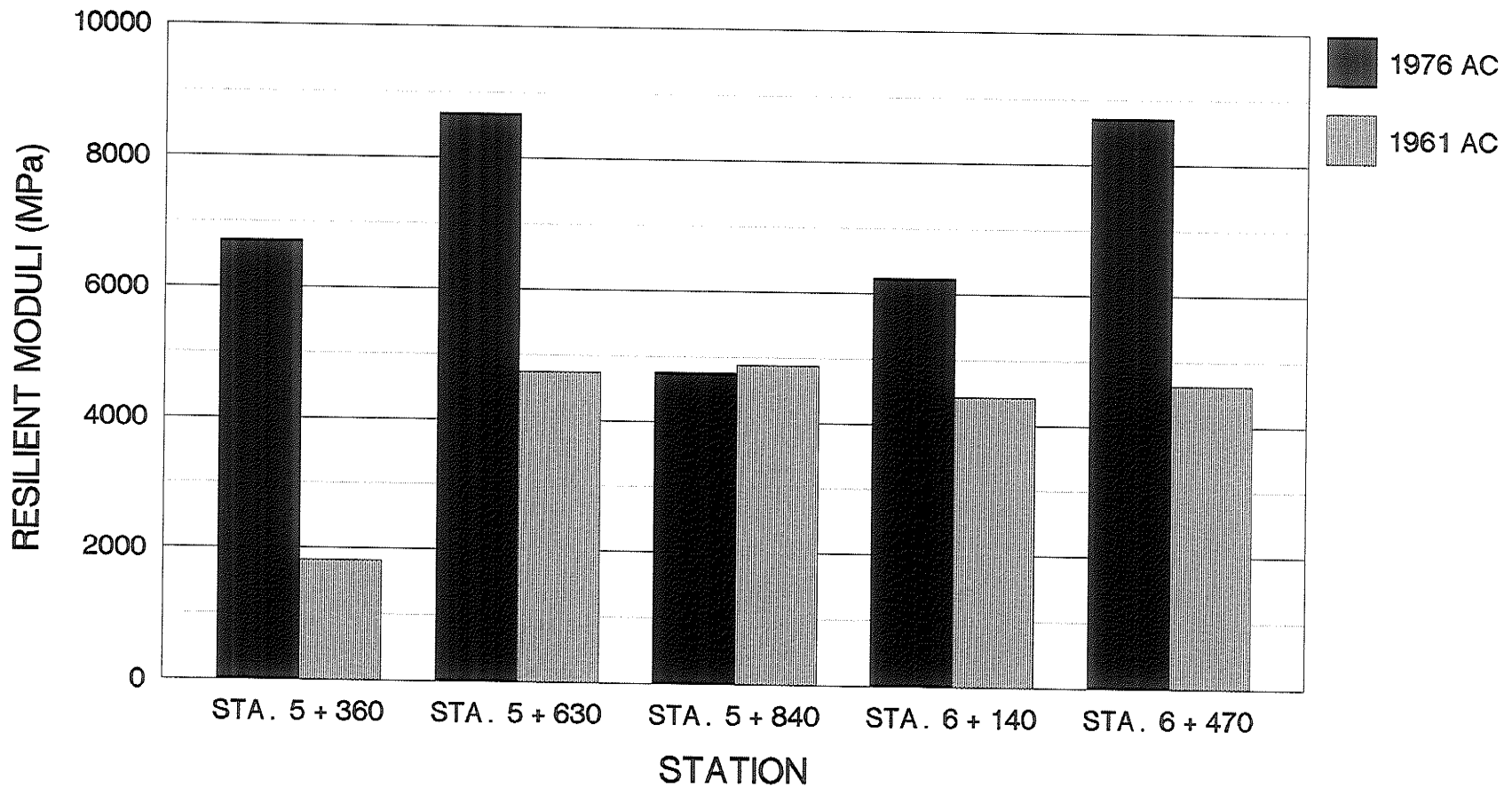
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

(BOTH ISOTROPIC AND X-ANISOTROPIC CASES)

ANSYS FEM ANALYSIS: XANISOTROPIC MODEL

SASKATOON: RWY 15-33

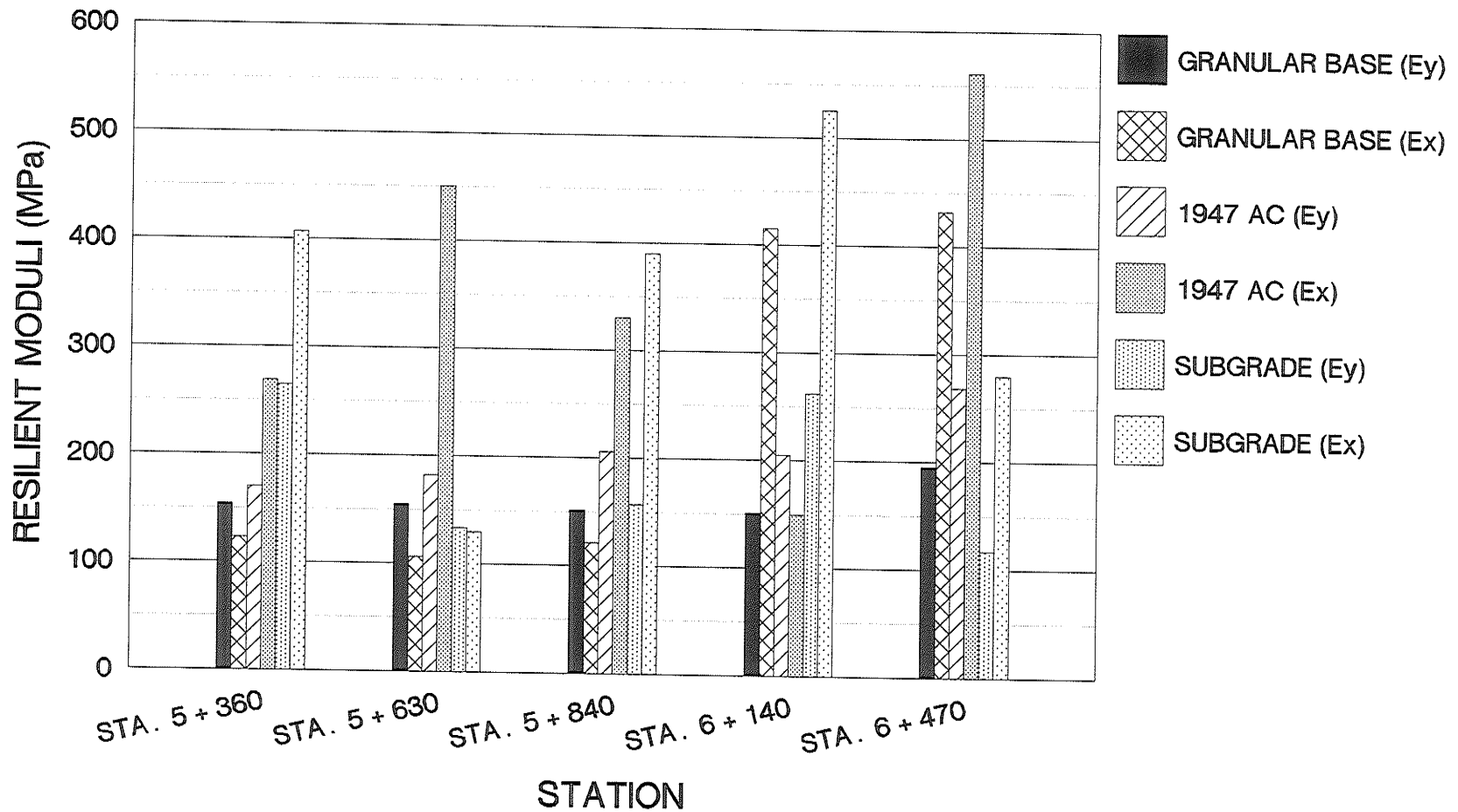
PROFILE OF MODULI ALONG THE RUNAWY



ANSYS FEM ANALYSIS: XANISOTROPIC MODEL

SASKATOON: RWY. 15-33.

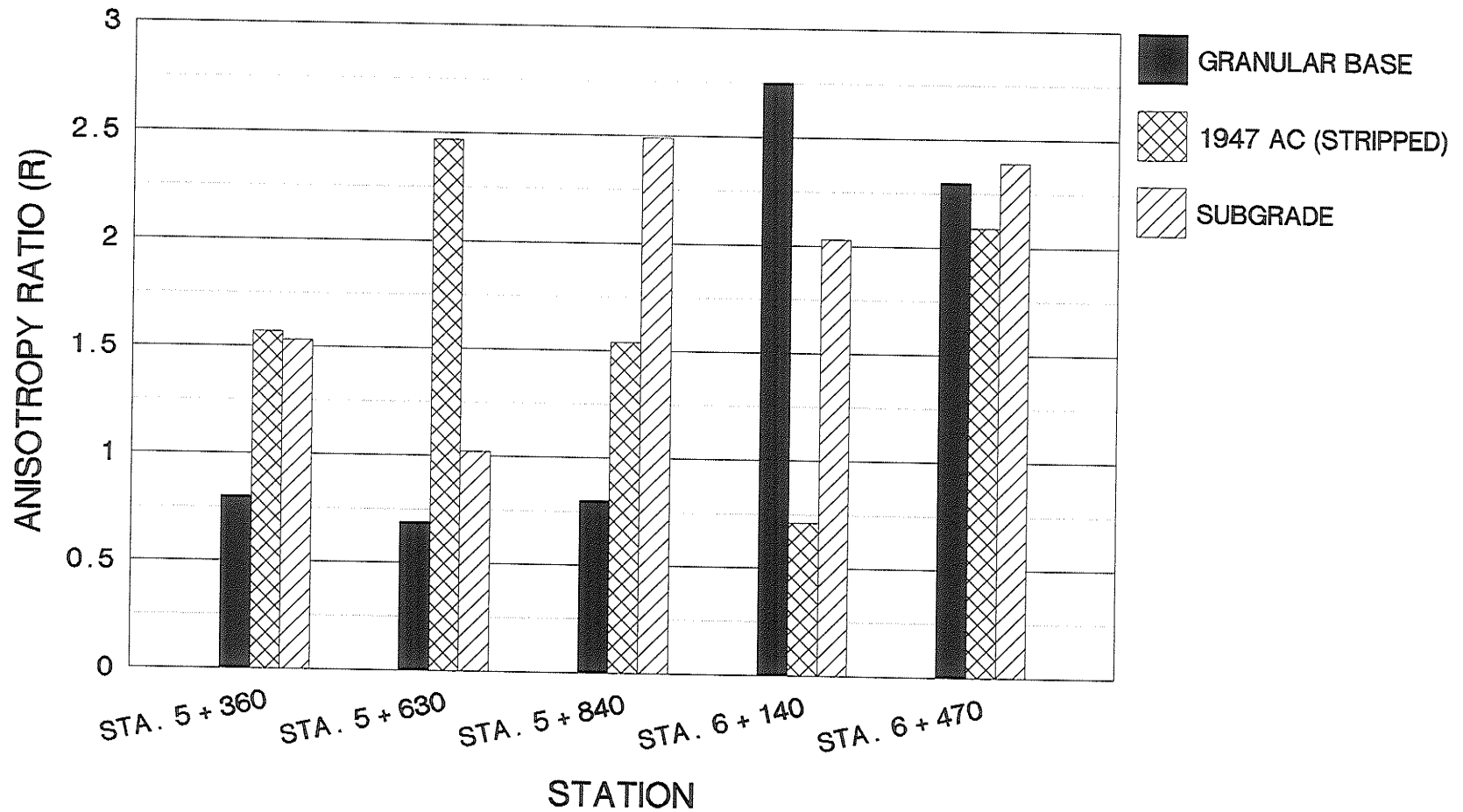
PROFILE OF MODULI VALUES IN UNBOUND LAYERS



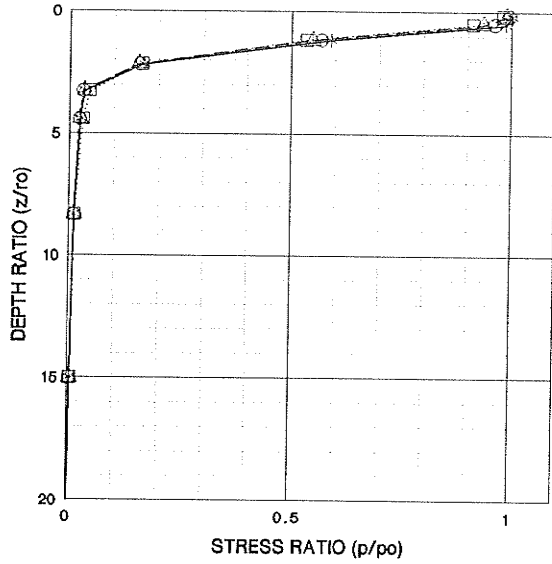
ANSYS FEM ANALYSIS: XANISOTROPIC MODEL

SASKATOON: RWY. 15-33

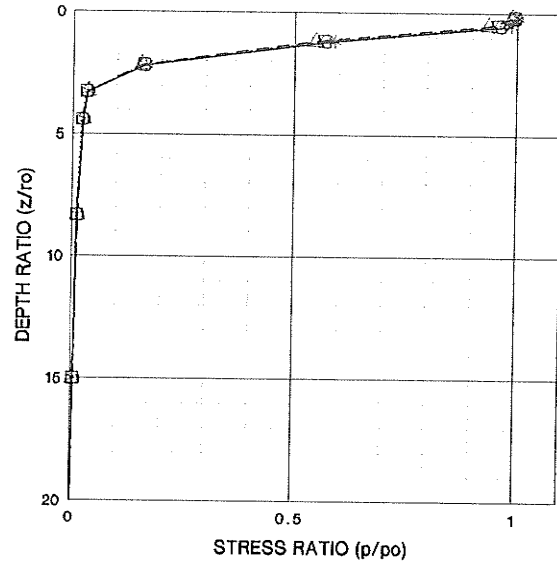
ANISOTROPY RATIOS IN UNBOUND LAYERS



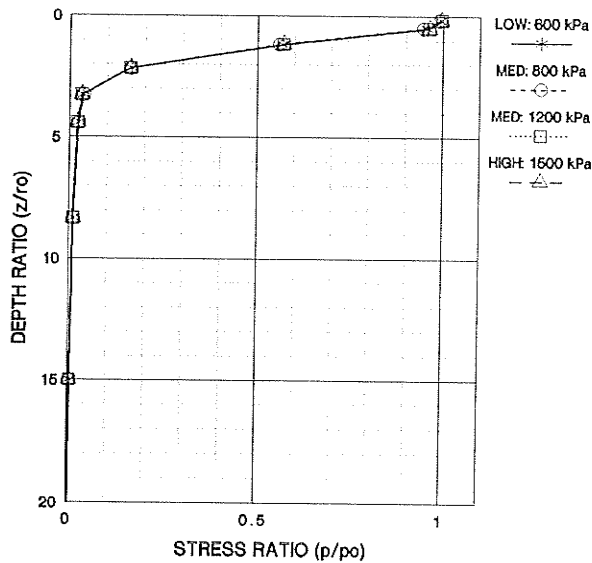
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



