



Fig. 53 Optimization via SUPEROPT of the **imperfect isogrid-stiffened** equivalent ellipsoidal shell with the use of plus and minus axisymmetric **mode 1, mode 2, mode 3, and mode 4** imperfection shapes with amplitude, $W_{imp} = 0.2$ inch. The starting design is the same as that for Fig. 51. This time the SUPEROPT run was allowed to proceed until completion eight days after launch on the efficient LINUX machine where this work was done. The optimum design and design margins are listed in Table 52. Here, $IMOVE = 1$ (the preferred choice in the *OPT file) except where GENOPT automatically and temporarily changes $IMOVE$ from 1 to 4 (move limit of each decision variable is temporarily reduced from 10 per cent to 2 per cent) at about Iterations No. 150, 300 and 450 (where the relatively “quiet” regions in this figure exist), as described in Section 8.1.2. See Items 730 and 740 for more information on $IMOVE$.