

□ (STFST1A(1,2)/STFST1(1,2))/STFST1F(1,2)-1; F.S.=1.0; stiffener stress,+mode1,region2
 ○ (SKNST2A(1,2)/SKNST2(1,2))/SKNST2F(1,2)-1; F.S.=1.0; skin stress,+mode2,region2
 △ (STFST2A(1,1)/STFST2(1,1))/STFST2F(1,1)-1; F.S.=1.0; stiffener stress,+mode2,region1
 + (STFST2A(1,2)/STFST2(1,2))/STFST2F(1,2)-1; F.S.=1.0; stiffener stress,+mode2,region2
 × (CLAPS1(2)/CLAPS1A(2))/CLAPS1F(2)-1; F.S.=1.0; nonlinear collapse,-mode1
 ◇ (SKNST1A(2,1)/SKNST1(2,1))/SKNST1F(2,1)-1; F.S.=1.0; skin stress,-mode1,region1
 ▽ (SKNST1A(2,2)/SKNST1(2,2))/SKNST1F(2,2)-1; F.S.=1.0; skin stress,-mode1,region2
 ⊠ (STFST1A(2,1)/STFST1(2,1))/STFST1F(2,1)-1; F.S.=1.0; stiffener stress,-mode1,region1
 × (STFST1A(2,2)/STFST1(2,2))/STFST1F(2,2)-1; F.S.=1.0; stiffener stress,-mode1,region2
 ⊕ (SKNST2A(2,1)/SKNST2(2,1))/SKNST2F(2,1)-1; F.S.=1.0; skin stress,-mode2,region1
 ⊞ (STFST2A(2,1)/STFST2(2,1))/STFST2F(2,1)-1; F.S.=1.0; stiffener stress,-mode2,region1
 ⊞ (STFST2A(2,2)/STFST2(2,2))/STFST2F(2,2)-1; F.S.=1.0; stiffener stress,-mode2,region2
 ⊞ (STFST1A(3,1)/STFST1(3,1))/STFST1F(3,1)-1; F.S.=1.0; stiffener stress,+mode3,region1
 ⊞ (STFST1A(3,2)/STFST1(3,2))/STFST1F(3,2)-1; F.S.=1.0; stiffener stress,+mode3,region2
 ⊞ (SKNST2A(3,2)/SKNST2(3,2))/SKNST2F(3,2)-1; F.S.=1.0; skin stress,+mode4,region2
 ● (STFST2A(3,2)/STFST2(3,2))/STFST2F(3,2)-1; F.S.=1.0; stiffener stress,+mode4,region2
 ○ (STFST1A(4,1)/STFST1(4,1))/STFST1F(4,1)-1; F.S.=1.0; stiffener stress,-mode3,region1
 □ (STFST1A(4,2)/STFST1(4,2))/STFST1F(4,2)-1; F.S.=1.0; stiffener stress,-mode3,region2
 ■ (STFST2A(4,2)/STFST2(4,2))/STFST2F(4,2)-1; F.S.=1.0; stiffener stress,-mode4,region2

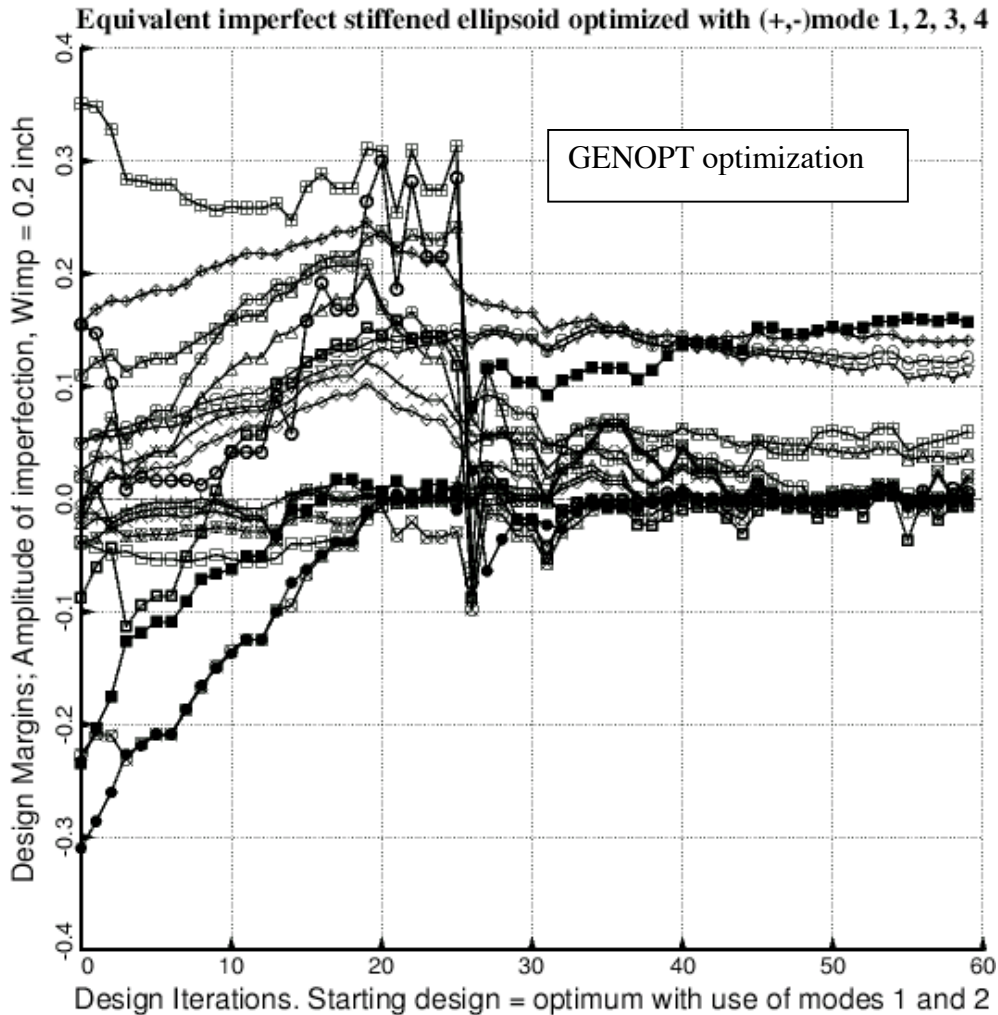


Fig. 52 **Imperfect isogrid-stiffened shell**. The most critical margins during optimization cycles with use of plus and minus axisymmetric **mode 1, mode2, mode 3, and mode 4** imperfection shapes with amplitude, Wimp=0.2 inch. The SUPEROPT processor was deliberately terminated after running 24 hours on the LINUX workstation where this work was done. IMOVE = 4 in this SUPEROPT run. (See Items 730, 740 in Table a24).