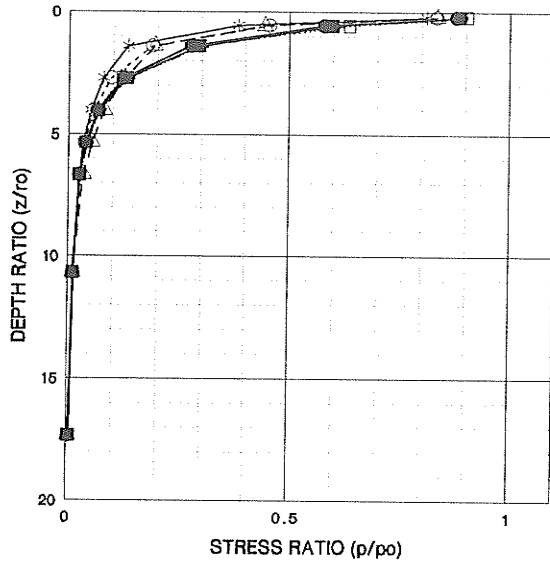
ANSYS FEM ANALYSIS

BRANDON: RWY. 08-26: STA. 4 + 950

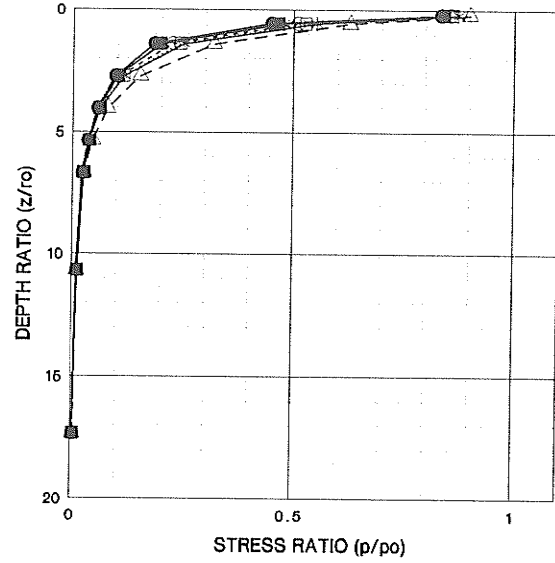
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(X-ANISOTROPIC MODEL ONLY)

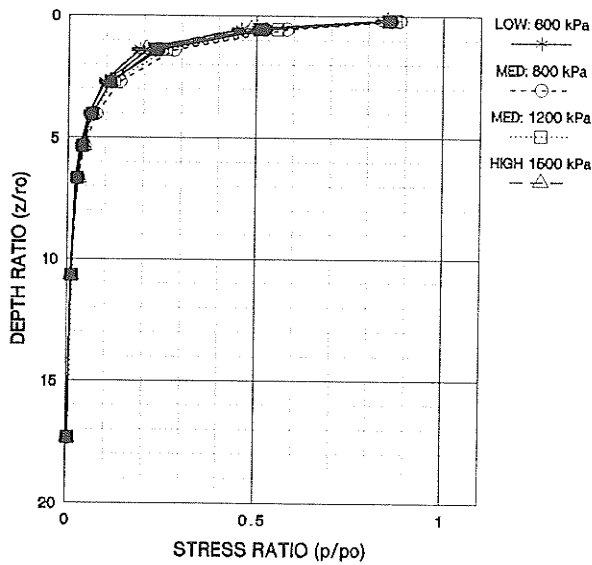
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



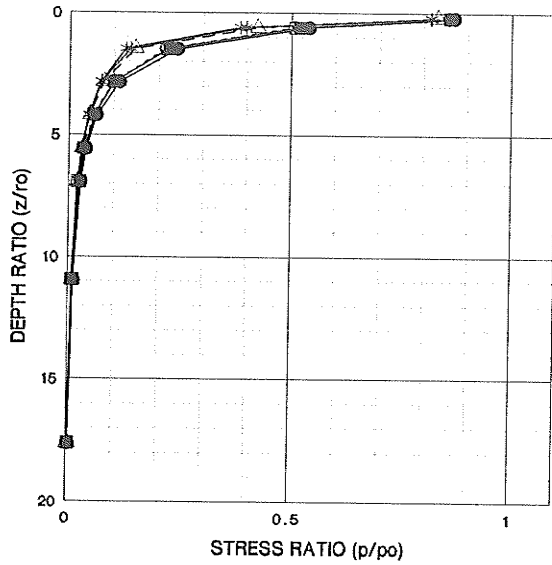
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



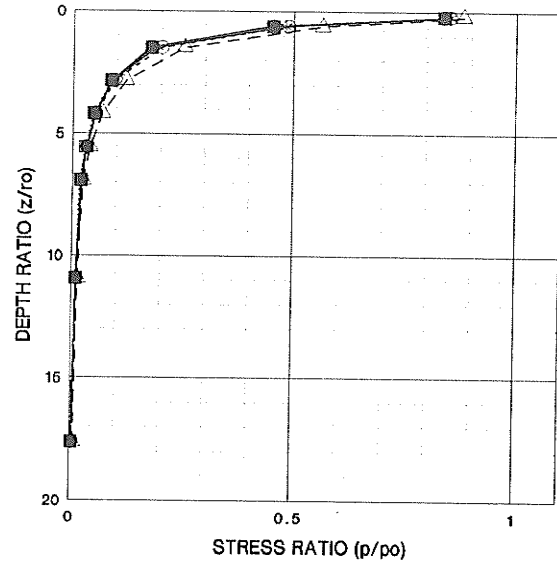
ANSYS FEM ANALYSIS

BRANDON: RWY . 08-26: STA. 5 + 400
 DISTRIBUTION OF VERTICAL STRESSES ON C. L. OF LOADS
 (BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

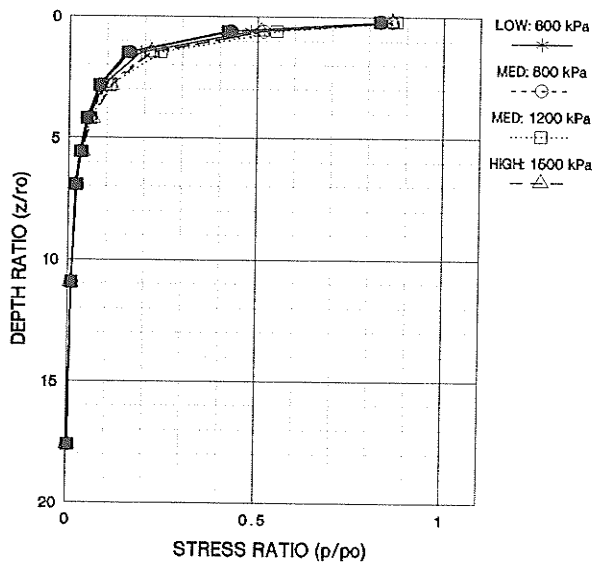
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



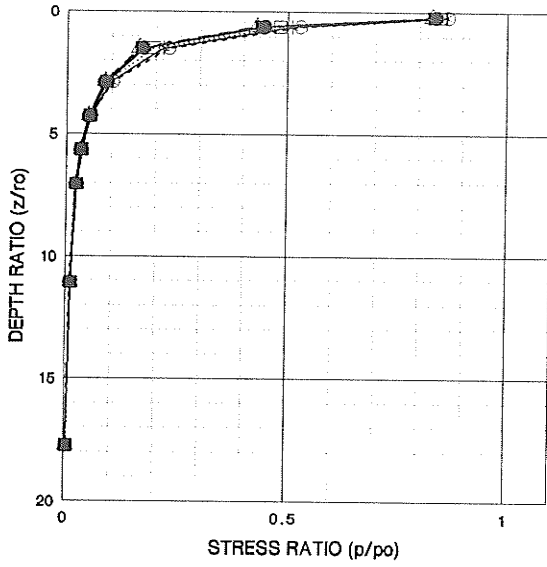
ANSYS FEM ANALYSIS

BRANDON: RWY. 08-26: STA. 5 + 600

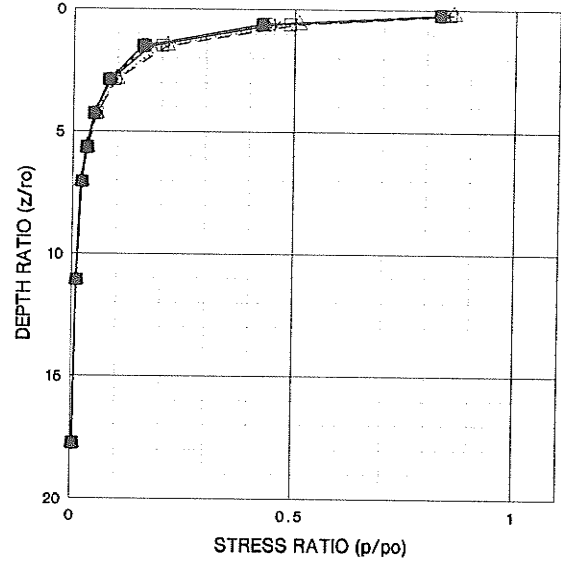
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(ISOTROPIC AND X-ANISOTROPIC MODELS)

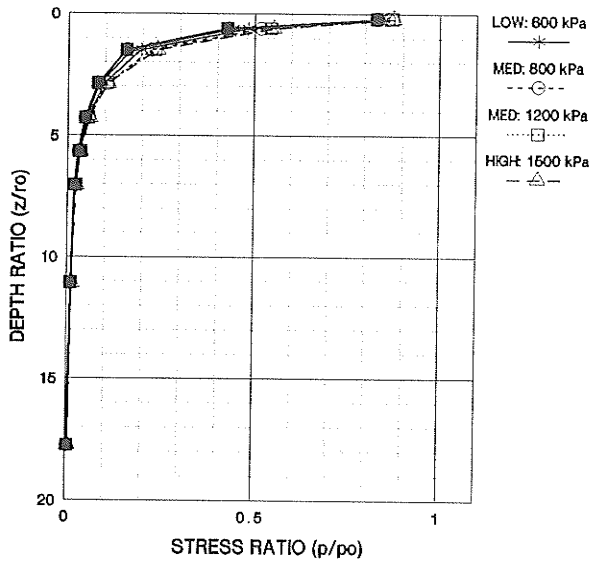
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



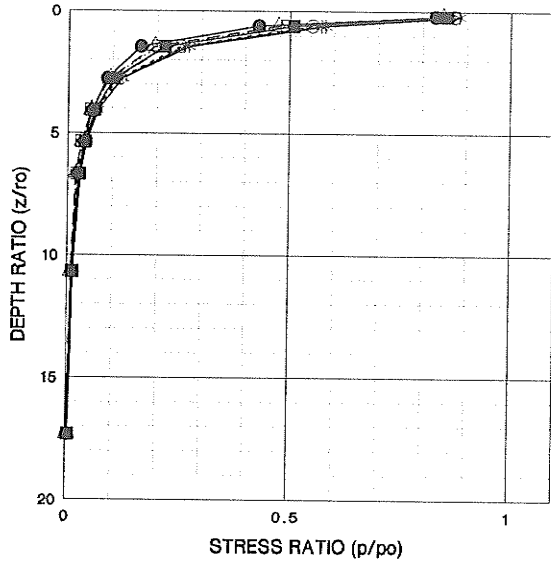
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



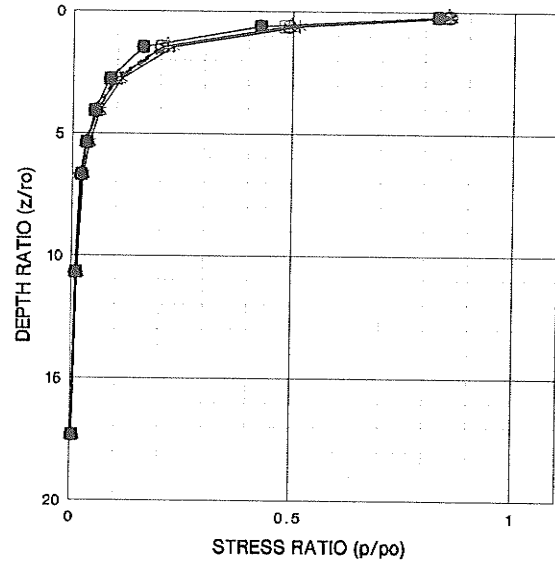
ANSYS FEM ANALYSIS

BRANDON: RWY . 08-26: STA. 5 + 900
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS
(ISOTROPIC AND X-ANISOTROPIC MODELS)

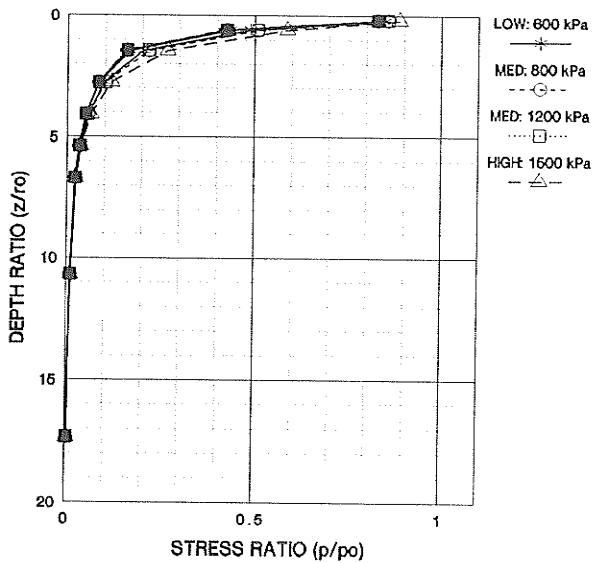
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



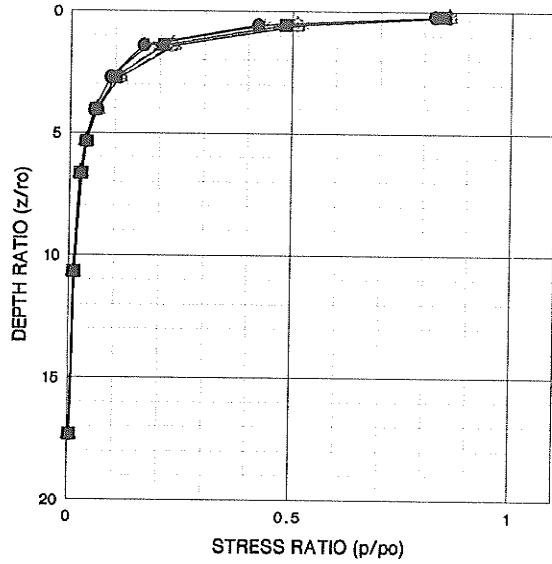
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



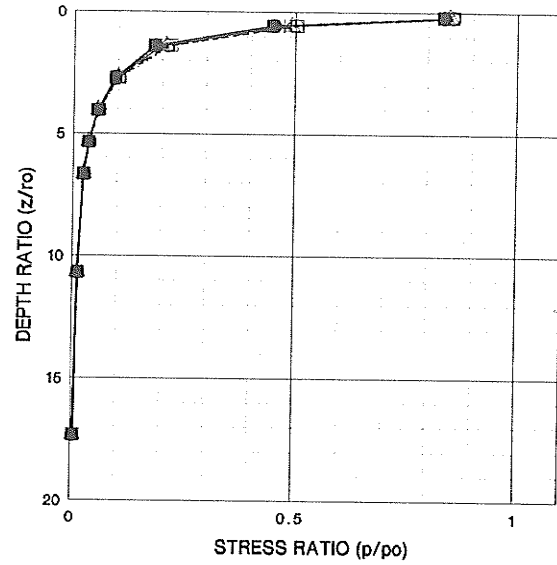
ANSYS FEM ANALYSIS

BRANDON: RWY. 08-26: STA. 6 + 300
 DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS
 (ISOTROPIC AND X-ANISOTROPIC MODELS)

