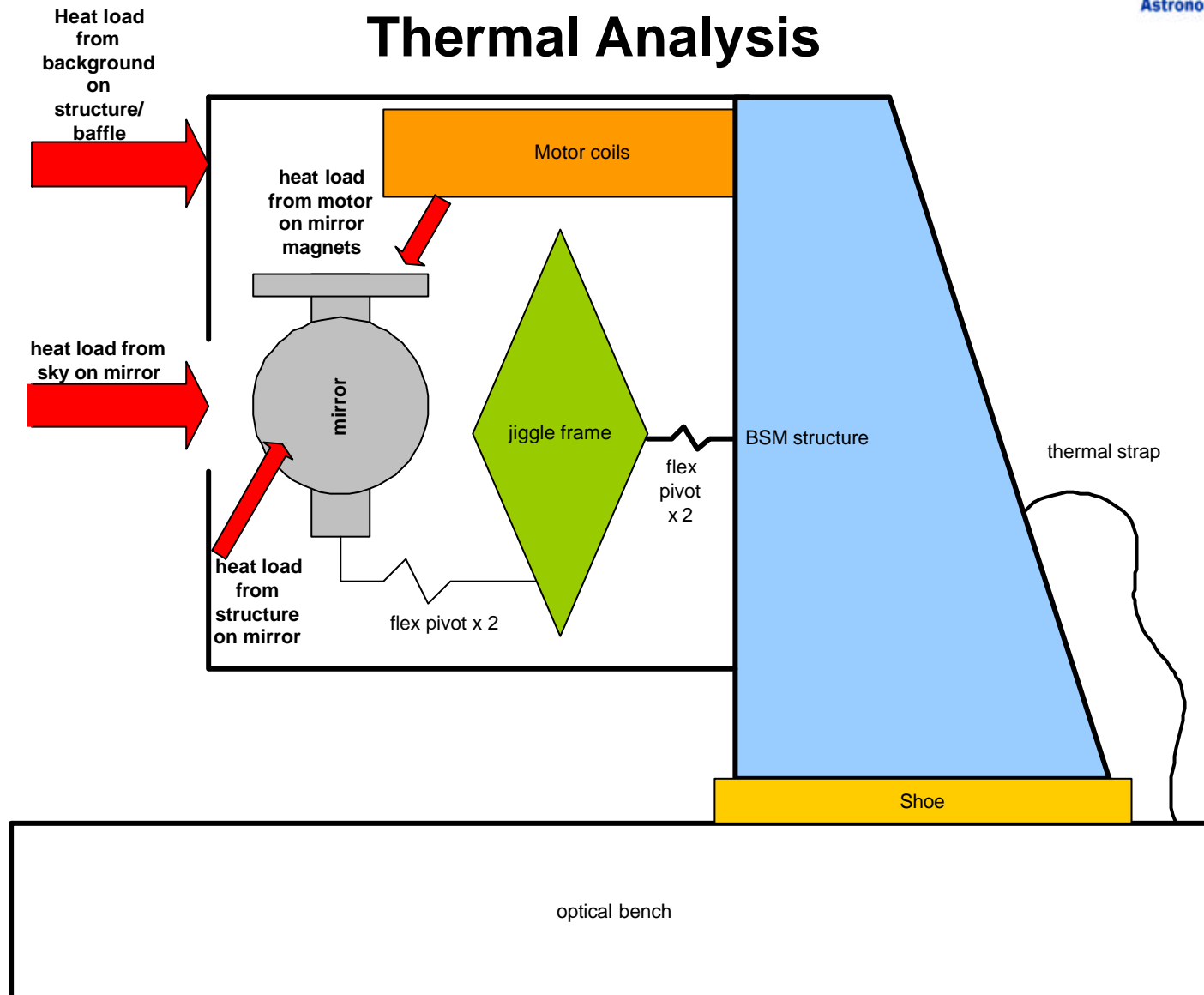


BSM Thermal Design

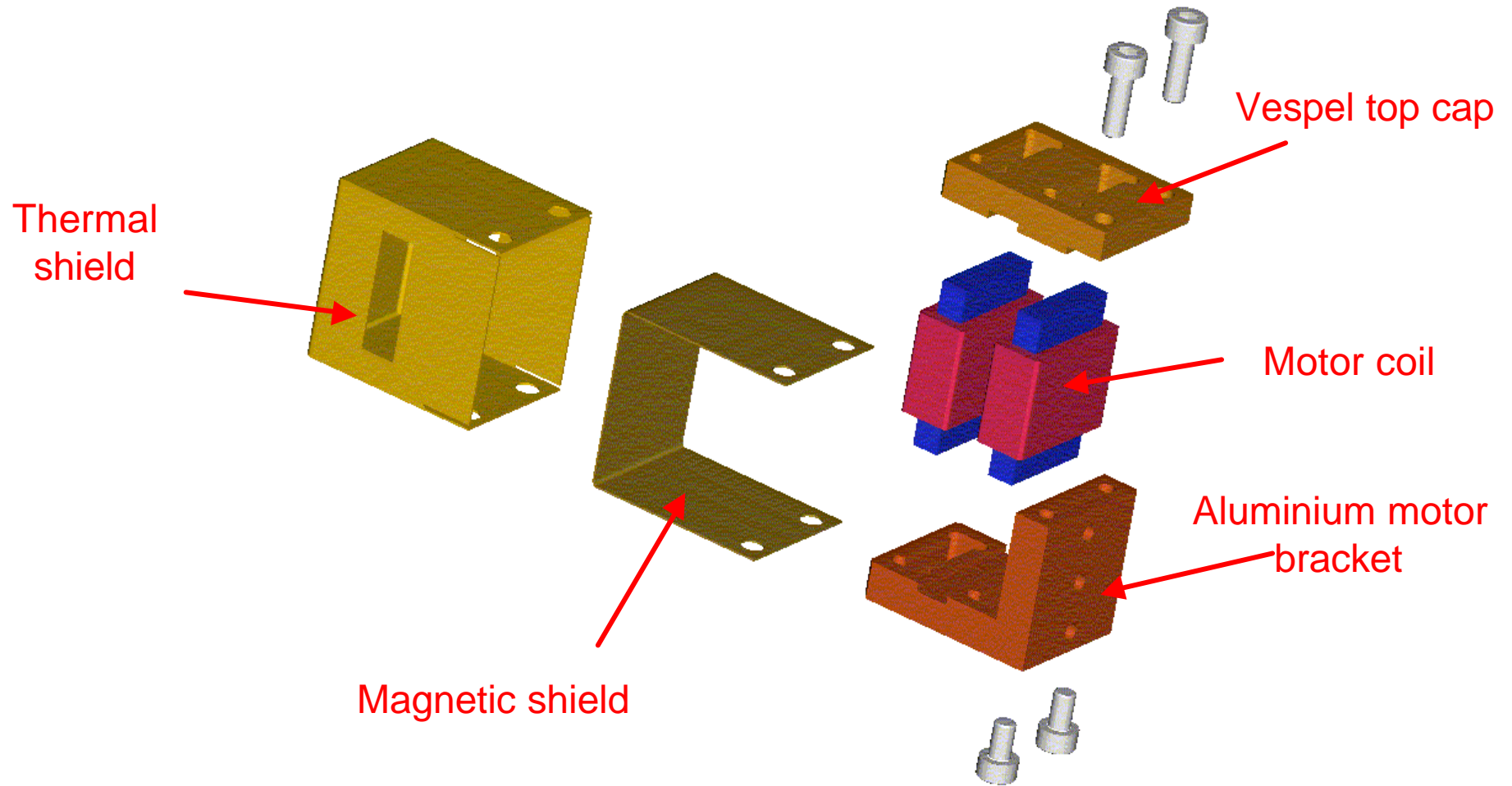
Ian Pain

Doc pack sec.2, p35-40

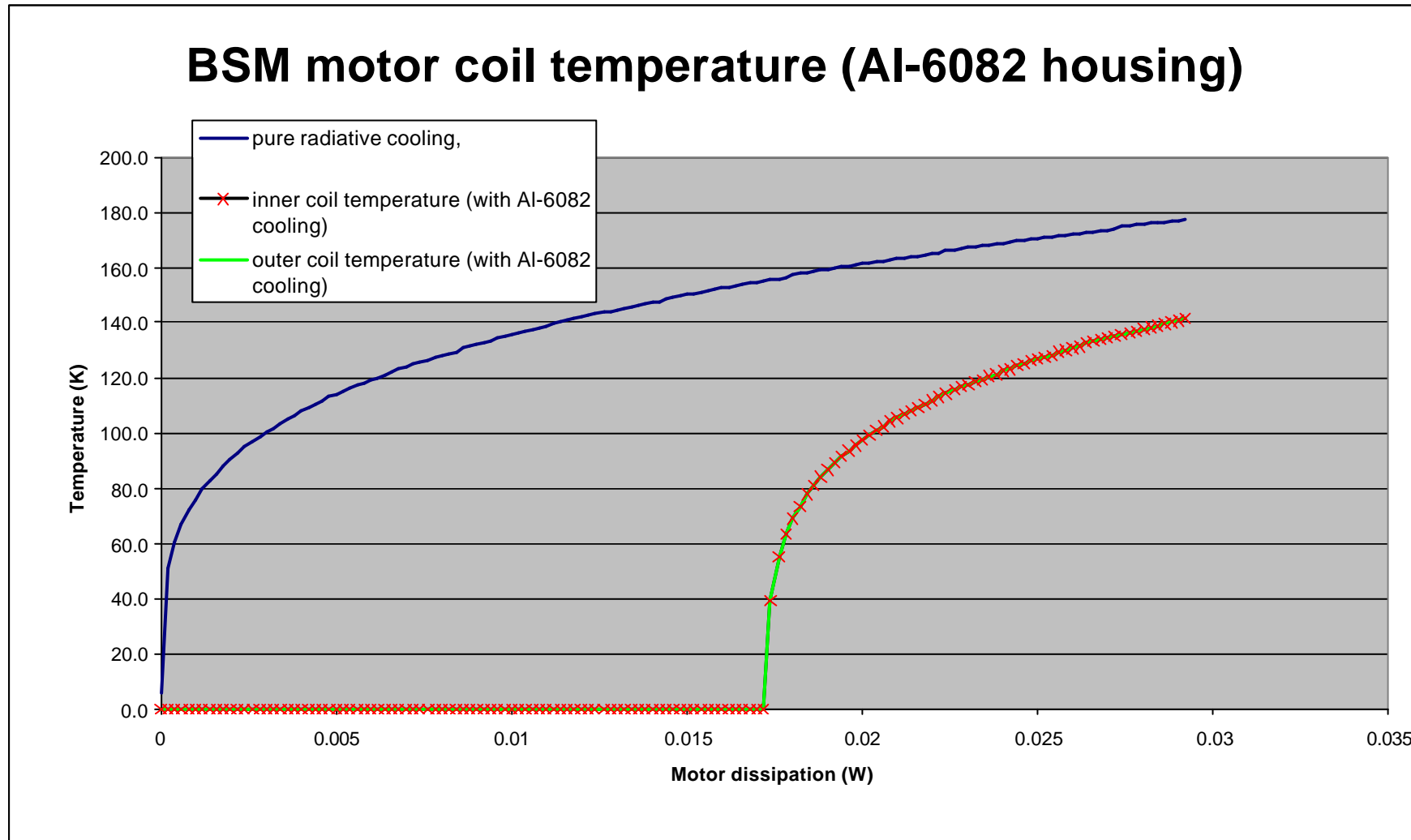
Thermal Analysis



