

2-bay flat panel without edge stiffeners: Input file, allenflat5.inp, is generated via Table 27

mode 1, pcr = 0.22827E+01

step 0 eigenvector deformed geometry

Fig.73 linear buckling of perfect shell from STAGS; case=allenflat5

1.758E+00

Fig. 73 STAGS prediction of linear buckling of a flat panel with two stringer bays. Stiffeners that run along the edges are not included in this model. The purpose of this two-stringer-bay STAGS model and those that follow is to determine the appropriateness of testing stiffened specimens that are very small compared to the size of the complete shell that these small specimens represent a part of. In this and all the results remaining in this report there is no overall axial bending (IBCX0XL = 1 in the *.STG file that, via execution of the PANDA2 processor, STAGSUNIT, generates the *.bin and *.inp input files for STAGS), and in-plane warping of the panel skin along the four edges of the STAGS model is prevented. The linear buckling mode displayed here is used as an initial imperfection shape with amplitude, Wimp = 0.001 inch, in the nonlinear static (INDIC=3) STAGS run to follow. Compare this figure with Fig. 67. Note that the buckling mode happens to have the opposite sign from that displayed in Fig. 67.