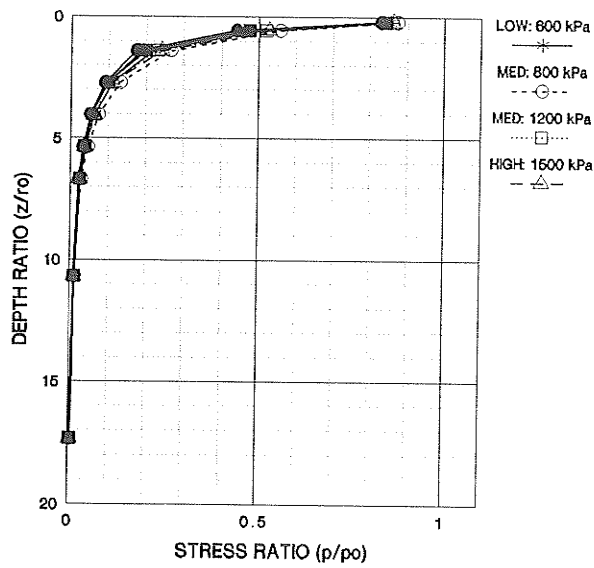
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



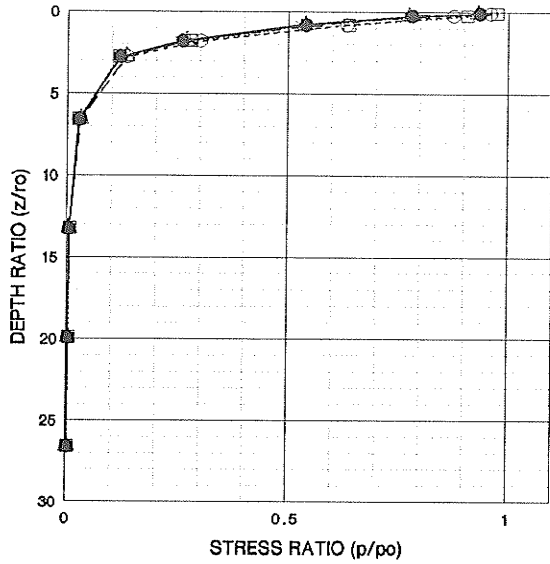
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



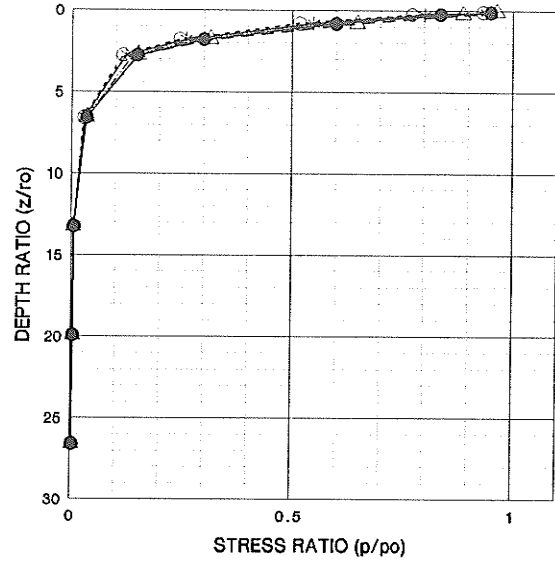
ANSYS FEM ANALYSIS

BRANDON: RWY. 08-26: STA. 6 + 500
 DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS
 (ISOTROPIC AND X-ANISOTROPIC MODELS)

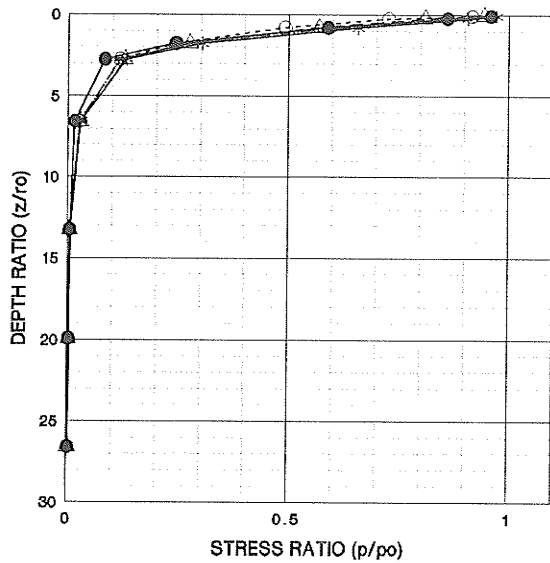
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



LOW: 500 kPa

MED: 700 kPa

HIGH: 1000 kPa

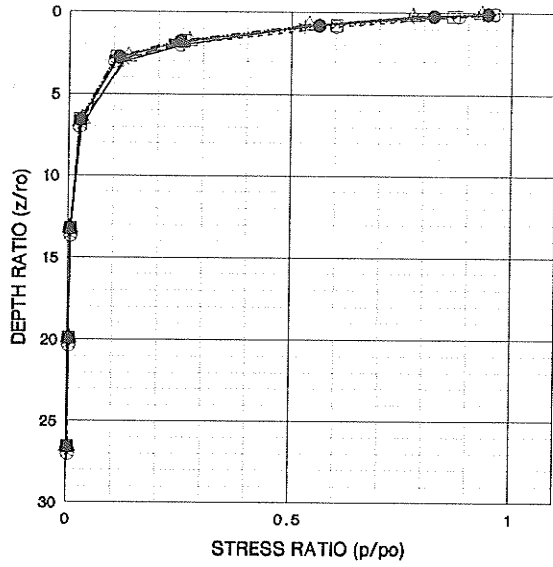
ANSYS FEM ANALYSIS

ST. ANDREWS: RWY. 13-31: STA. 5 + 030

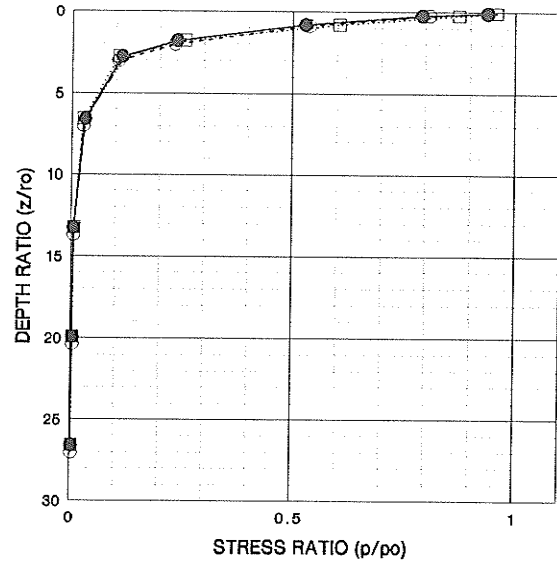
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(BOTH ISOTROPIC AND ANISOTROPIC MODELS)

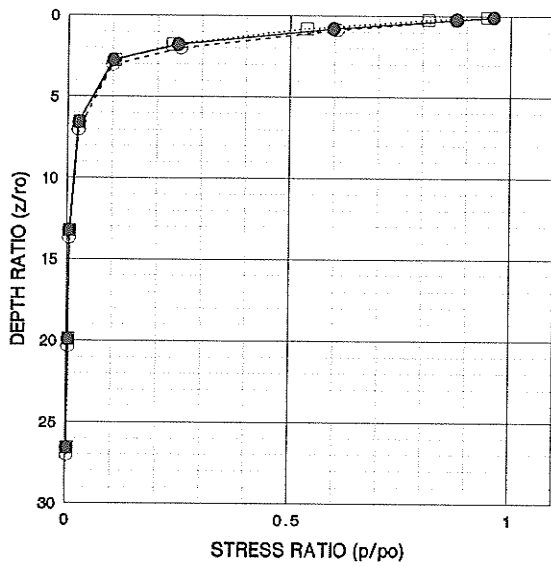
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



LOW: 500 kPa

MED: 700 kPa

HIGH: 1000 kPa

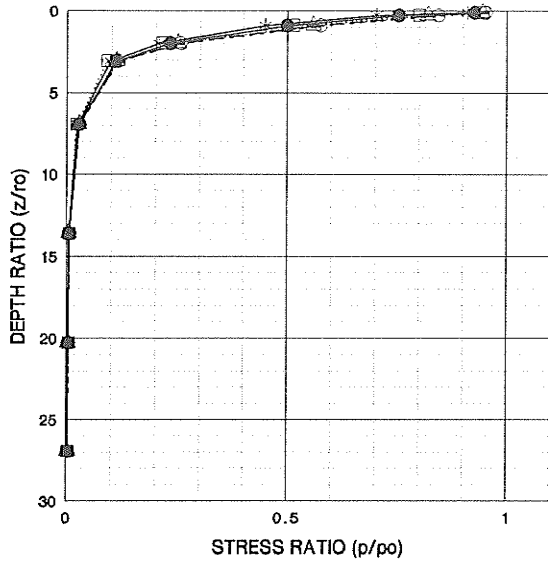
ANSYS FEM ANALYSIS

ST. ANDREWS: RWY. 13-31: STA. 5 + 120

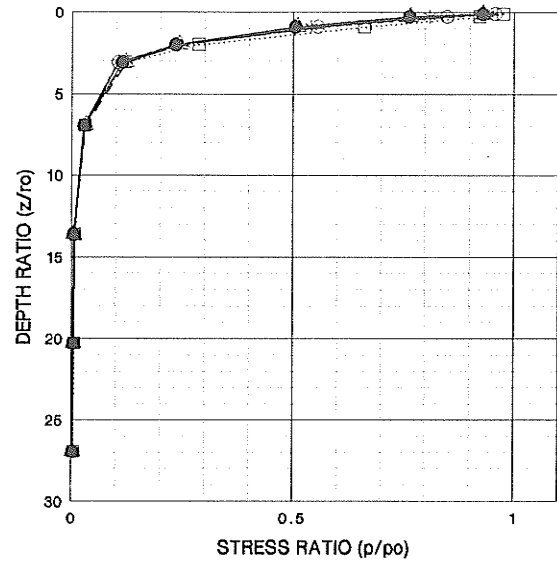
DISTRIBUTION OF VERTICAL STRESSES ON C. L. OF LOADS

(BOTH ISOTROPIC AND ANISOTROPIC MODELS)

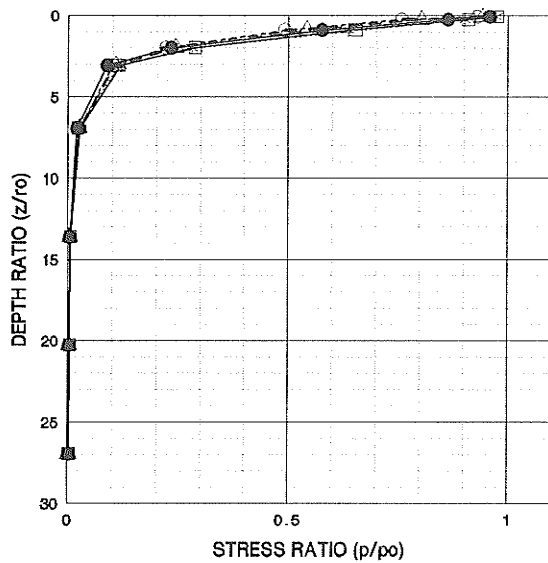
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



LOW: 500 kPa

MED: 700 kPa

HIGH: 1000 kPa

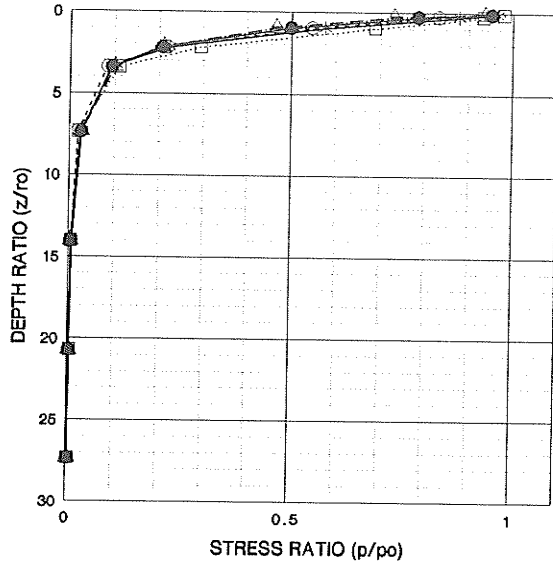
ANSYS FEM ANALYSIS

ST. ANDREWS: RWY. 13-31: STA. 5 + 480

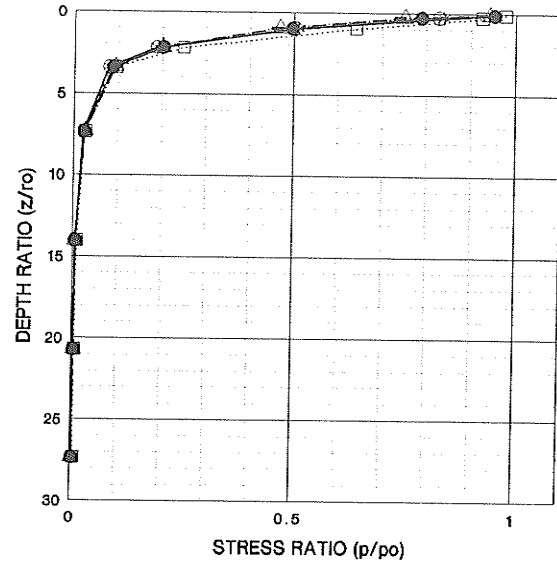
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(BOTH ISOTROPIC AND ANISOTROPIC MODELS)

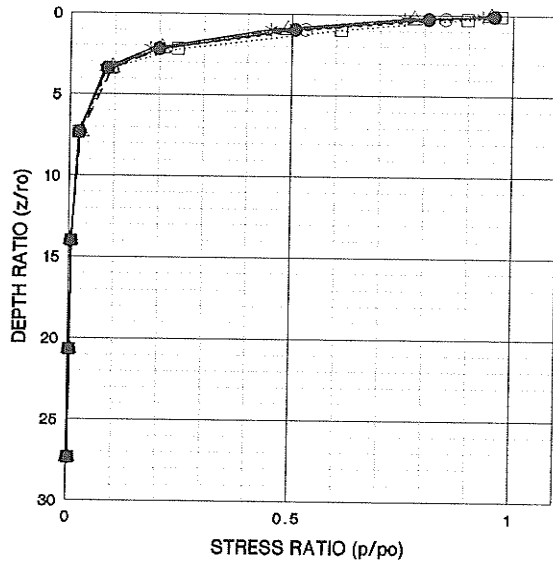
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



