National Synchrotron Radiation Research Center

Heat Load Study of BL13B1 at NSRRC

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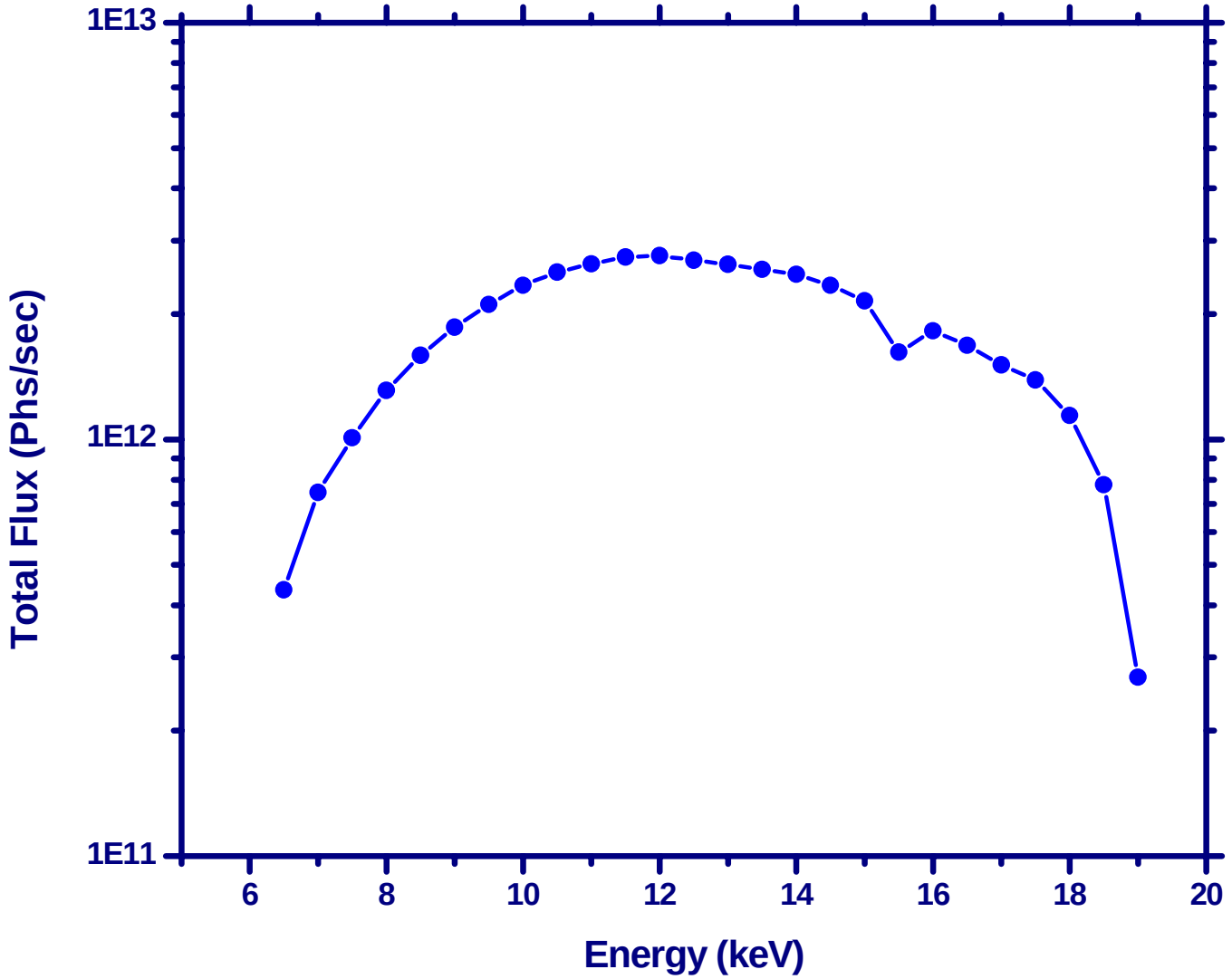
2005/09

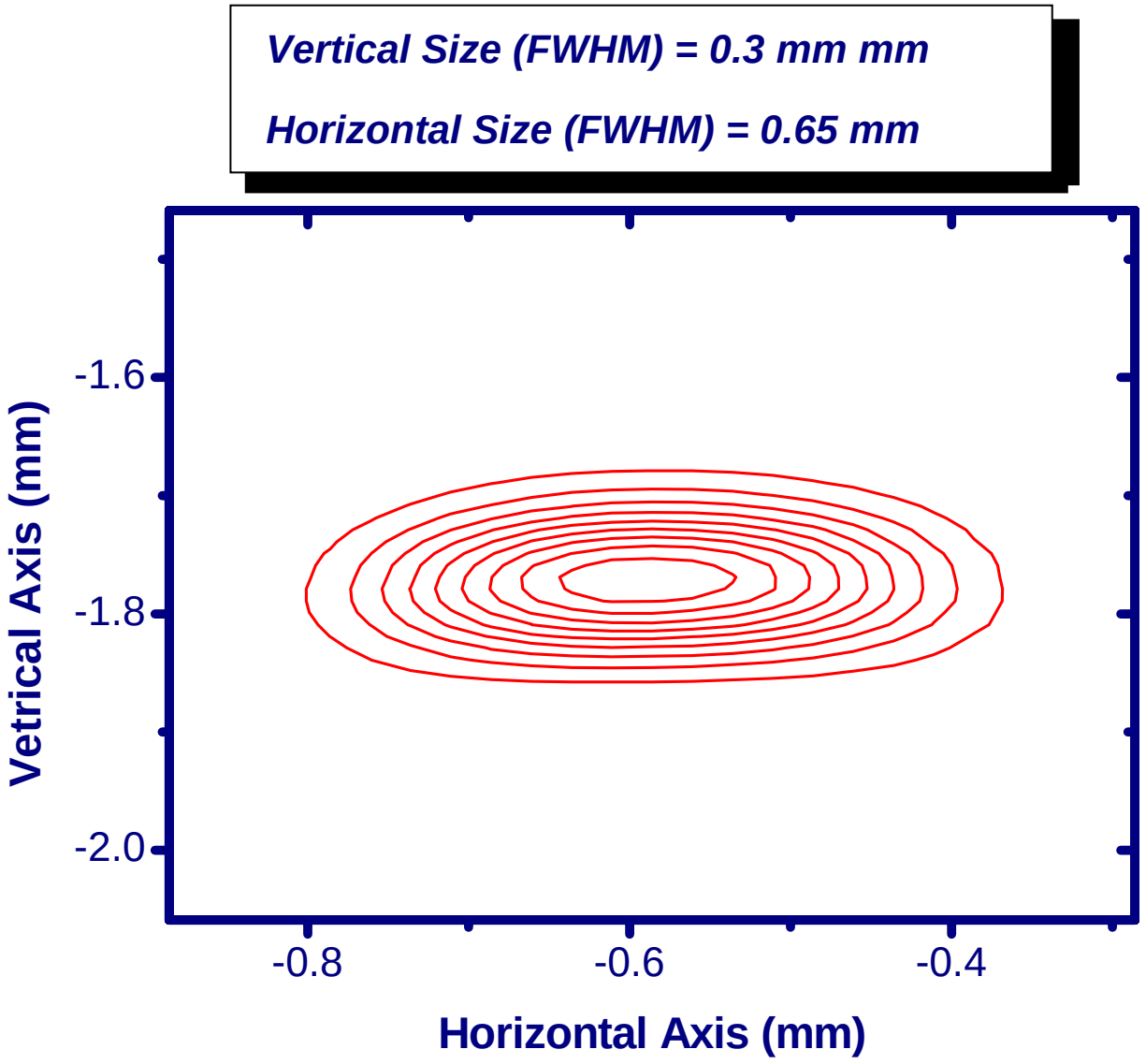
BL13B1 Specifications

- **Energy range: 6.5 ~ 19 keV**
- **Beam size ~ 0.25 mm (H) x 0.17 mm (V)**
- **Fix beam exit**
- **Flux > 10^{11} cps @ 0.1 mm aperture**
- **Intensity stability < 1%**
- **Beam divergence at sample < 3 mrad**
- **Energy resolution ~ 2 x 10^{-4}**
- **Energy stability: dE < 0.1 eV (0.5 eV at least)**
- **Energy reproducibility ~ 0.1 eV**
- **High harmonic ratio < 0.01%**

