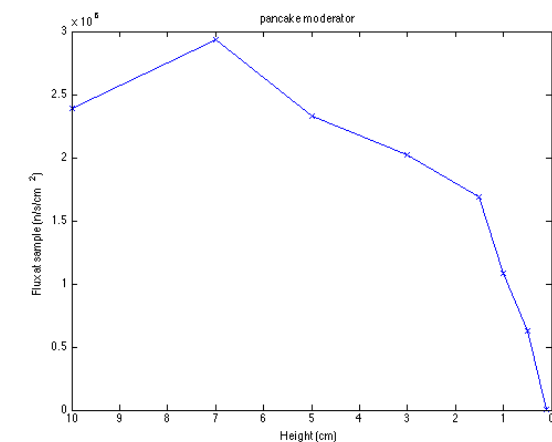
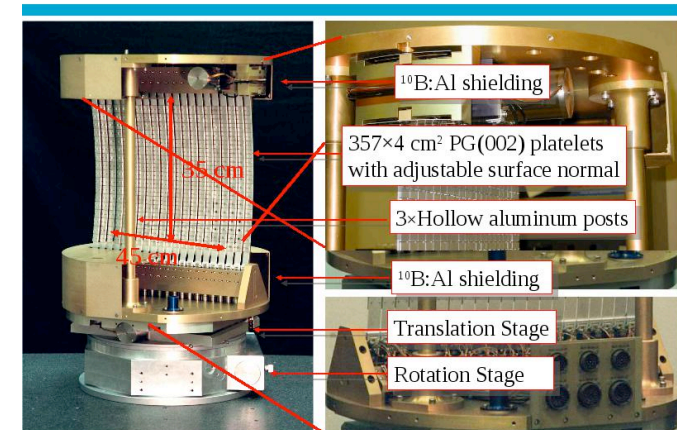


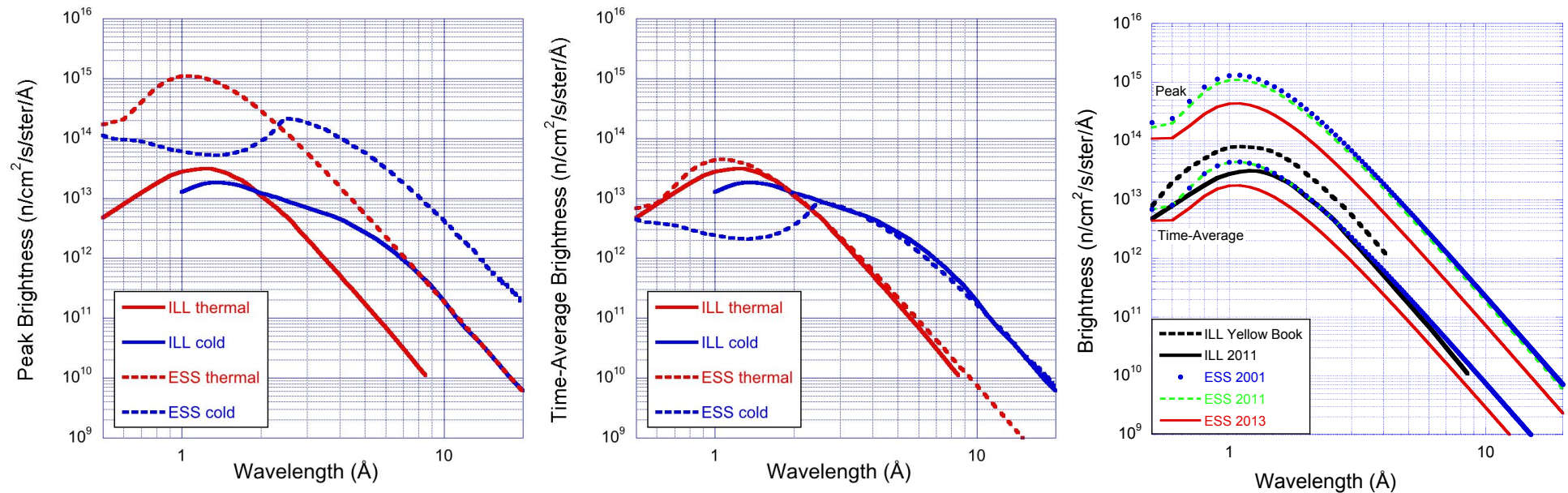
# MODI – Pulsed, Monochromatic Powder Diffractometer

- Bucket moderator: 2 approaches
  - Simple expanding guide
  - Virtual source if beam tailoring with choppers required
- Pancake moderator: 2 approaches
  - Simple expanding guide
  - Virtual source if beam tailoring required
- Pancake requires transport of higher divergence
  - Difficult + expensive for short wavelength neutrons
  - Limited by total neutron emission
  - Loss in performance below 7 cm
  - Inhomogeneous divergence profile
  - Guide must approach moderator surface to accept divergence

*The MACS monochromator*



# Thermal Moderator Performance



- 2013 baseline cf. 2011 **loss factor 2-2.2** over thermal range
- Total neutron emission also important
- REQUIREMENT: Boost thermal moderator performance
- REQUIREMENT: Retain or increase total neutron emission cf. Bucket moderator
- REQUIREMENT: Do not compromise thermal moderator performance to boost cold performance
- REQUIREMENT: Clarify minimum start position for a guide