LOW: 500 kPa

MED: 700 kPa

HIGH: 1000 kPa

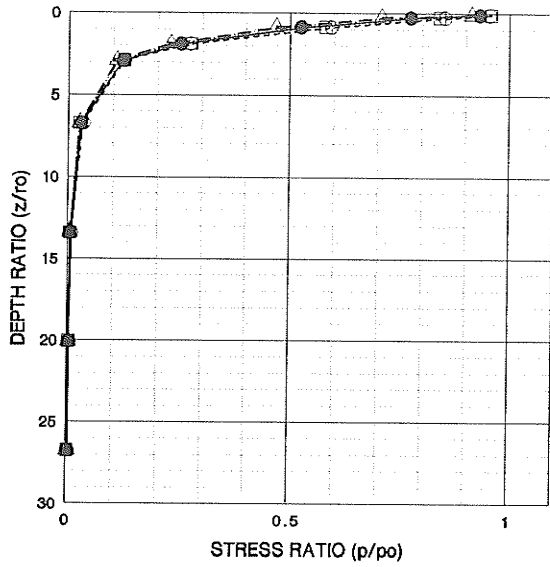
ANSYS FEM ANALYSIS

ST. ANDREWS: RWY. 13-31: STA. 5 + 660

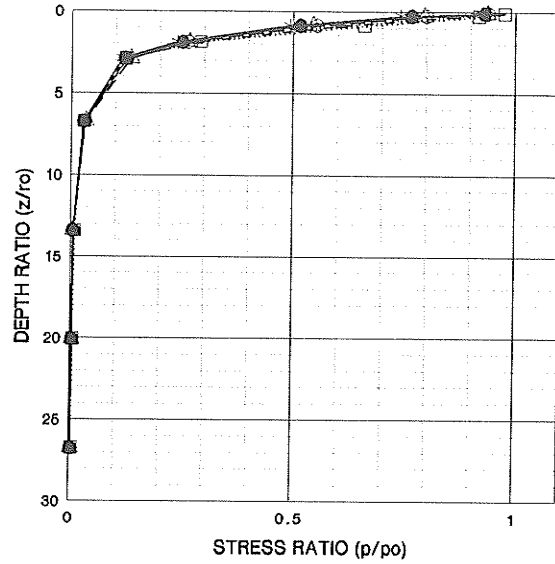
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(BOTH ISOTROPIC AND ANISOTROPIC MODELS)

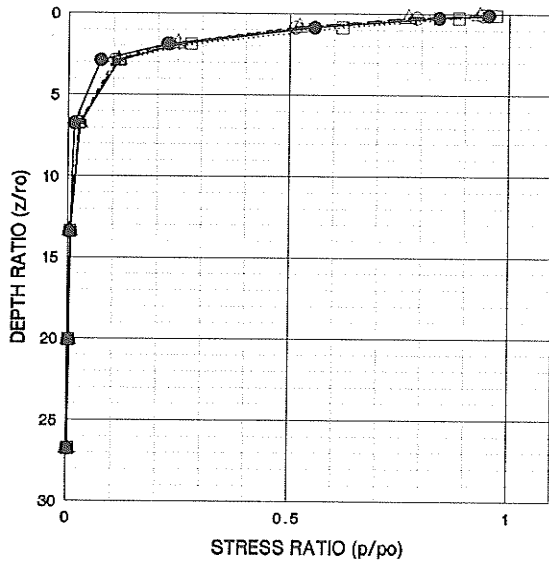
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



LOW: 500 kPa

MED: 700 kPa

HIGH: 1000 kPa

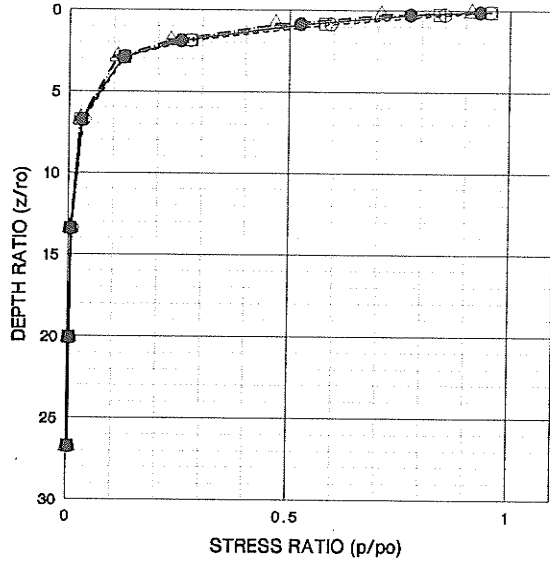
ANSYS FEM ANALYSIS

ST. ANDREWS: RWY. 13-31: STA. 5 + 840

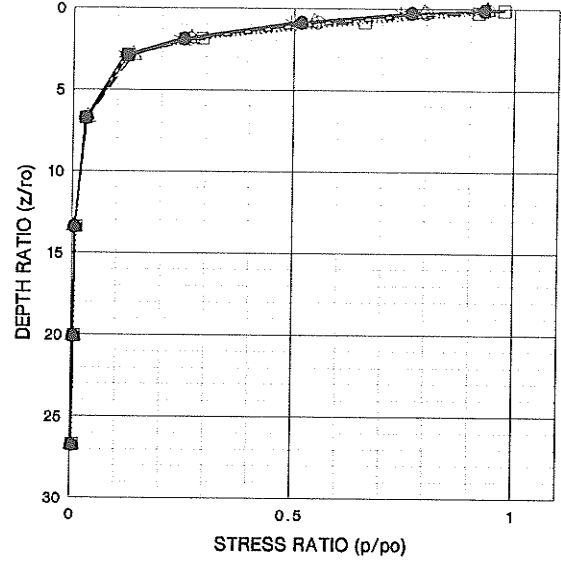
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(BOTH ISOTROPIC AND ANISOTROPIC MODELS)

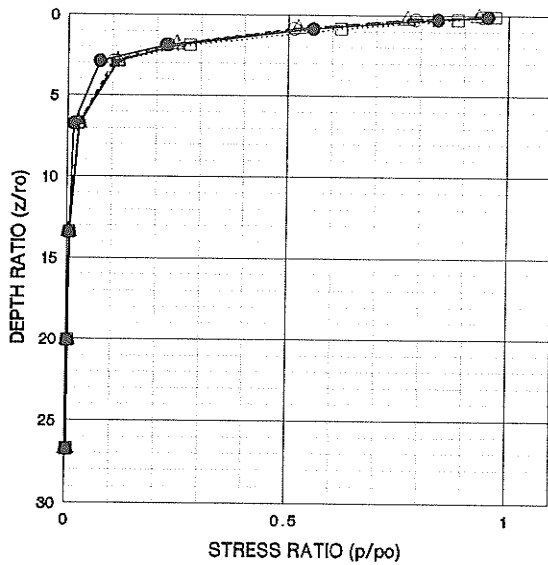
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



LOW: 500 kPa

MED: 700 kPa

HIGH: 1000 kPa

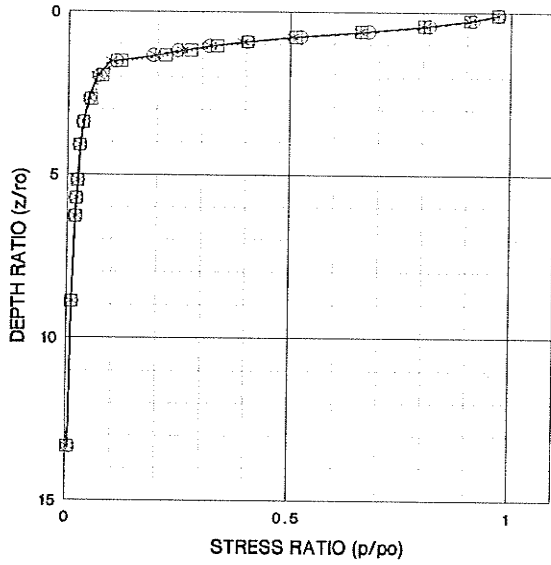
ANSYS FEM ANALYSIS

ST. ANDREWS: RWY. 13-31: STA. 5 + 840

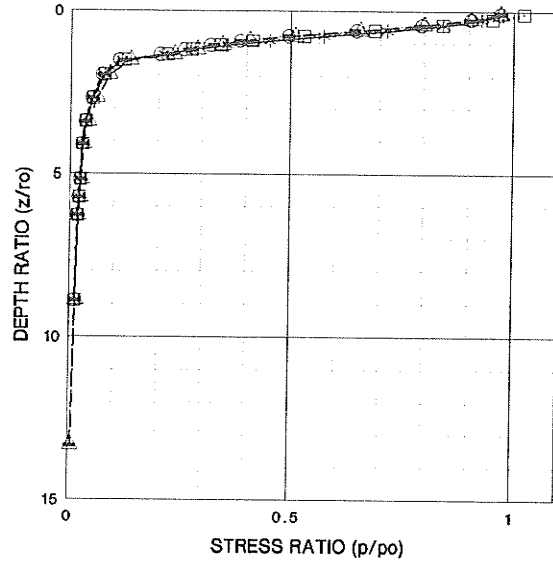
DISTRIBUTION OF VERTICAL STRESSES ON C. L. OF LOADS

(BOTH ISOTROPIC AND ANISOTROPIC MODELS)

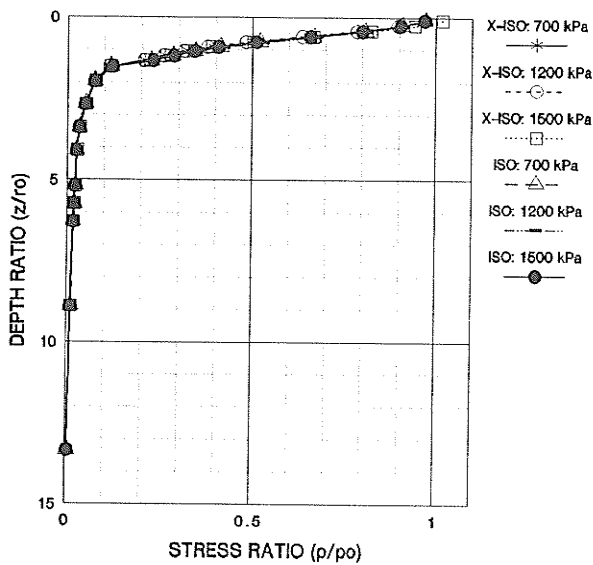
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



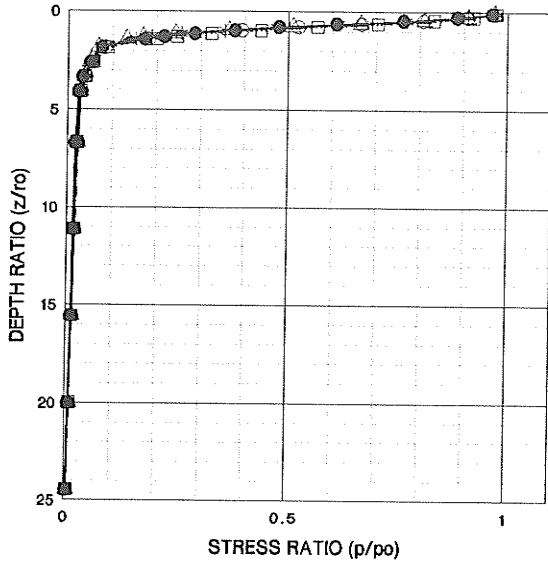
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



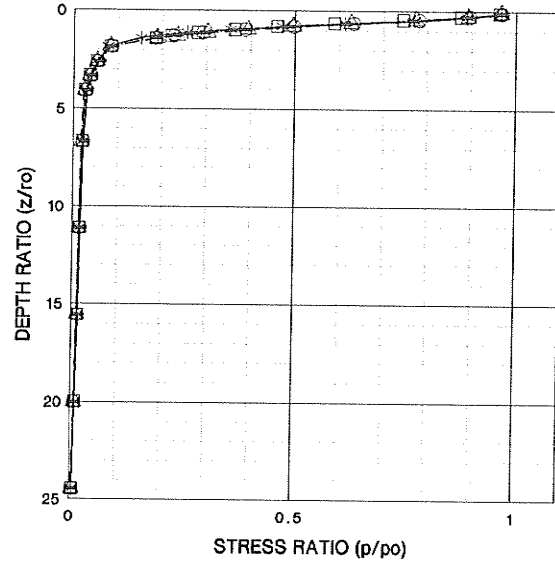
ANSYS FEM ANALYSIS

REGINA: RWY. 12-30: STA. 5 + 510 R
 DISTRIBUTION OF VERTICAL STRESSES ON C. L. OF LOADS
 (BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

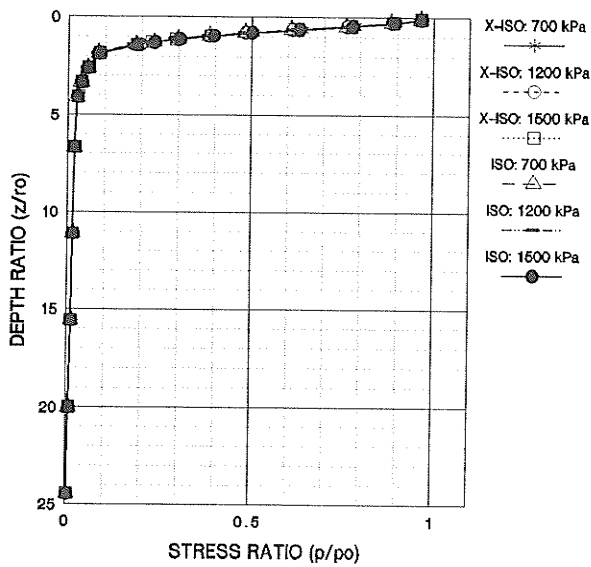
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

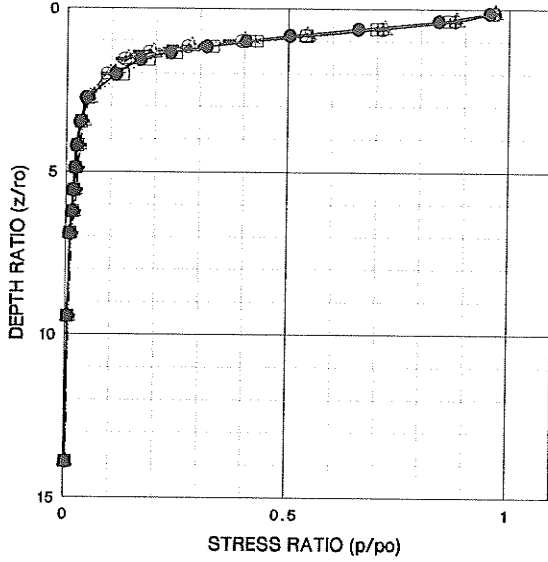


ANSYS FEM ANALYSIS : X-ANISOTROPIC MODEL

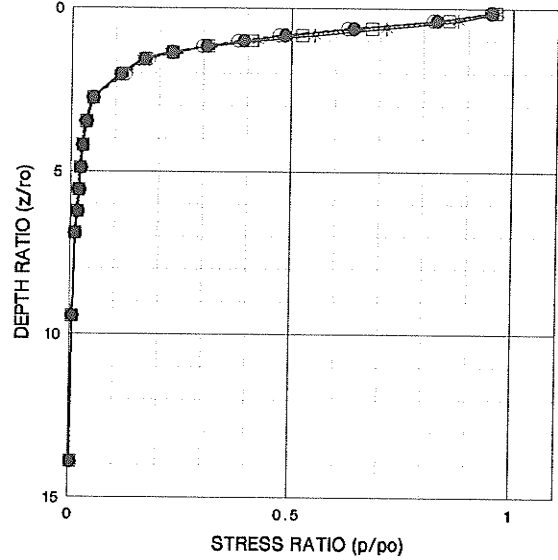
REGINA: RWY. 12-30: STA. 5 + 990 L

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

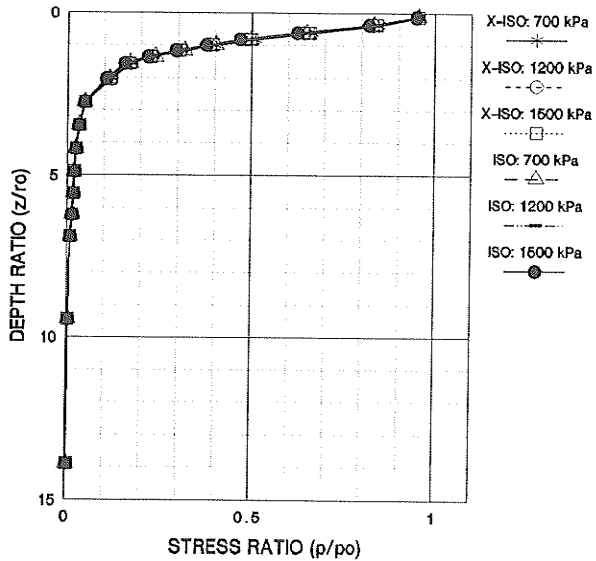
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



