Equivalent stiffened ellipsoid, axisymmetric deformation, external p=460 ps

BIGBOSOR4 model

Axial Station (inches); -mode 1 initial imperfection shape is used

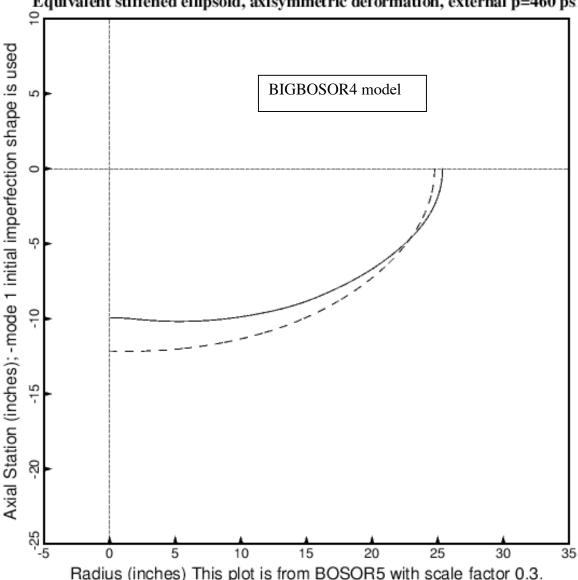Radius (inches) This plot is from BOSOR5 with scale factor 0.3.

Fig. 14 BIGBOSOR4 prediction of axisymmetric deformation of the optimized **imperfect isogrid-stiffened** equivalent ellipsoidal shell with an axisymmetric –mode 1 linear bifurcation buckling modal imperfection shape with amplitude, Wimp = –0.2 inches. The applied external pressure is the design pressure, p = 460 psi. The shape of the buckling modal imperfection is the **negative** of that displayed in Fig. 4. The maximum stresses and local buckling load factors of skin and meridionally oriented isogrid members computed by BIGBOSOR4 and associated with this deformation pattern are listed for each shell segment in Table 44. The –mode 1 imperfection shape is the most critical with respect to axisymmetric collapse of the shell, as demonstrated in Fig. 16. Compare with Fig. 82, which pertains to the optimized unstiffened equivalent ellipsoidal shell.