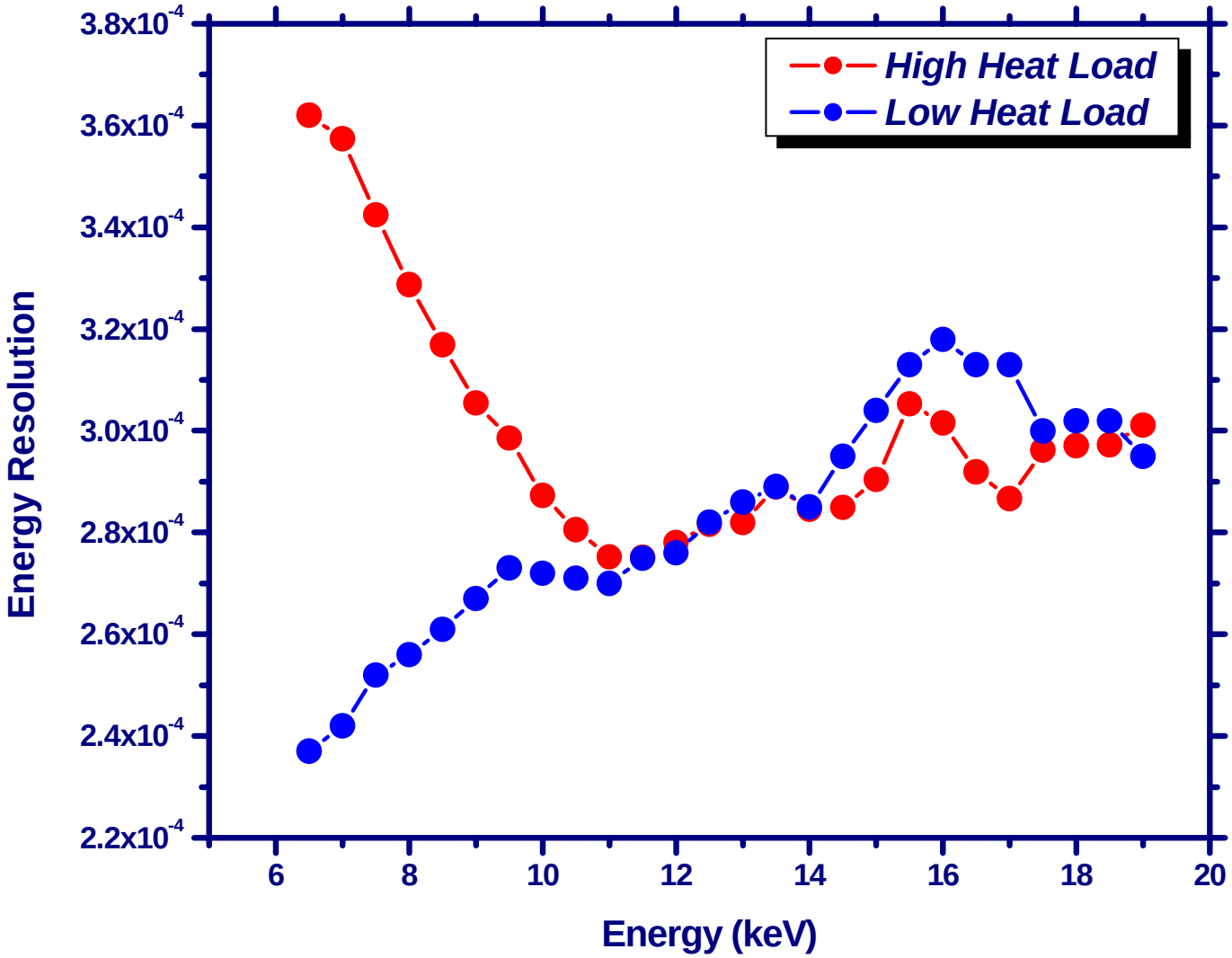
Total Flux


1E13
1E12
1E11
Total Flux (Phs/sec)
6
8
10
12
14
16
18
20
Energy (keV)

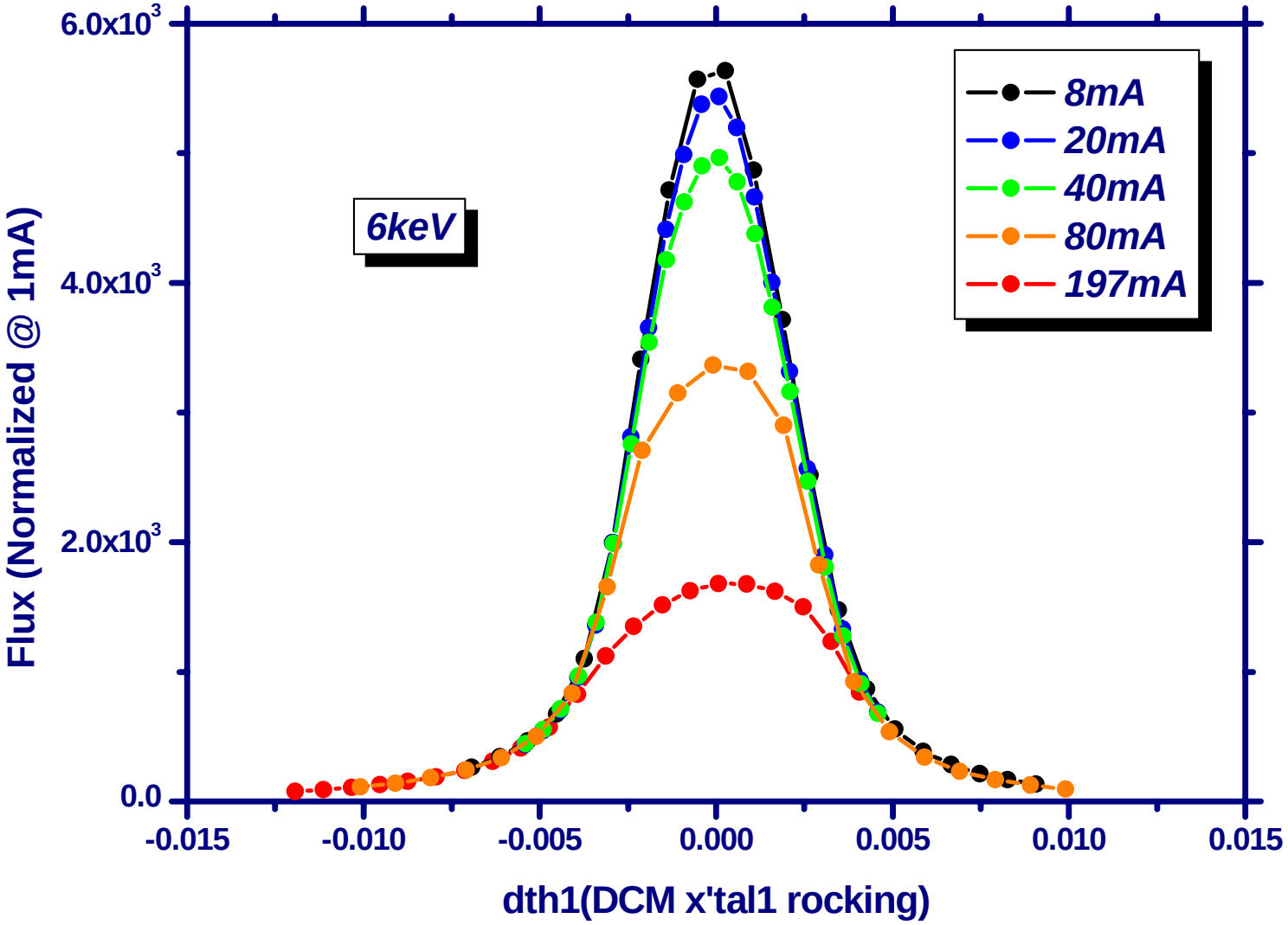
Focal Size


Vertical Size (FWHM) = 0.3 mm mm
Horizontal Size (FWHM) = 0.65 mm
Vetrical Axis (mm)
-1.6
-1.8
-2.0
-0.8
-0.6
-0.4
Horizontal Axis (mm)