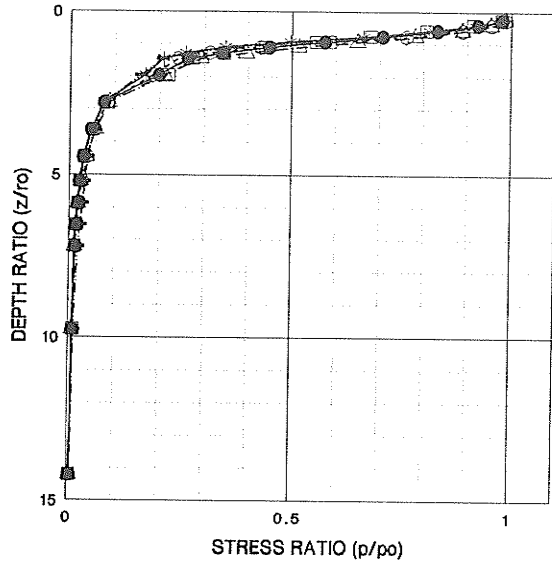
ANSYS FEM ANALYSIS

REGINA: RWY. 12-30: STA. 6 + 290 L

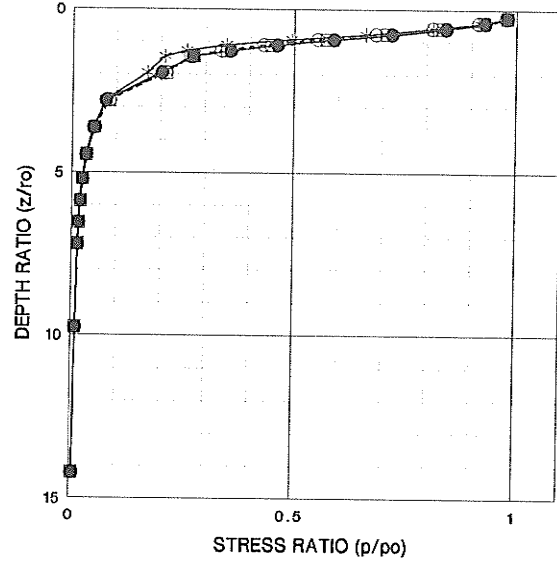
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(ISOTROPIC AND ANISOTROPIC MODELS)

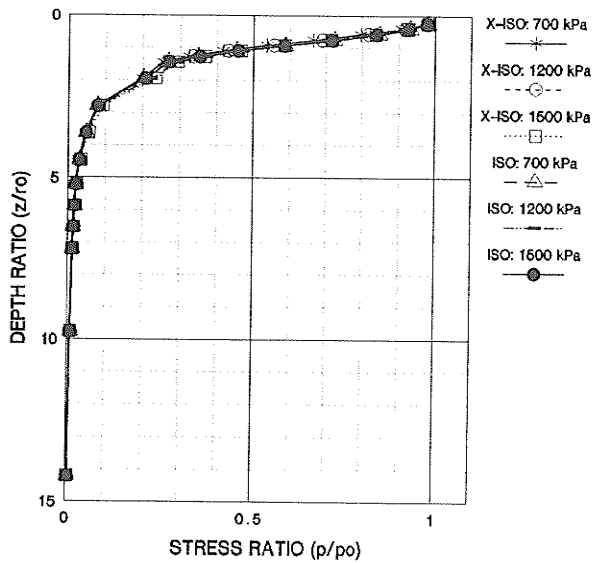
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



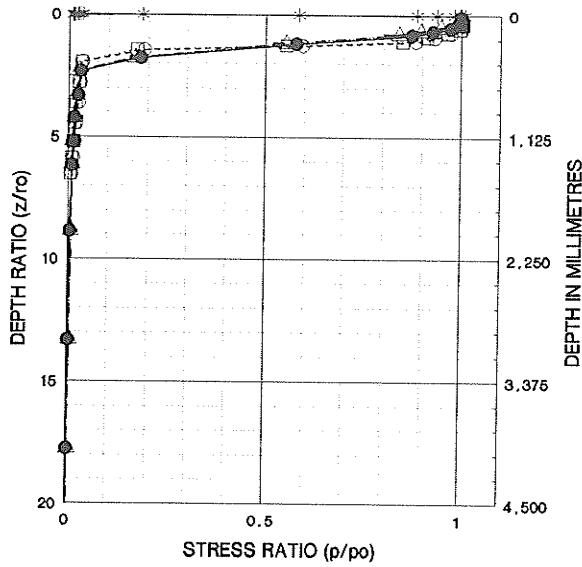
OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



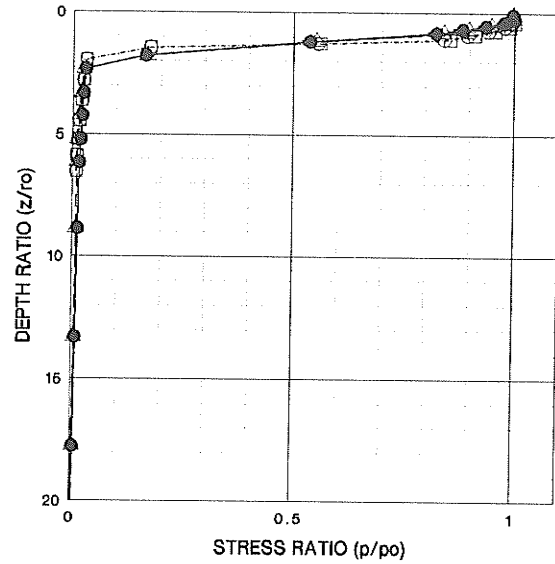
ANSYS FEM ANALYSIS

REGINA: RWY. 12-30: STA. 6 + 890 R
 DISTRIBUTION OF VERTICAL STRESSES ON C. L. OF LOADS
 (ISOTROPIC AND ANISOTROPIC MODELS)

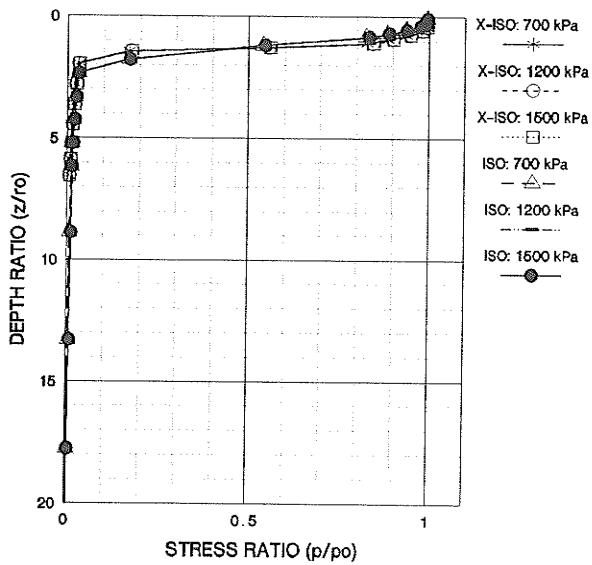
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



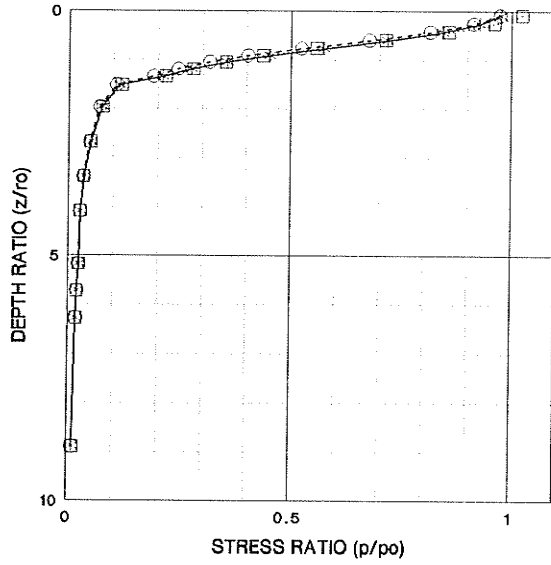
ANSYS FEM ANALYSIS

REGINA: RWY. 12-30: STA. 7 + 310 L

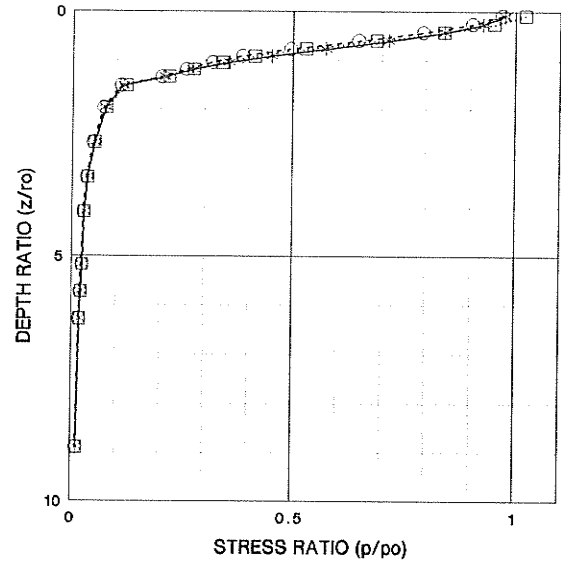
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

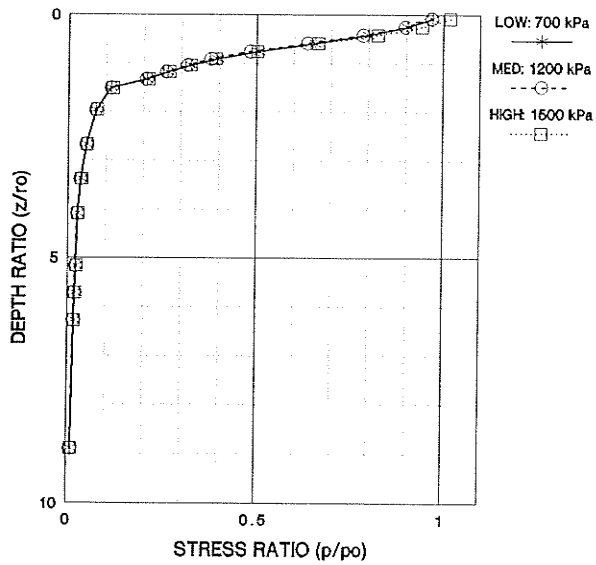
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

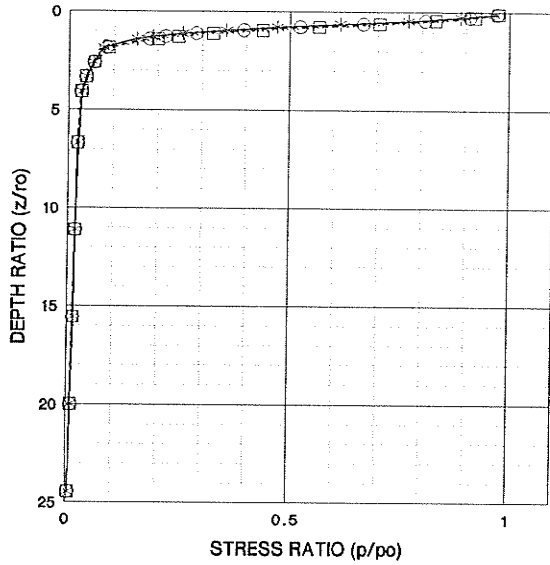


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

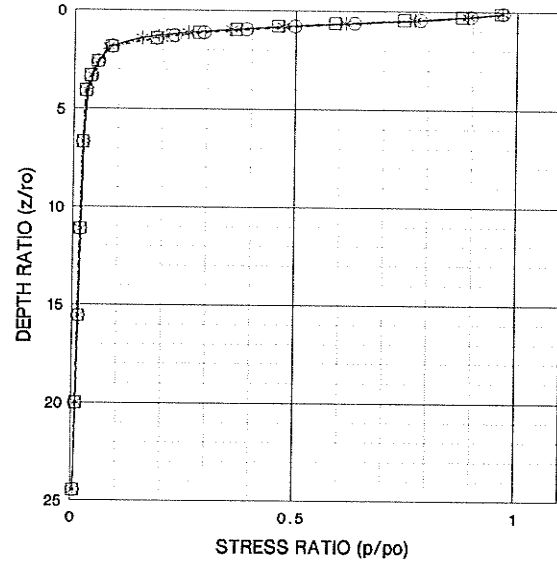
REGINA: RWY. 12-30: STA. 5 + 5510 R

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

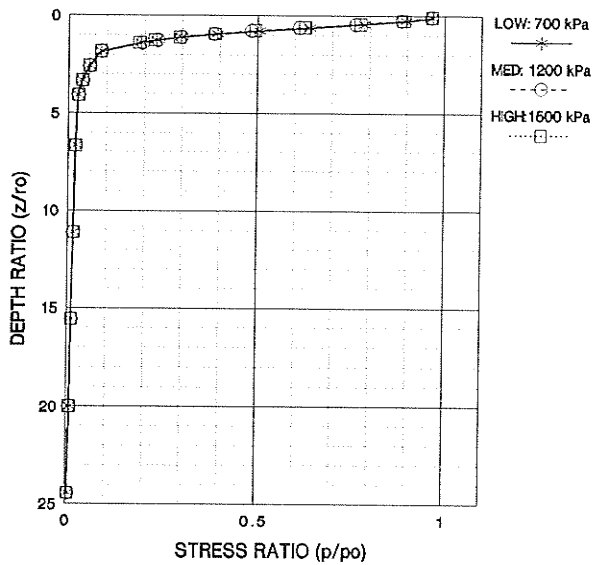
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