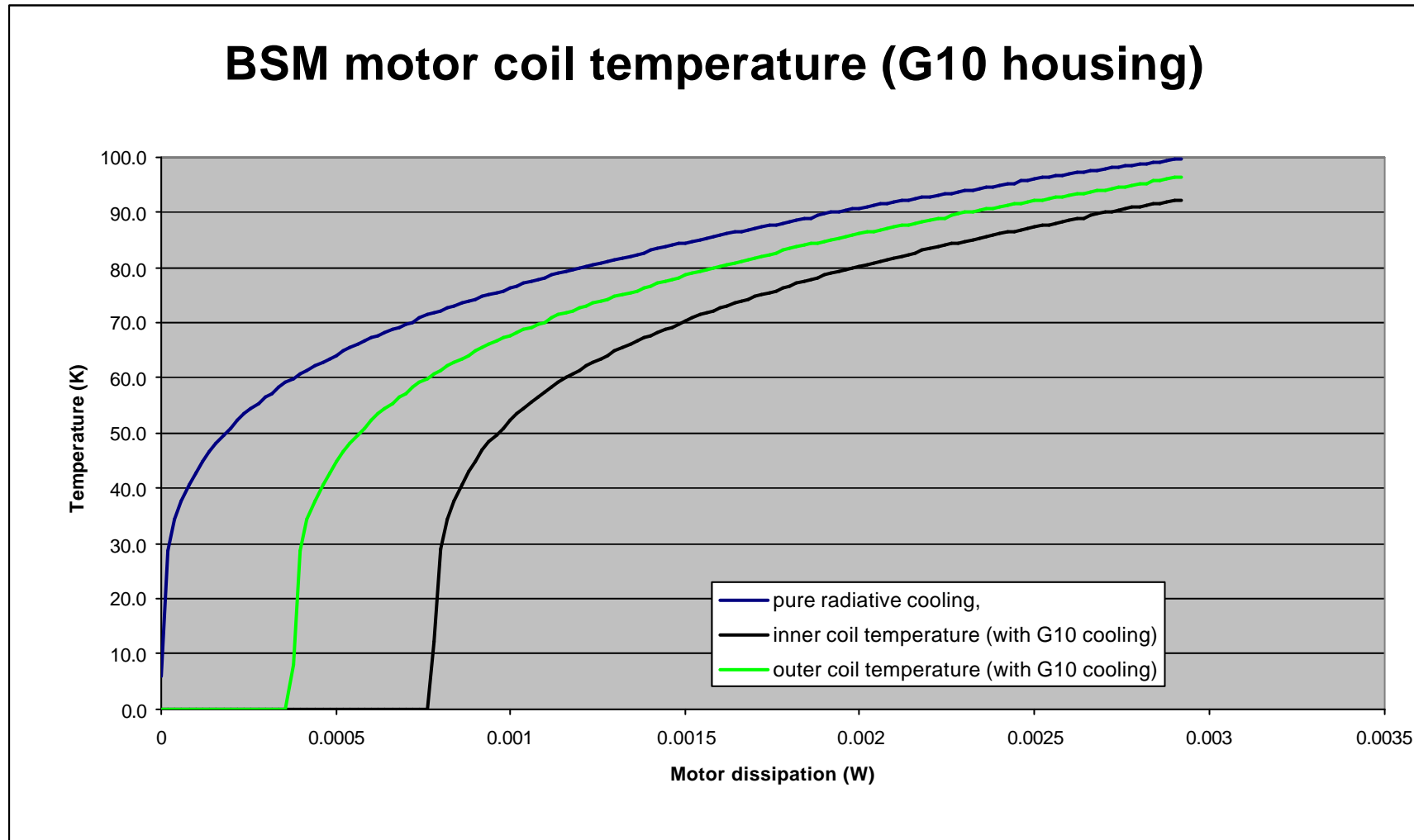
Motor Thermal Analysis



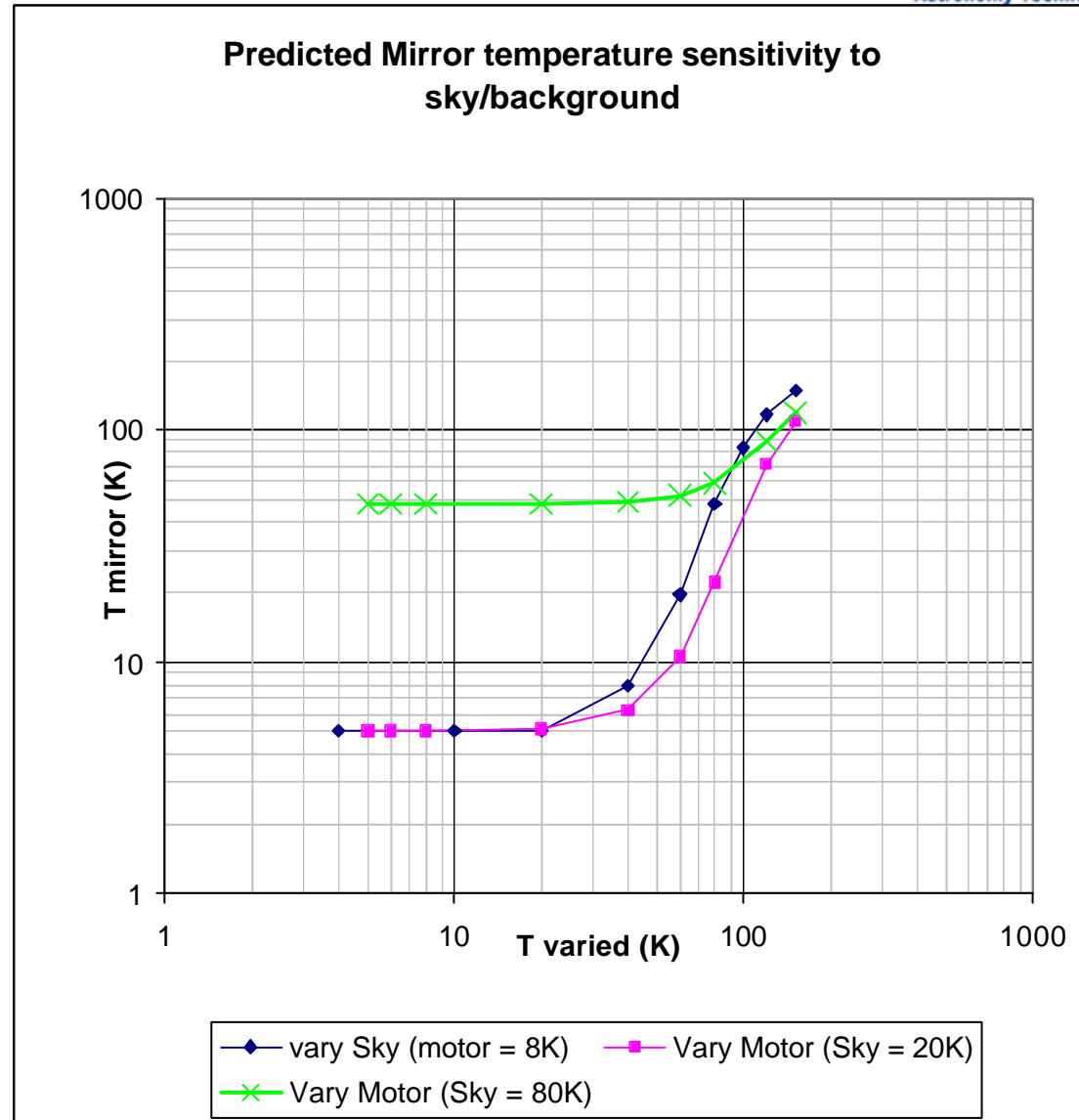
Motor Thermal Analysis



Motor Thermal Analysis



Mirror Thermal Analysis



Assumes mirror does not reject incoming heat load (conservative)

Thermal Summary

- **Motor**
 - temperatures can be held at $<1\text{K}$ above BSMs temperature
 - Thermal Shield will catch any hot spots.
- **Mirror**
 - with cryostat background temperatures of $>30\text{K}$ the specification that the mirror 'not exceed the BSMs temperature by $>1\text{K}$ ' would not be met.
 - For tests, this may require that a thermal IR filter be fitted to the test cryostat radiation shield, or that the temperature validation tests are performed with the radiation shield aperture closed.