

Curved panel, no edge warping, axial bending allowed, input data for STAGSUNIT listed in Table 12

PA= 1.00000E+01 PB= 0.00000E+00 PX= 0.00000E+00

step 16 displacement u contours

Fig.28 nonlinear u in third stringer ; case=allenrns

Minimum value = 8.67310E-19, Maximum value = 2.88347E-02

Θ x 90.00

Θ y 0.00

Θ z -0.00

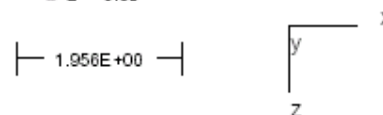


Fig. 28 STAGS prediction of overall axial bending at the design load, $PA = 10.0$ ($N_x = -1000$ lb/in), for the curved panel in which overall axial bending is permitted ($IBCX0XL = 0$ in the *.STG file that, via execution of the PANDA2 processor, STAGSUNIT, generates the *.bin and *.inp input files for STAGS) and in which in-plane warping of the panel skin is prevented along the four edges of the STAGS model. This plot shows the distribution of axial displacement u in the third stringer, counting stringers from the lower right-hand edge of Fig. 24. Displacement u is positive in the positive x -direction. In this figure the panel skin is attached to the lower longitudinal edge of the stringer. Overall upward bending in this picture corresponds to overall inward bending of the cylindrical panel shown in Figs. 22 – 25. If the reader holds a straight-edge connecting the two ends of the third stringer root in Fig. 22, he or she will clearly see the overall inward bending in that figure.