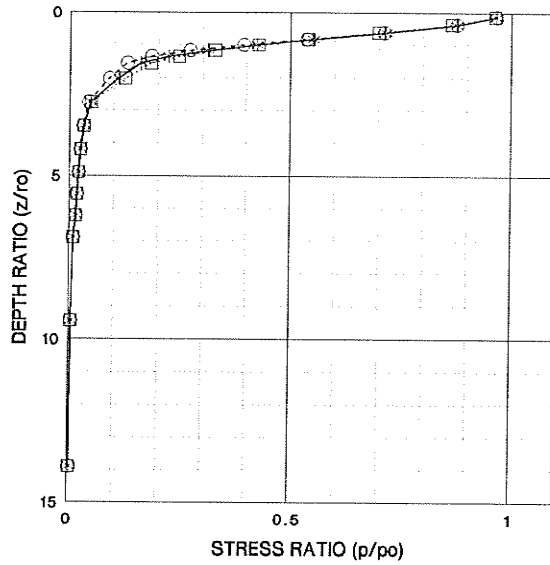


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

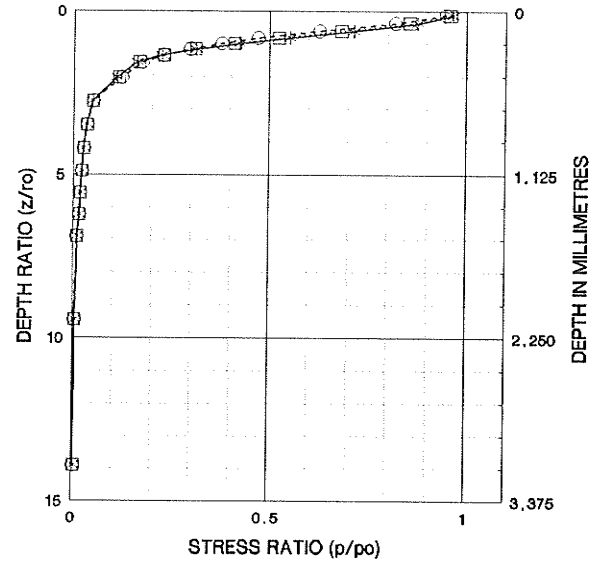
REGINA: RWY. 12-30: STA. 5 + 990 L

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

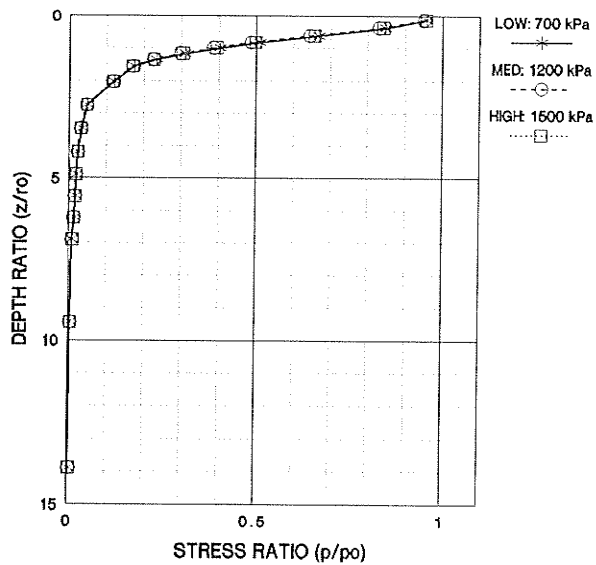
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

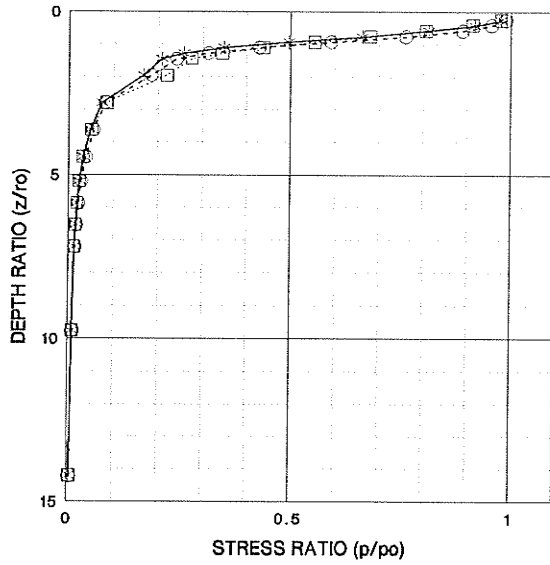


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

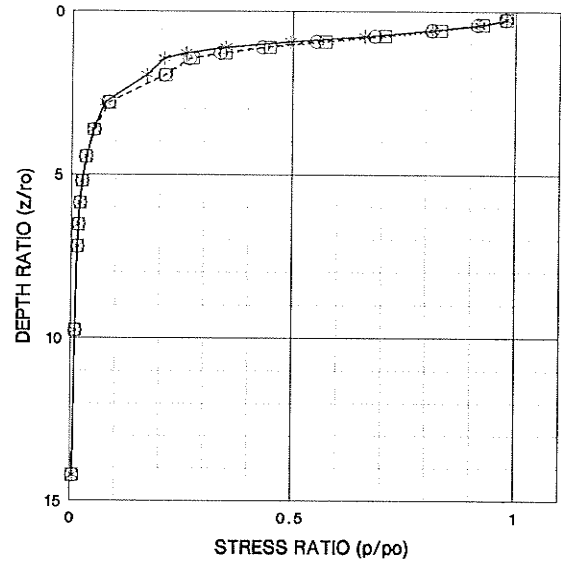
REGINA: RWY. 12-30: STA. 6 + 290 L

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

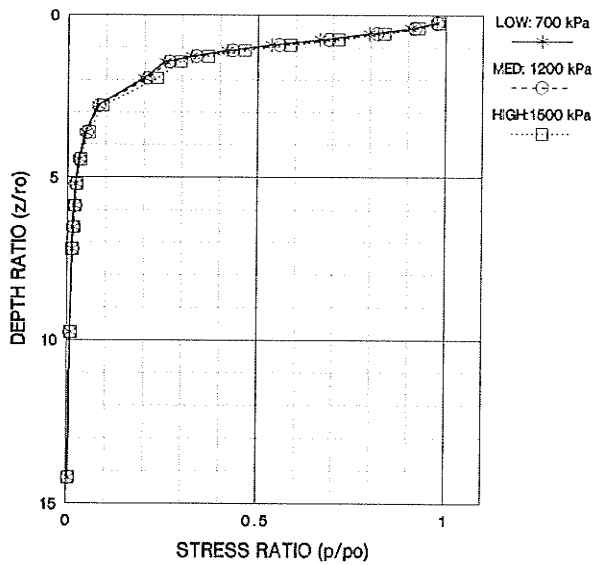
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

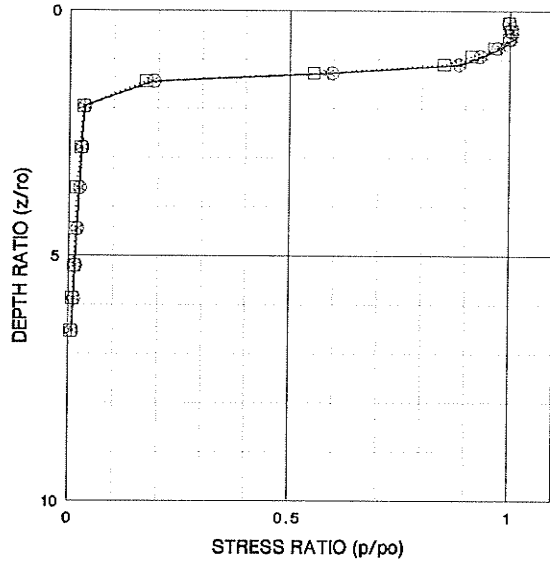


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

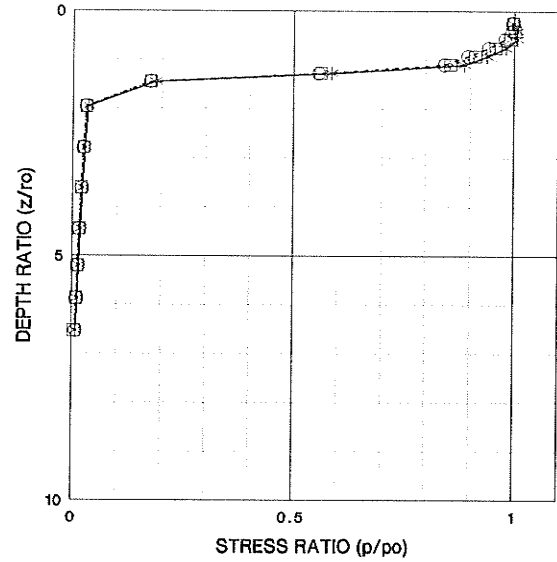
REGINA: RWY. 12-30: STA. 6 + 890 R

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

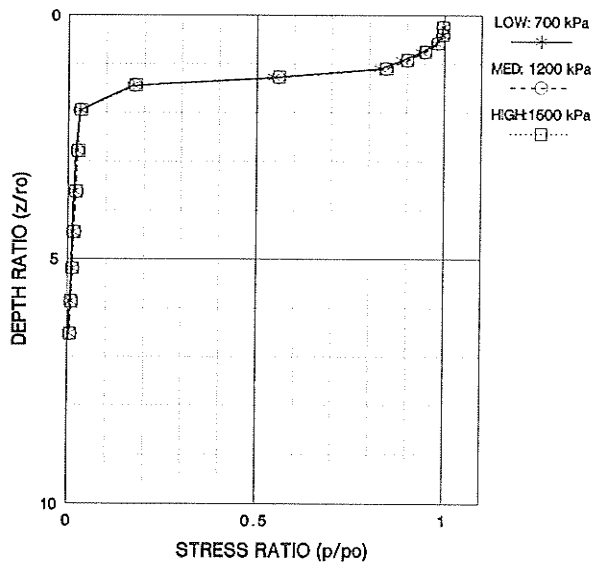
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

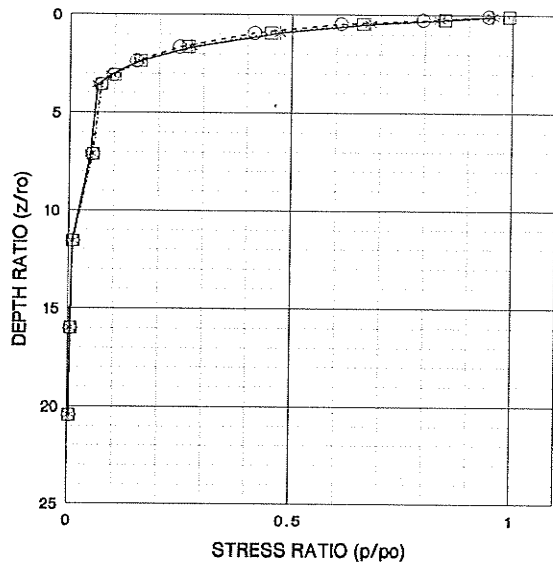


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

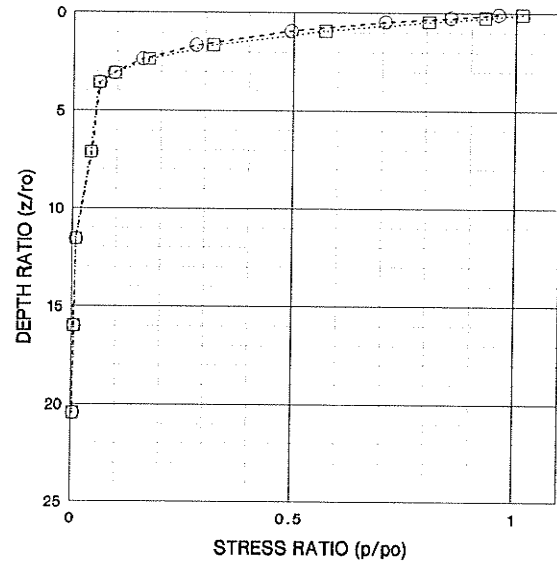
REGINA: RWY. 12-30: STA. 7 + 310 L

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

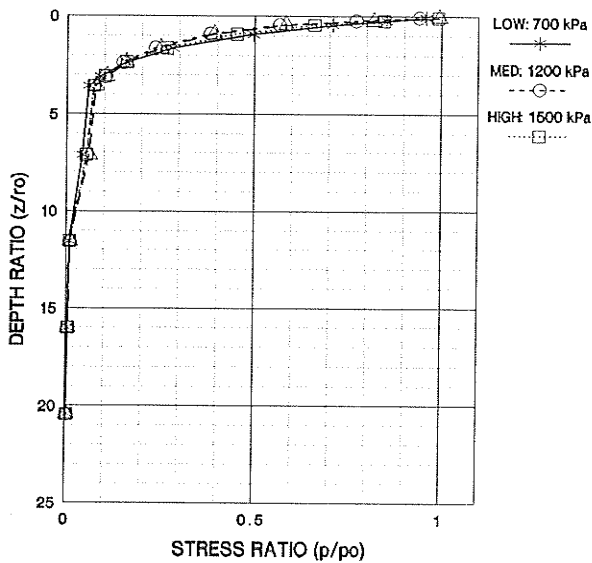
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

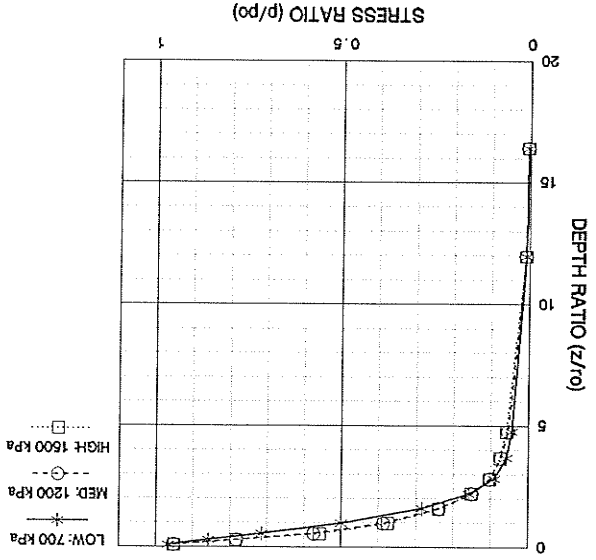


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

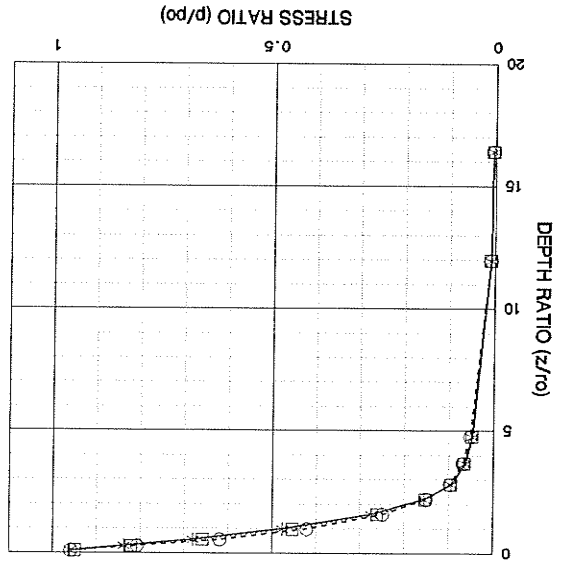
SASKATOON: RWY . 15-33:STA. 5 + 360 R

DISTRIBUTION OF VERTICAL STRESSES ON C. L. OF LOADS

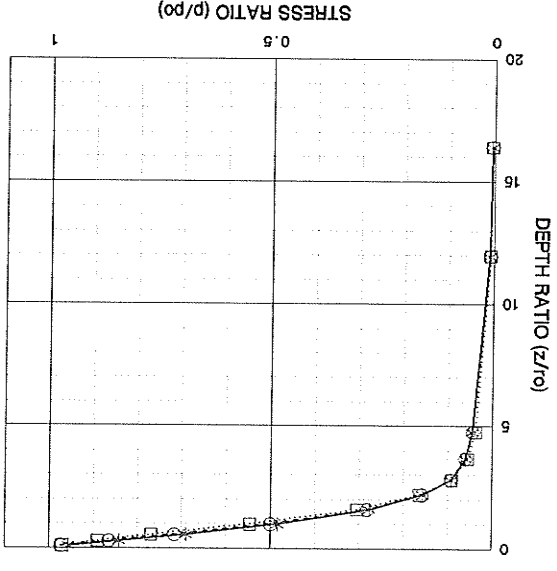
ANSYS FEM ANALYSIS : ISOTROPIC MODEL
 SASKATOON, R.WY. 15-33, STA. 5 + 630 R
 DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