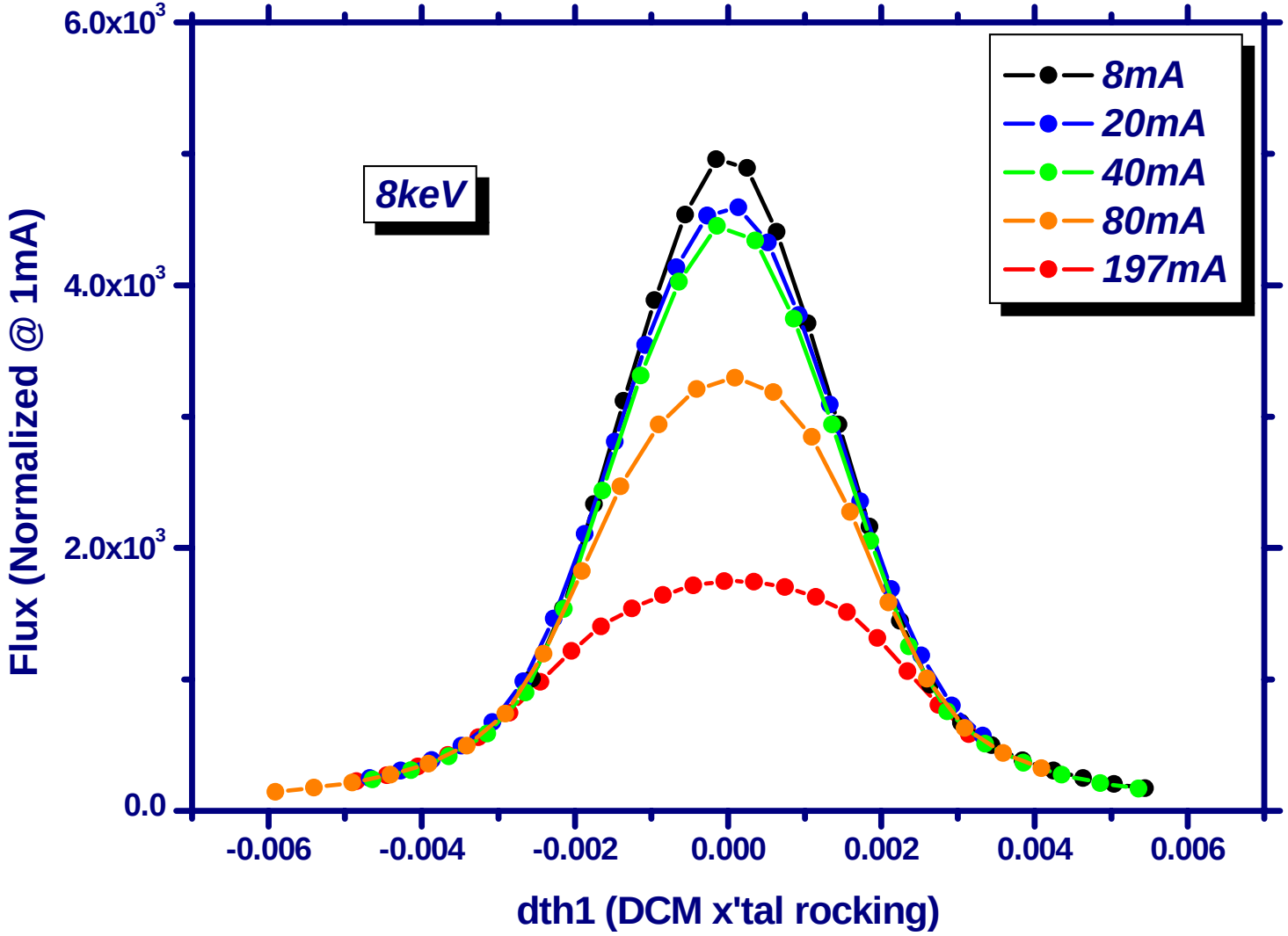
Energy Resolution



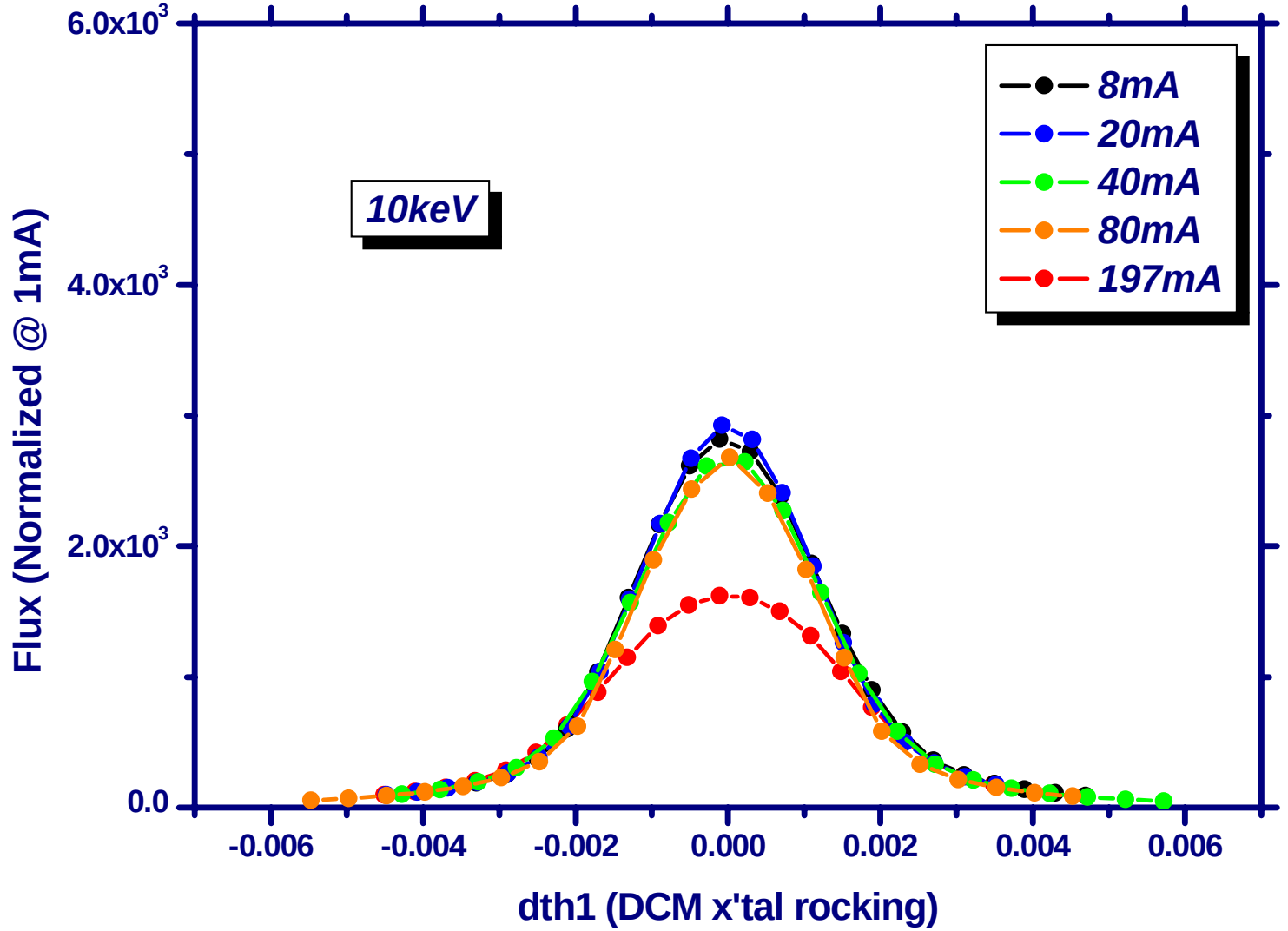
Heat Load Study



