Refined STAGS model subtending 10 degrees of circumference. BIGBOSOR4 predicts that the maximum effective stress in Region 2 occurs at the junction of shell segments 7 and 8 and equals 117440 psi. See the +mode 1 part (first part) of Table 61.

1.125E+05
1.053E+05
9.799E+04
9.072E+04
8.344E+04
7.617E+04

Highest **inner** fiber stress shown here is at the junction between shell segments 9 and 10. The next figure shows that the highest outer fiber stress is at the junction between shell segments 7 and 8, which agrees with the BIGBOSOR4 prediction.

1.357E+05
1.269E+05
1.182E+05
1.094E+05
1.007E+05
9.193E+04
8.318E+04
7.443E+04
6.568E+04
5.693E+04
4.817E+04
3.942E+04
3.067E+04
2.192E+04
1.317E+04
4.417E+03

Crude 360-degree STAGS model

Note the big difference between the predictions for maximum stress from the crude and refined STAGS models.

Optimized unstiffened equivalent ellipsoidal shell
PA= 1.0: applied external pressure = PA x 460 = 460 psi
step 9 fabrication system, seff, layer 2, inner fiber
nonlinear effective stress in shell skin - layer 2 inner fiber
eqellipse.unstiffened.opm4 with a +mode 1 imperfection, Wimp=+0.2 inch

Θ x -35.84
Θ y -13.14
Θ z   35.63

8.115E+00

Fig. 86 STAGS models predicting **inner fiber effective stress, seff (psi),** in the externally pressurized, optimized **imperfect unstiffened** equivalent ellipsoidal shell with a **+mode 1** axisymmetric buckling modal imperfection (BIGBOSOR4 model in Fig. 74 and STAGS model in Fig. 76) with amplitude, Wimp=0.2 inch. The refined STAGS model shown at the top of this figure presents converged results. The fringe plot of effective stress in the refined STAGS model shown at the top of this figure does not include conditions near the pole.