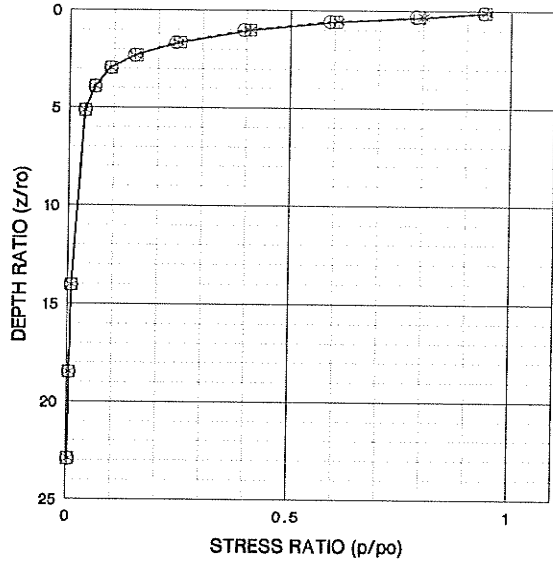


OPTIMIZING CRITERION: AREA OF DEFLECTION BASIN

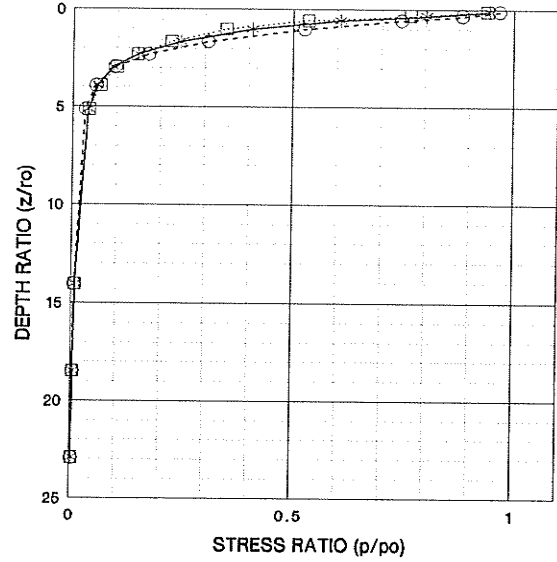


OPTIMIZING CRITERION: MAXIMUM DEFLECTION

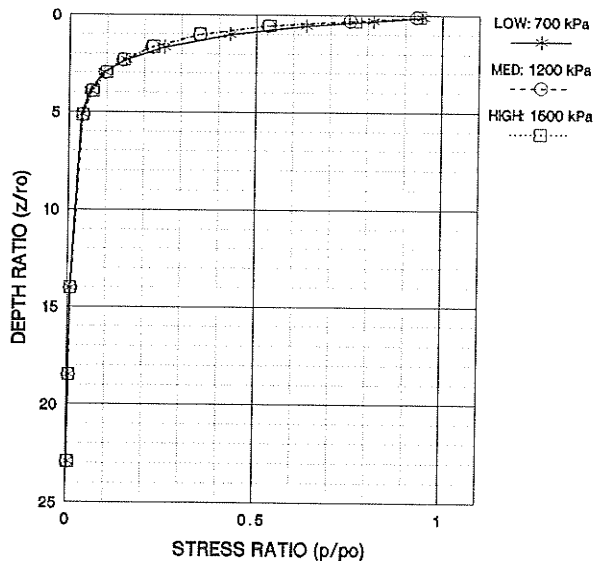
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

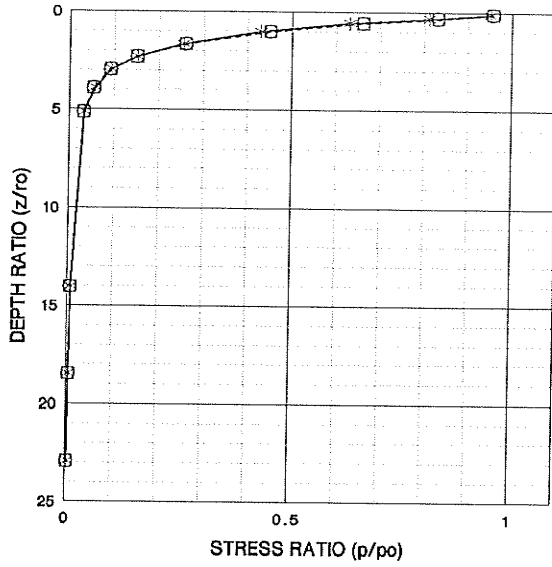


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

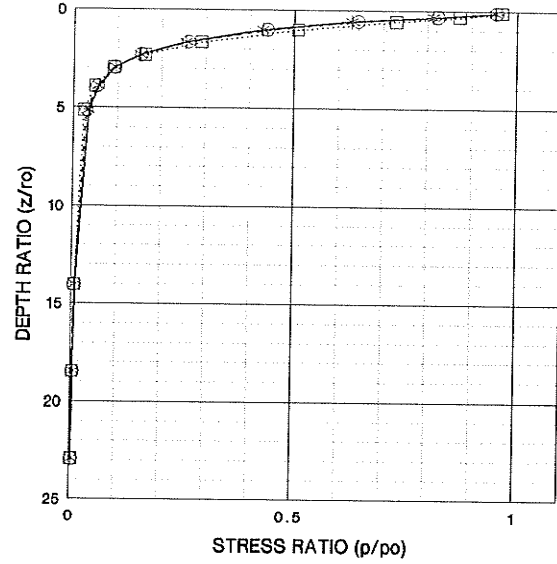
SASKATOON: RWY . 15-33:STA. 5 + 840 R

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

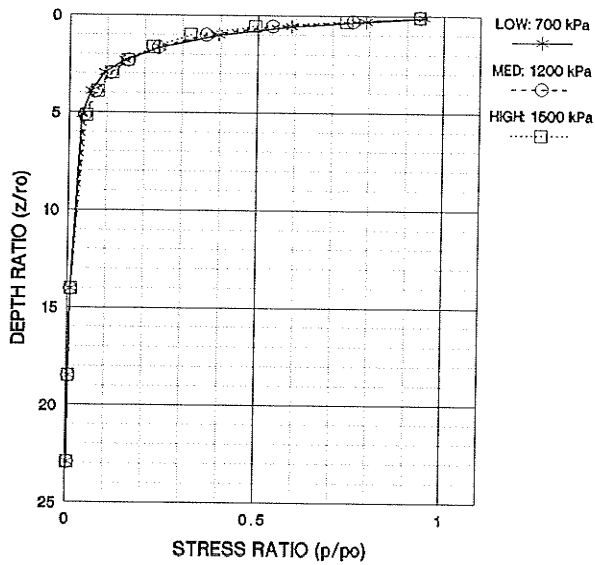
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

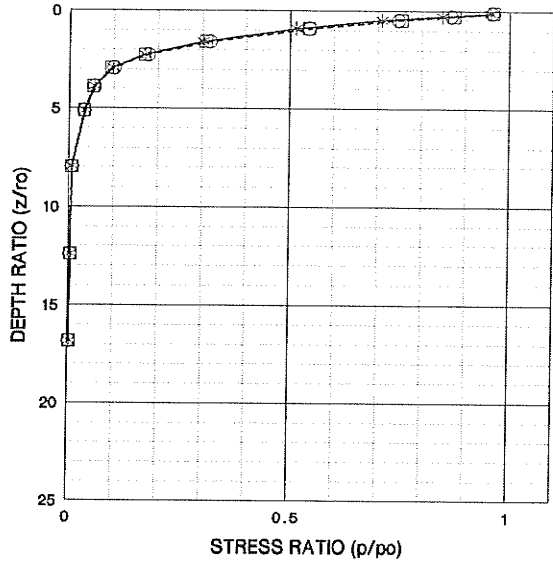


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

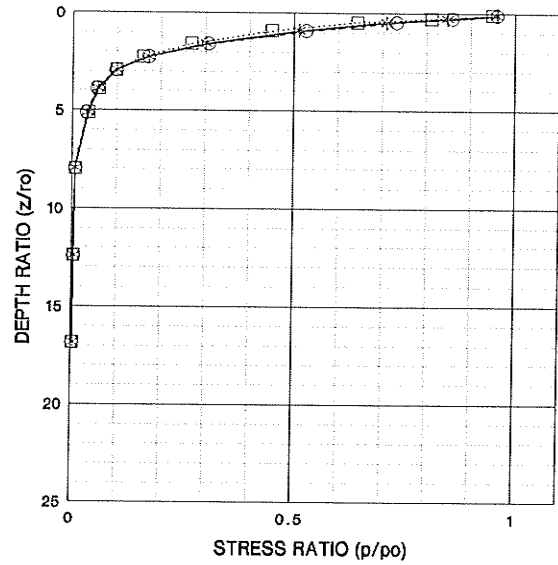
SASKATOON: RWY . 15-33:STA . 6 + 140 L

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

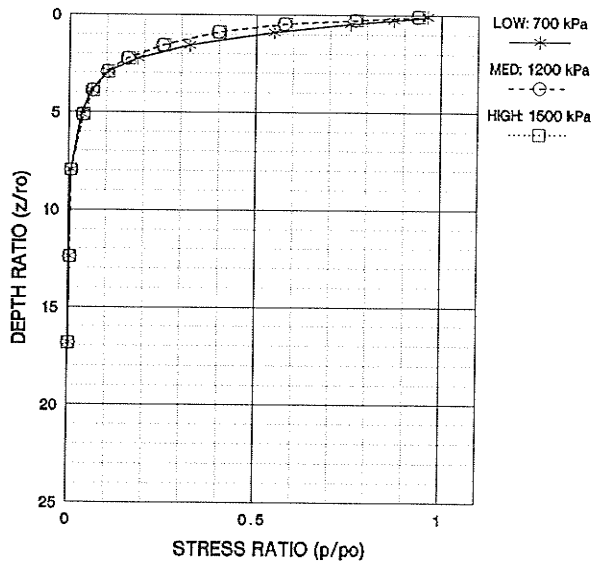
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

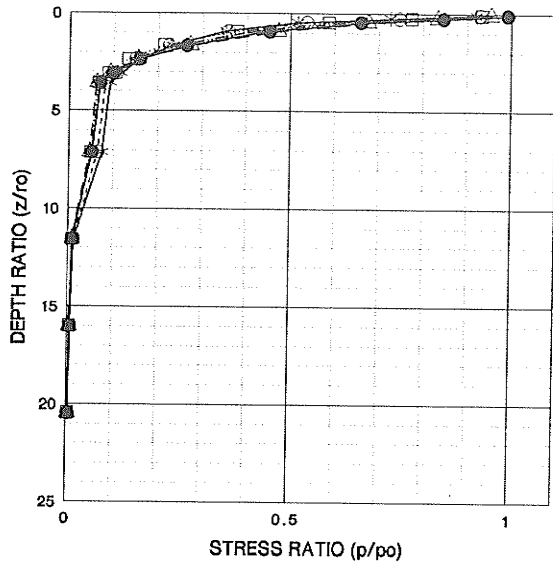


ANSYS FEM ANALYSIS : ISOTROPIC MODEL

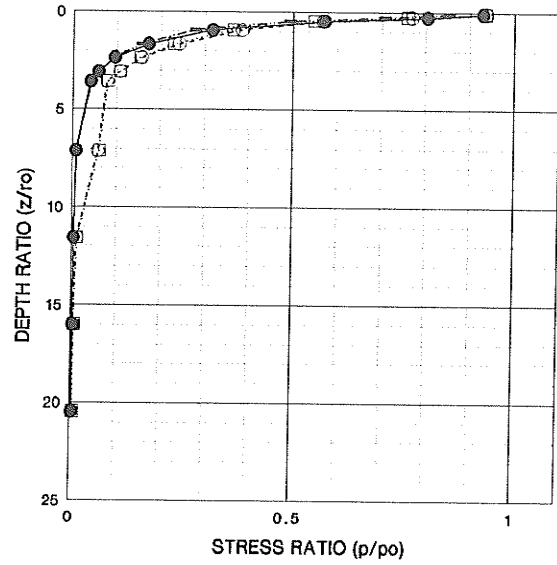
SASKATOON: RWY . 15-33.STA. 6 + 470 L

DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

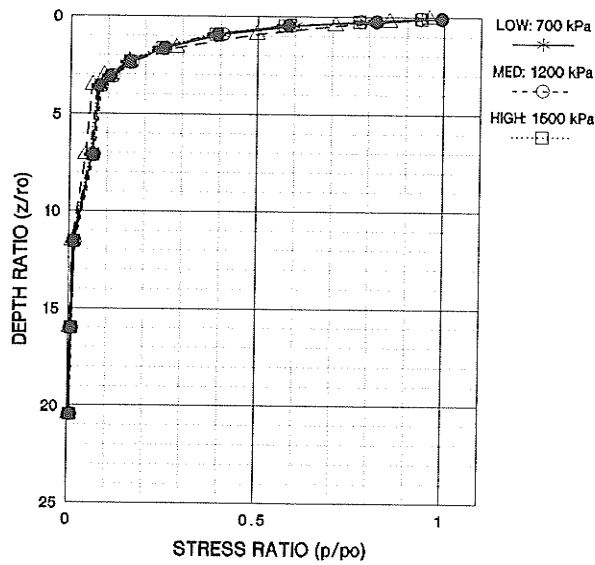
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

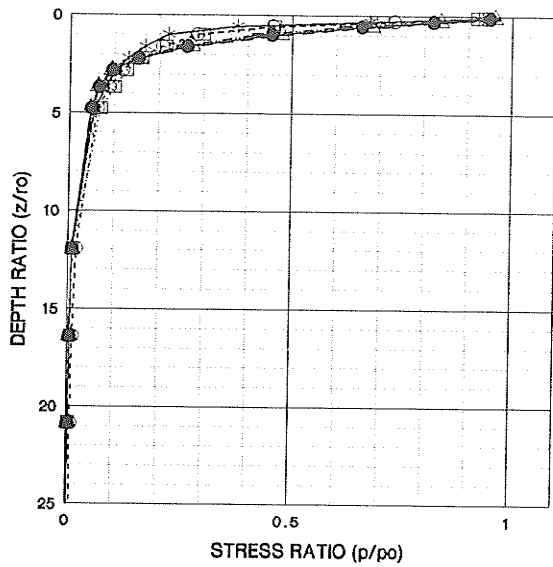


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

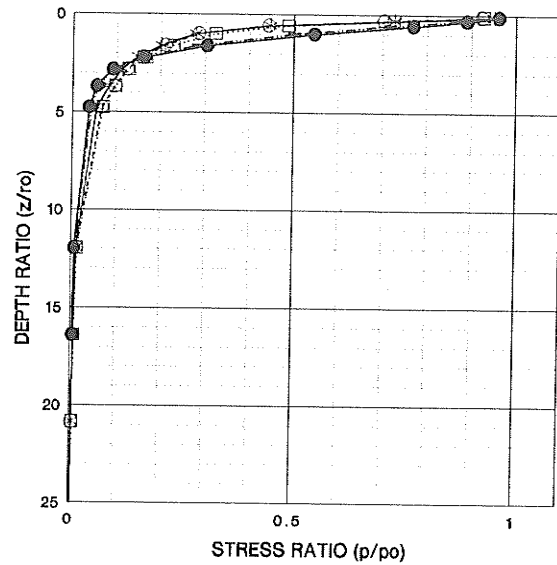


ANSYS FEM ANALYSIS
 SASKATOON: RWY. 15-33: STA. 5+ 360 R
 DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS
 (BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