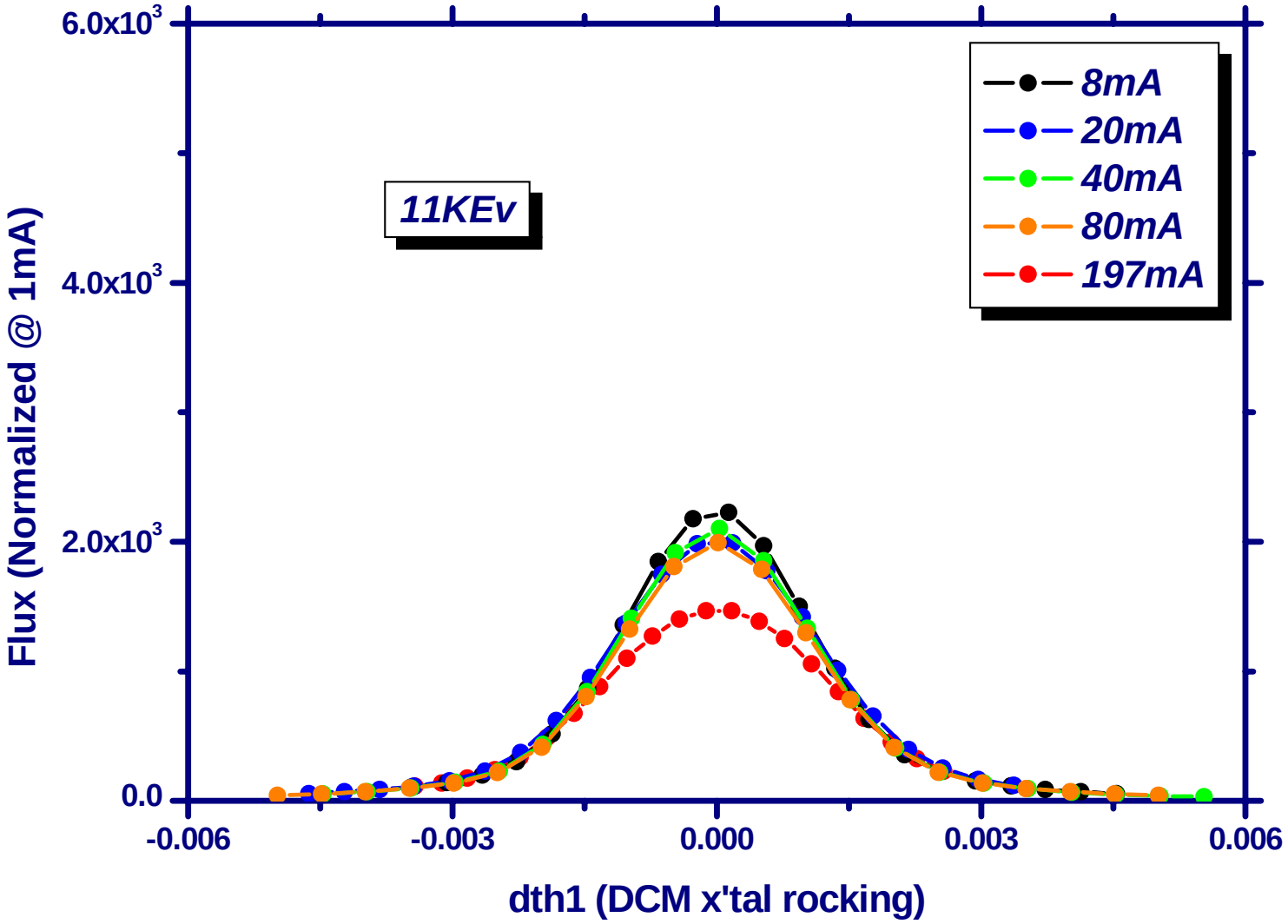
Heat Load Study



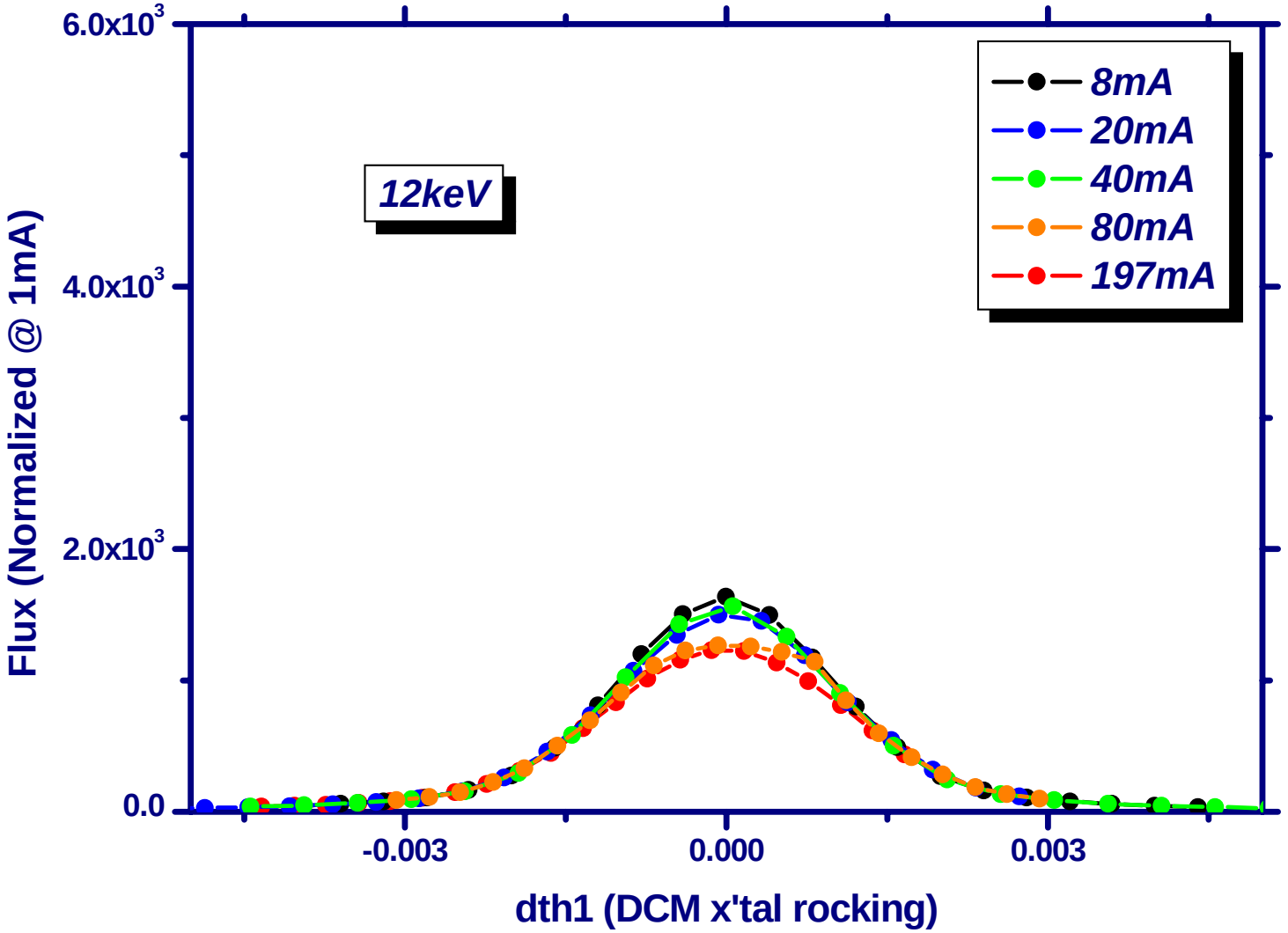
Heat Load Study



