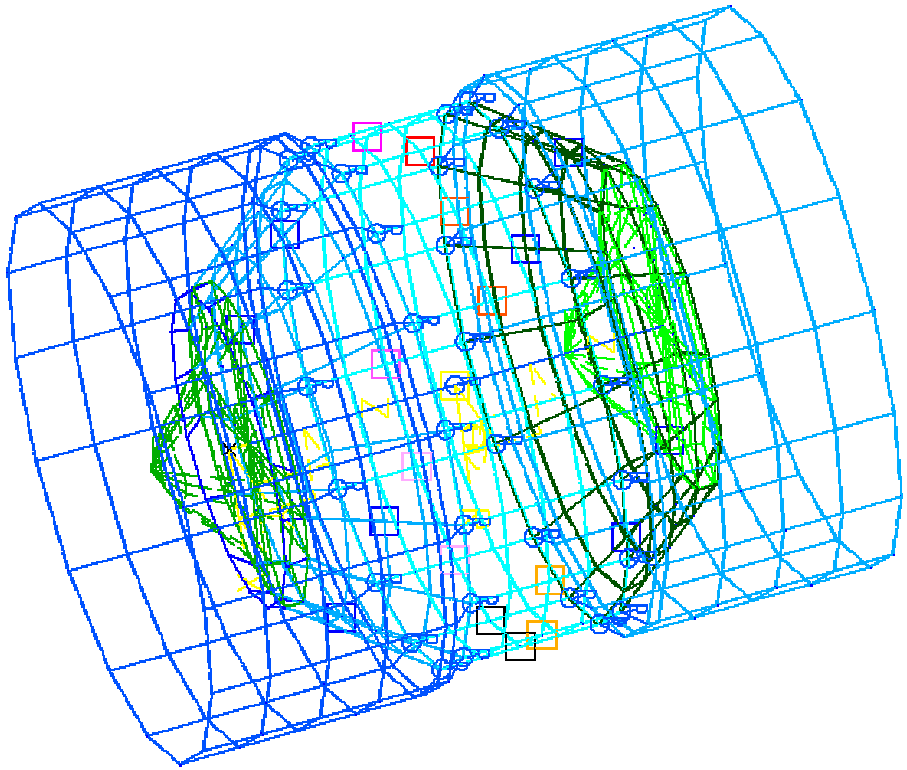
STRUCTURE & MECHANISMS

Structure:

- Carbon-fibre primary structure for minimum thermal distortions, designed to:
  - Pegasus specifications, with large margins (first frequency > 40 Hz)
  - current mass budget (250 kg) plus 20% system margin
- 500-node finite element model built; dynamic analysis performed; local panel instabilities addressed
- Compact and stiff design. Normal modes at launch: 49 Hz (axial), 66 Hz (lateral)
- Total structural mass: 57 kg including 20% margin
- No problem from static circumferential (spin) load, even for solar cells

Mechanisms:

- PGB Launch-lock, one-shot
- S-band antenna deployment, one-shot
- Passive compensation of thermal expansion/contraction



First axial mode eigenvector plot (longitudinal 'bounce')