theta=90 deg.

Junction between Shell Segments 3 and 4 (Figs. 2, 169, 181, and 190)

theta=0 deg

1.000E+00
8.667E-01
7.333E-01
6.000E-01
4.667E-01
3.334E-01
2.000E-01
6.670E-02
-6.663E-02
-2.000E-01
-3.333E-01
-4.666E-01
-5.999E-01
-7.333E-01
-8.666E-01
-9.999E-01

Optimized thick-apex unstiffened equivalent ellipsoidal shell. "Crude" model with 480 elements
eig. 3, pcr(STAGS) =2.8337 x 460 =1303.5 psi; n=1 circumferential wave
step 0 eigenvector deformed geometry; "crude" model
linear buckling of perfect unstiffened 180-degree "soccerball" shell from STAGS: "crude" model
Contour plots of normal buckling modal displacement w

Θ x   -0.00
Θ y   0.00
Θ z   -0.00

9.900E+00

y

x

Fig. 191 Linear buckling mode from STAGS that corresponds to the third eigenvalue for the **optimized unstiffened equivalent ellipsoidal shell with the thick apex with t(apex) = 0.4 inch; the optimum design is listed in Table 78.** This is the same buckling mode as that depicted in the previous figure. Compare this "crude" 180-degree "soccerball" model with the more refined "soccerball" model displayed in Fig. 179. This is the linear buckling modal imperfection shape (with amplitude, Wimp = 0.2 inch) that leads to the load-deflection curve identified as the fourth trace in Fig. 188 and the mode of collapse under uniform external pressure shown in Fig. 192.