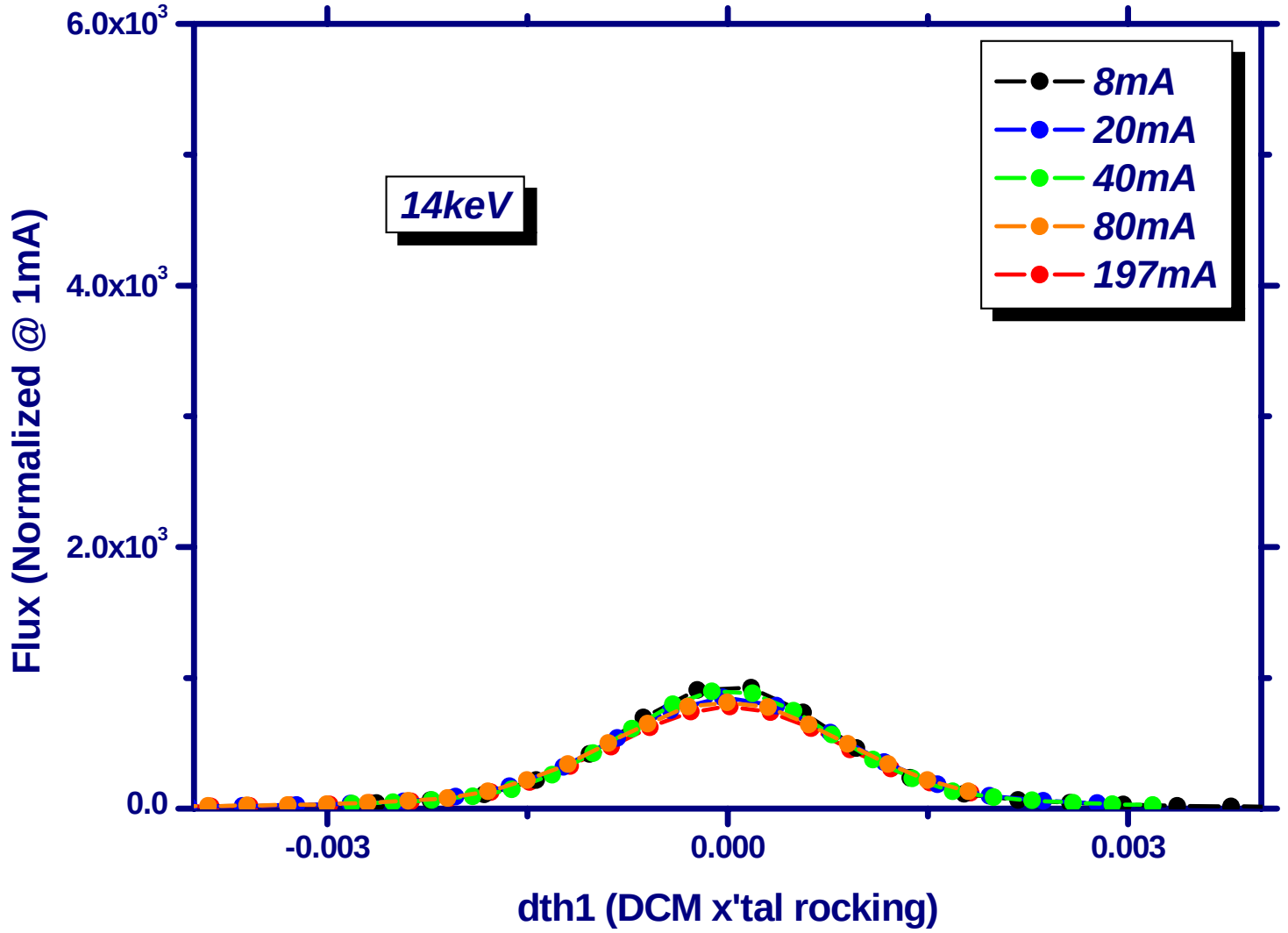
Heat Load Study



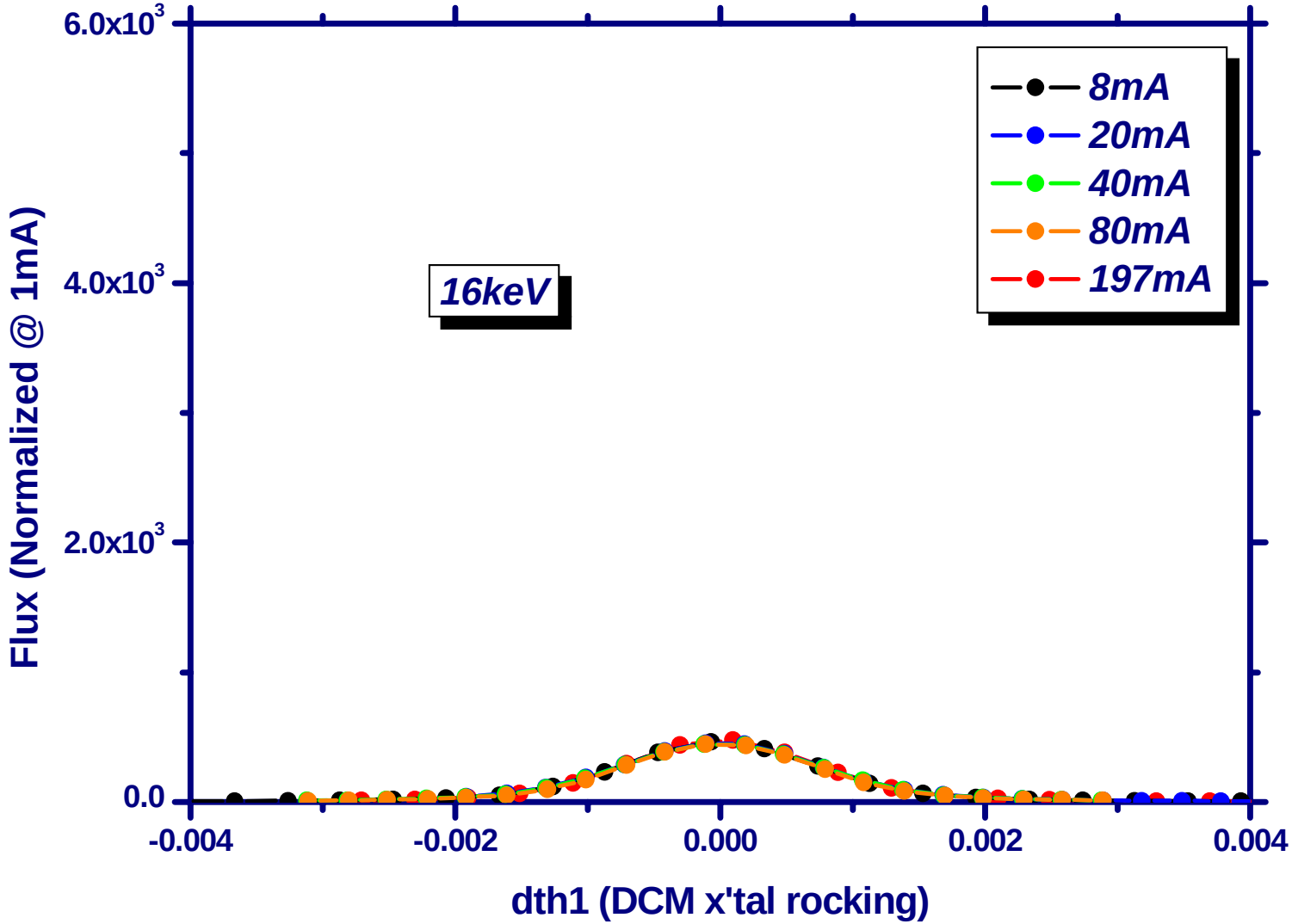
Heat Load Study



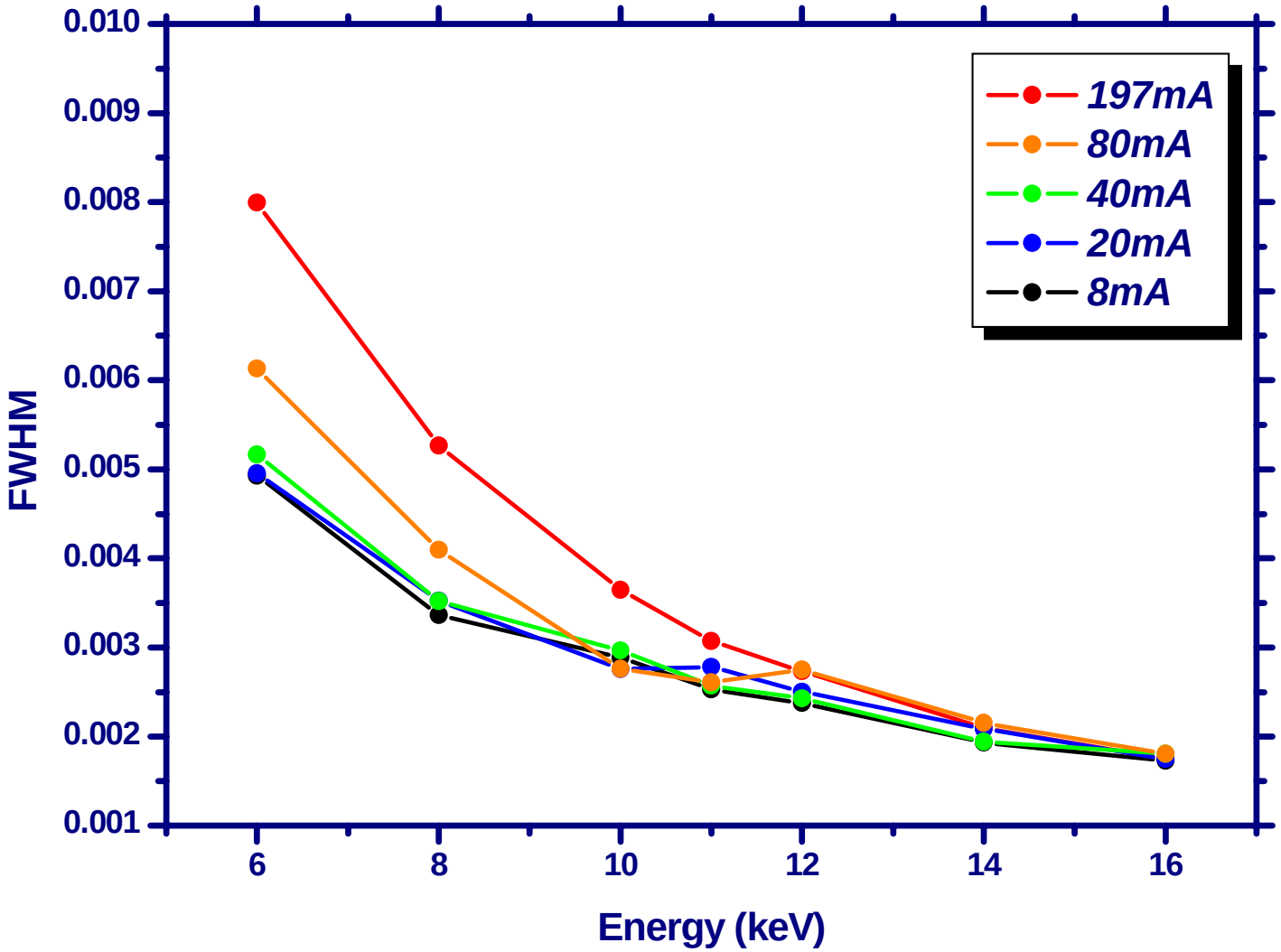
