



Fig. 259 STAGS "soccerball" model of the optimized imperfect isogrid-stiffened equivalent ellipsoidal shell. The optimum design, listed in columns 2 and 3 of Table 33, was obtained with plus and minus axisymmetric ($n=0$) mode 1 and mode 2 linear buckling modal imperfection shapes with amplitude, $W_{\text{imp}} = 0.2$ inch. This is the non-axisymmetric ($n=1$ circumferential wave) linear buckling modal imperfection shape used as the $n = 1$ imperfection corresponding to the second six traces (traces 7-12) in Fig. 254. (This is the same buckling mode as that displayed in the previous figure). It is clear why the shell with this imperfection shape generates the extreme fiber meridional plastic strains shown in Figs. 255 and 256.