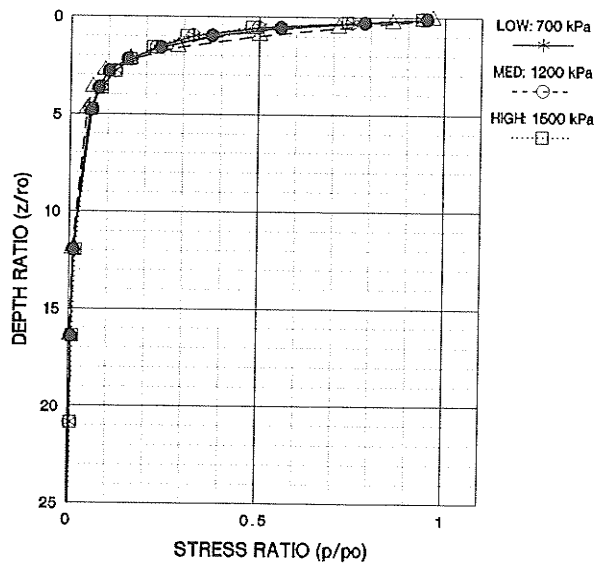
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION

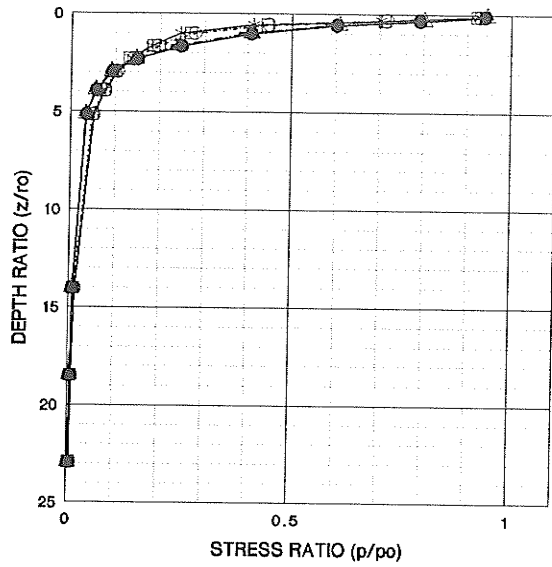


OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS

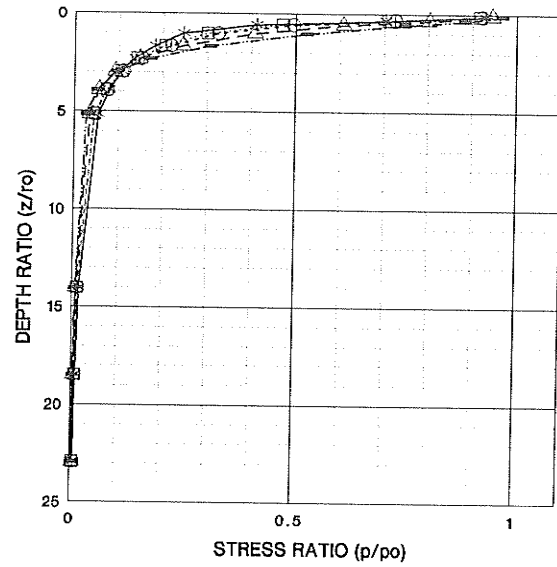


ANSYS FEM ANALYSIS
 SASKATOON: RWY . 15-33:STA. 5 + 630 R
 DISTRIBUTION OF VERTICAL STRESSES ON C. L. OF LOADS
 (BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

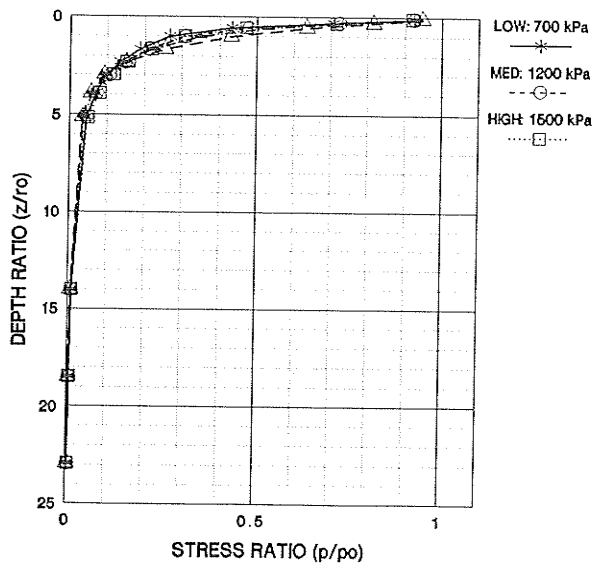
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



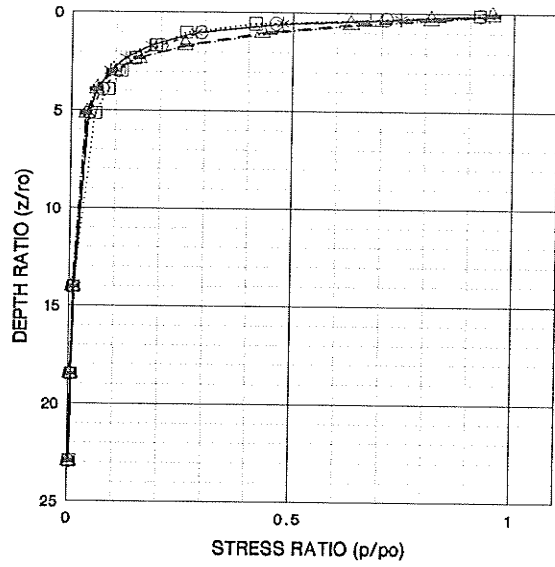
ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33 STA. 5 + 840 R

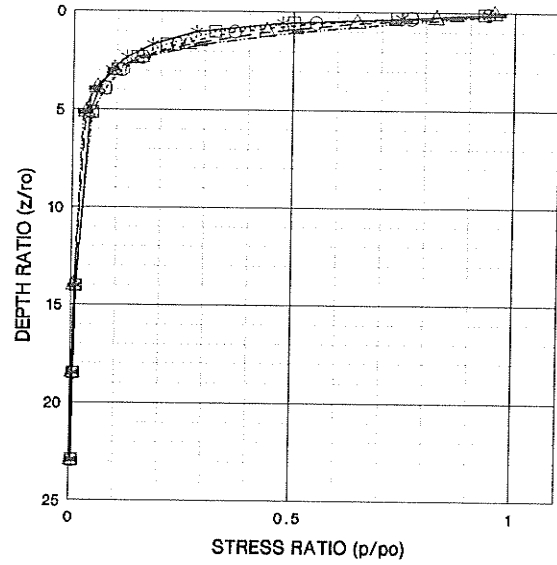
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

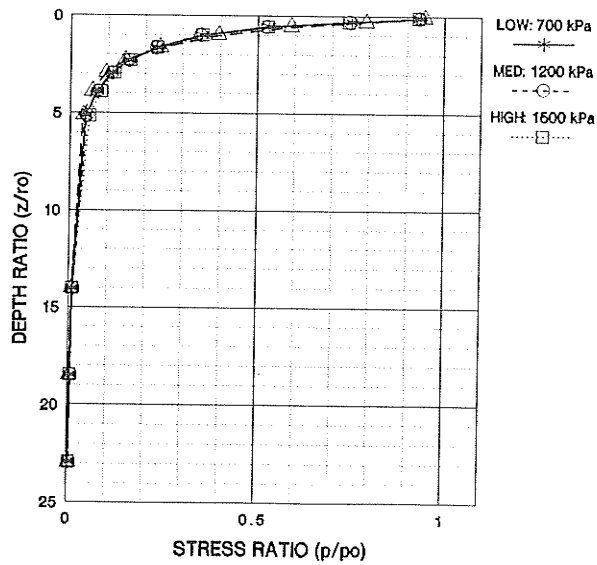
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



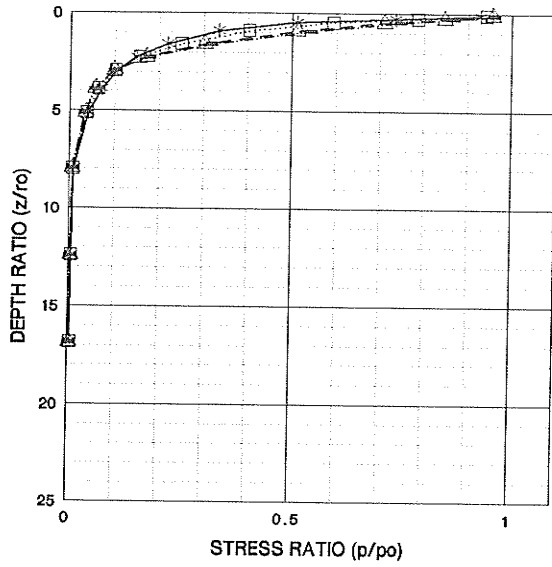
ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33: STA. 6 + 140 R

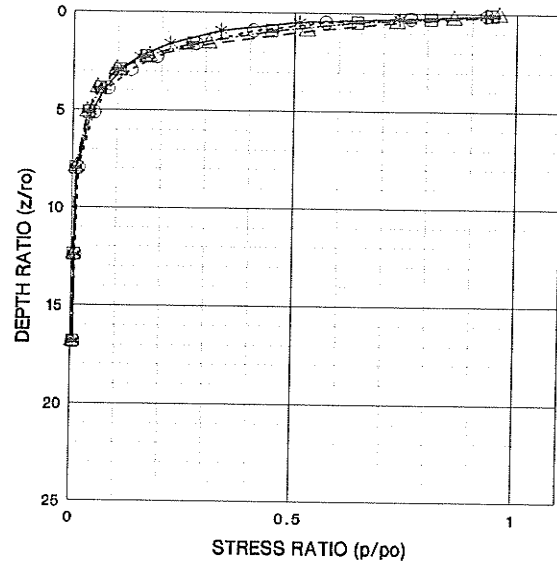
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

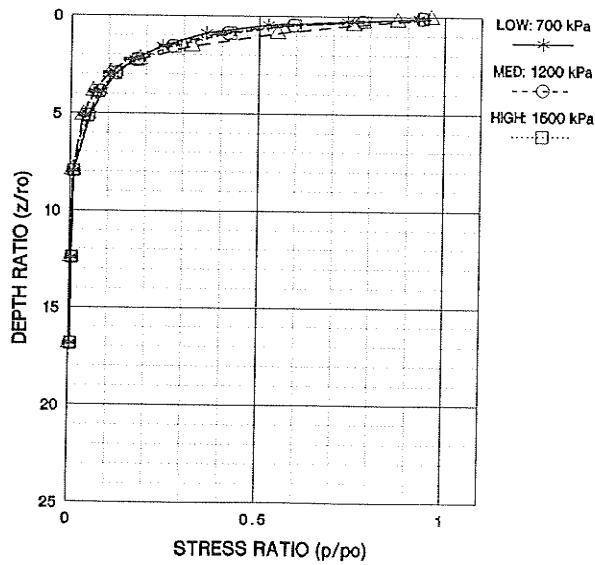
OPTIMIZING CRITERION: "AREA" OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



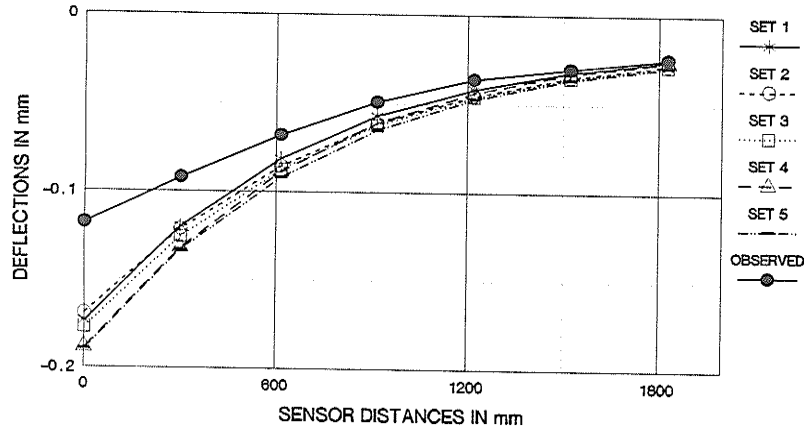
ANSYS FEM ANALYSIS

SASKATOON: RWY. 15-33: STA. 6 + 470 R

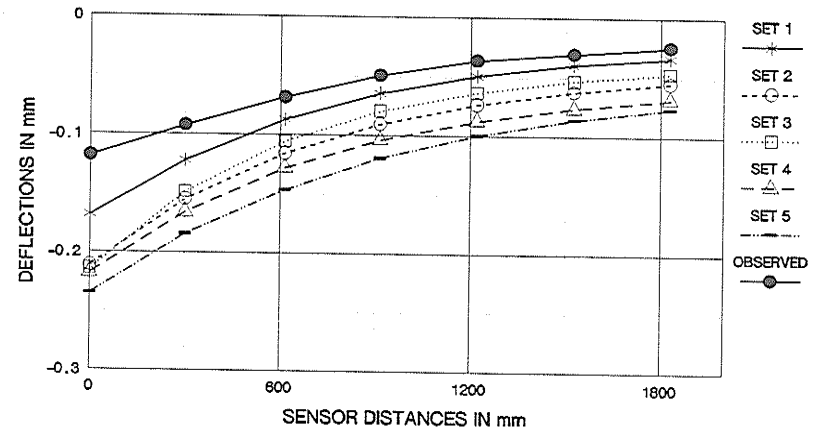
DISTRIBUTION OF VERTICAL STRESSES ON C.L. OF LOADS

(BOTH ISOTROPIC AND X-ANISOTROPIC MODELS)

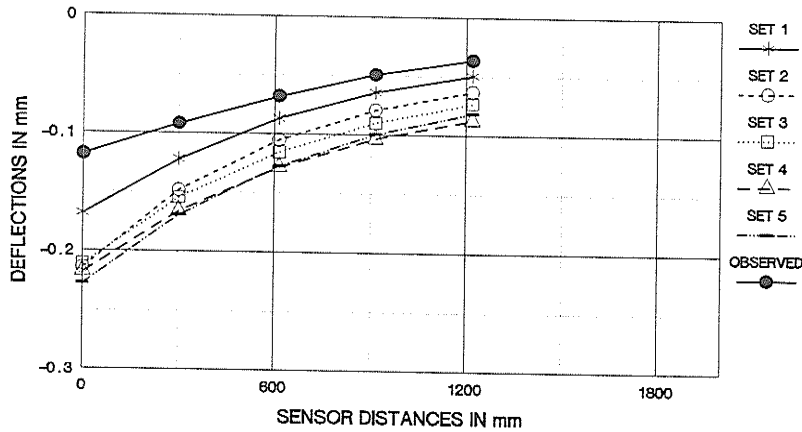
OPTIMIZING CRITERION: 'AREA' OF DEFLECTION BASIN



OPTIMIZING CRITERION: MAXIMUM DEFLECTION



OPTIMIZING CRITERION: RMS VALUE OF DEFLECTIONS



ANSYS FEM ANALYSIS : ISOTROPIC MODEL

THUNDER BAY: RWY. 12-30:STA. 5 + 100: LOAD 752 kPa

CALCULATED AND OBSERVED DEFLECTION BASINS