Heat Load Study



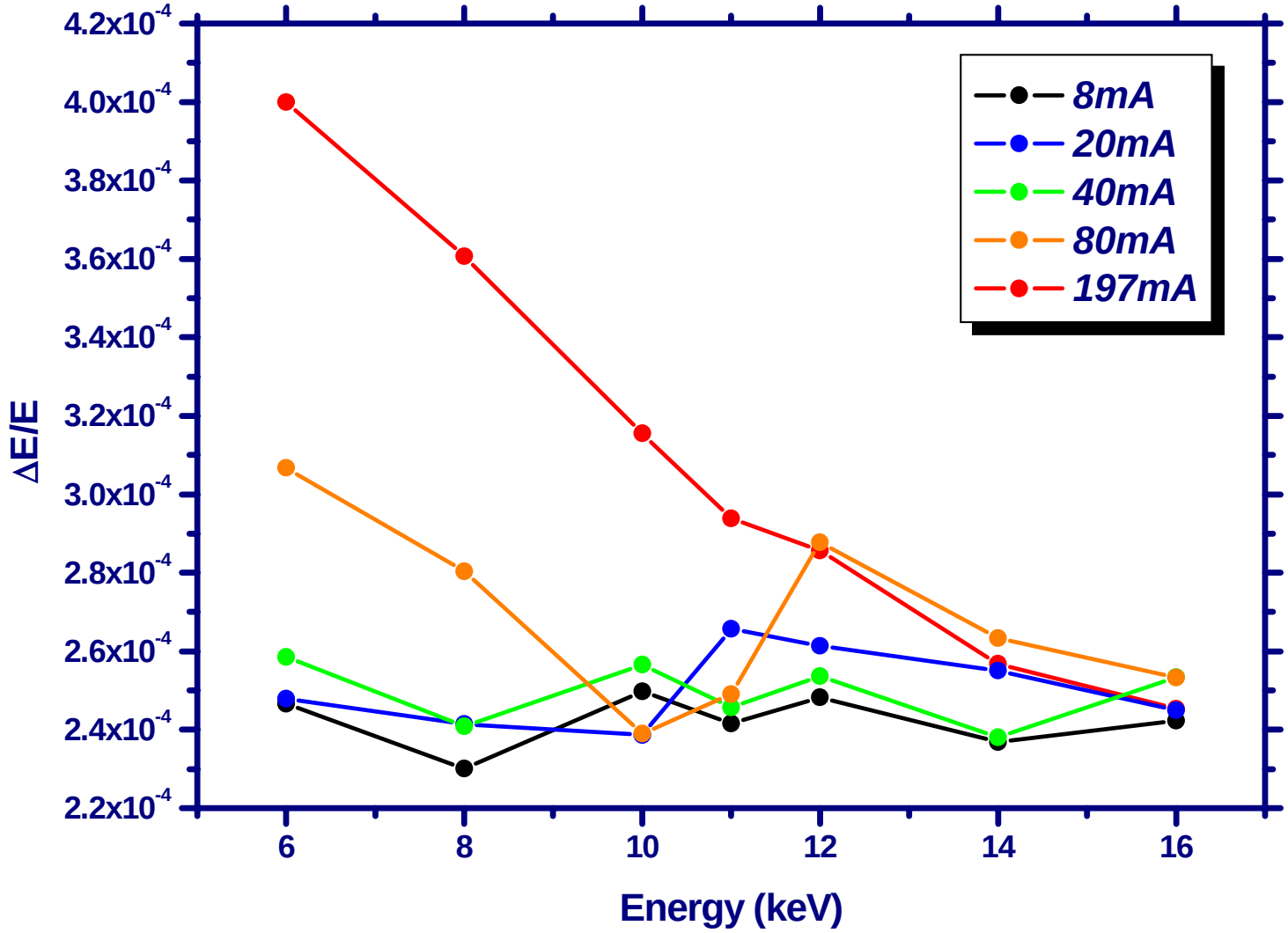
Heat Load Study



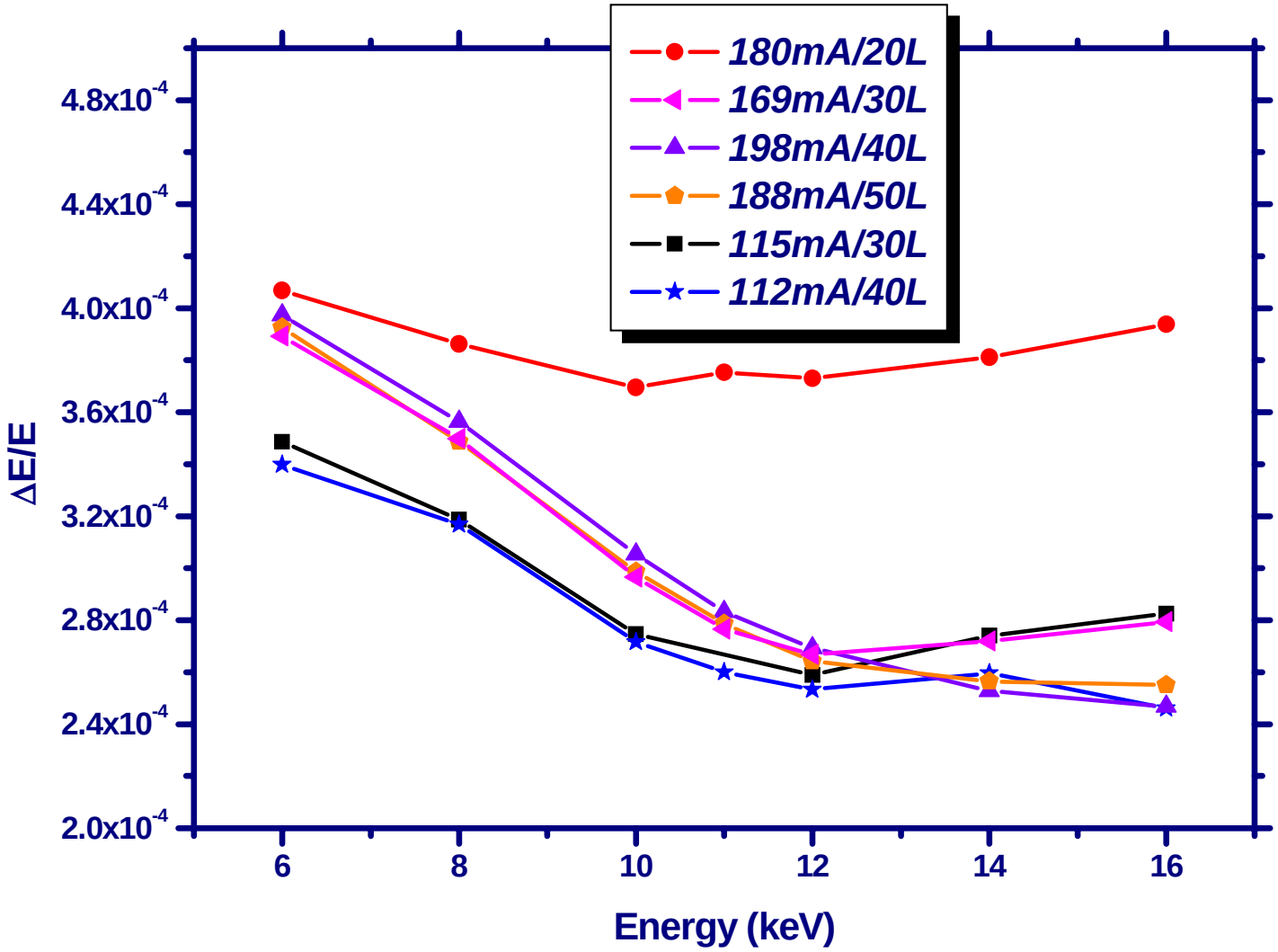
