



Fig. 258 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, $W_{imp} = 0.2$ 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. Compare with the 360-degree STAGS model displayed in Fig. 7. The difference in the eigenvalue, 2.8645 here vs 3.0048 in Fig. 7, is caused primarily by the difference in the finite element used in the STAGS model: STAGS Element 480 here vs STAGS Element 410 in Fig. 7. Indicated in this figure is the location where normal inward-directed concentrated loads or displacements are imposed in a “ $\cos(\theta)$ ” distribution in order to produce a dent that **locally** resembles the negative of this linear buckling mode shape.