Heat Load Study



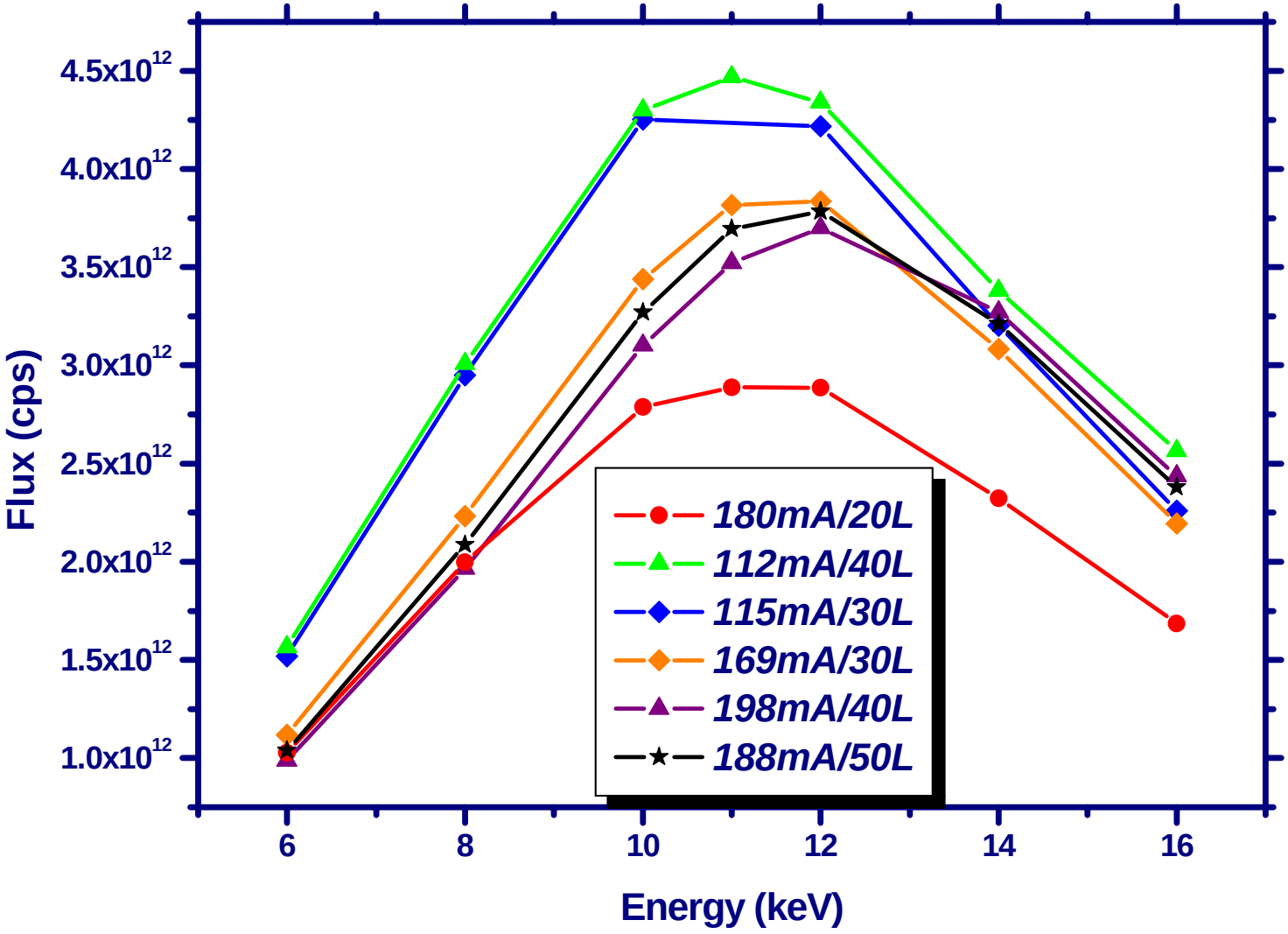
Heat Load Study



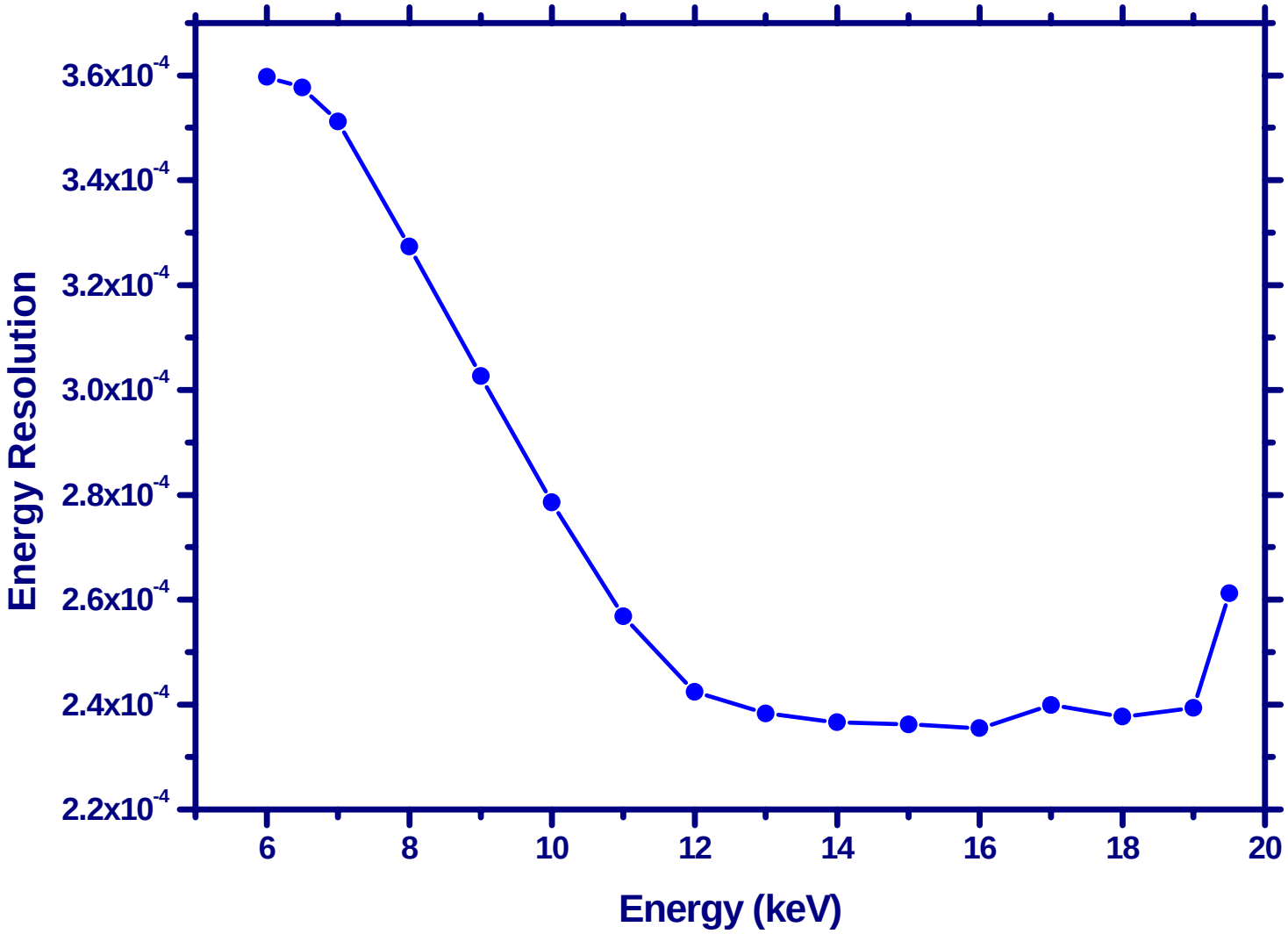
Heat Load Study



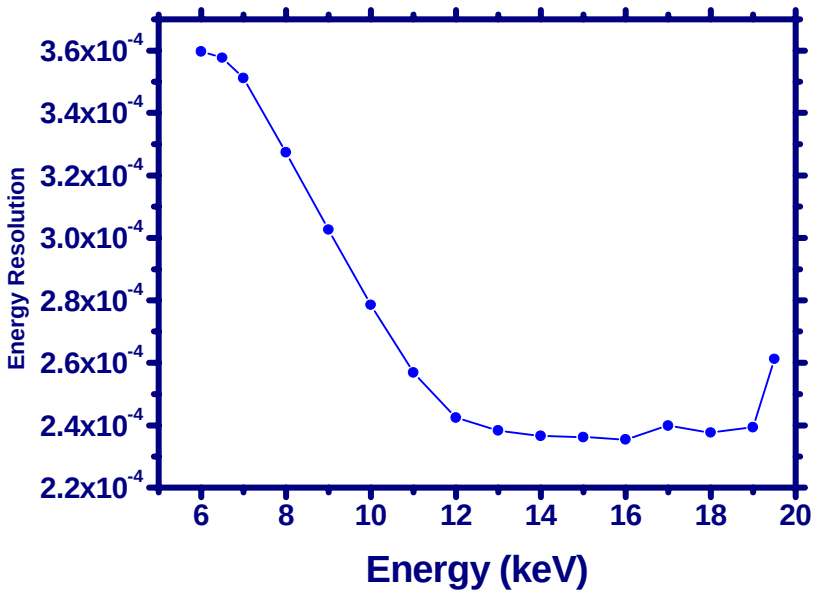
Heat Load Study

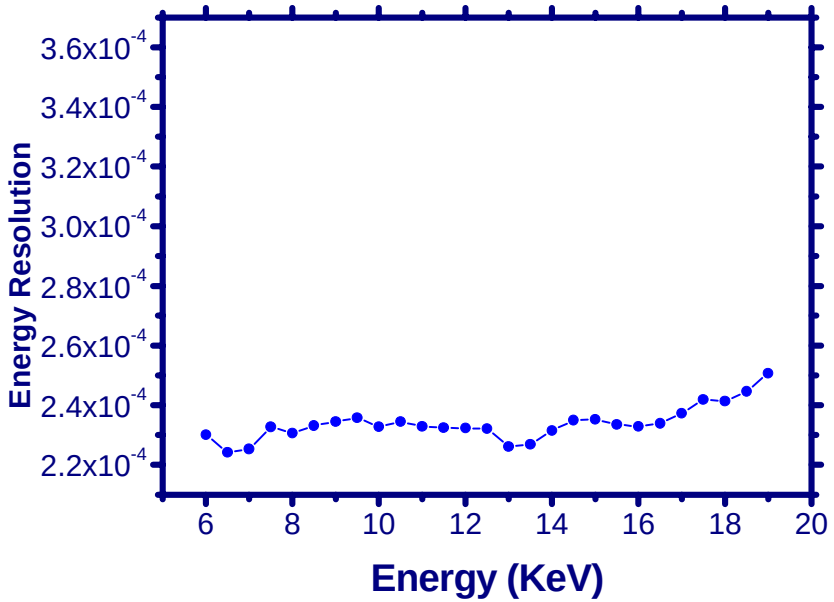


Energy Resolution



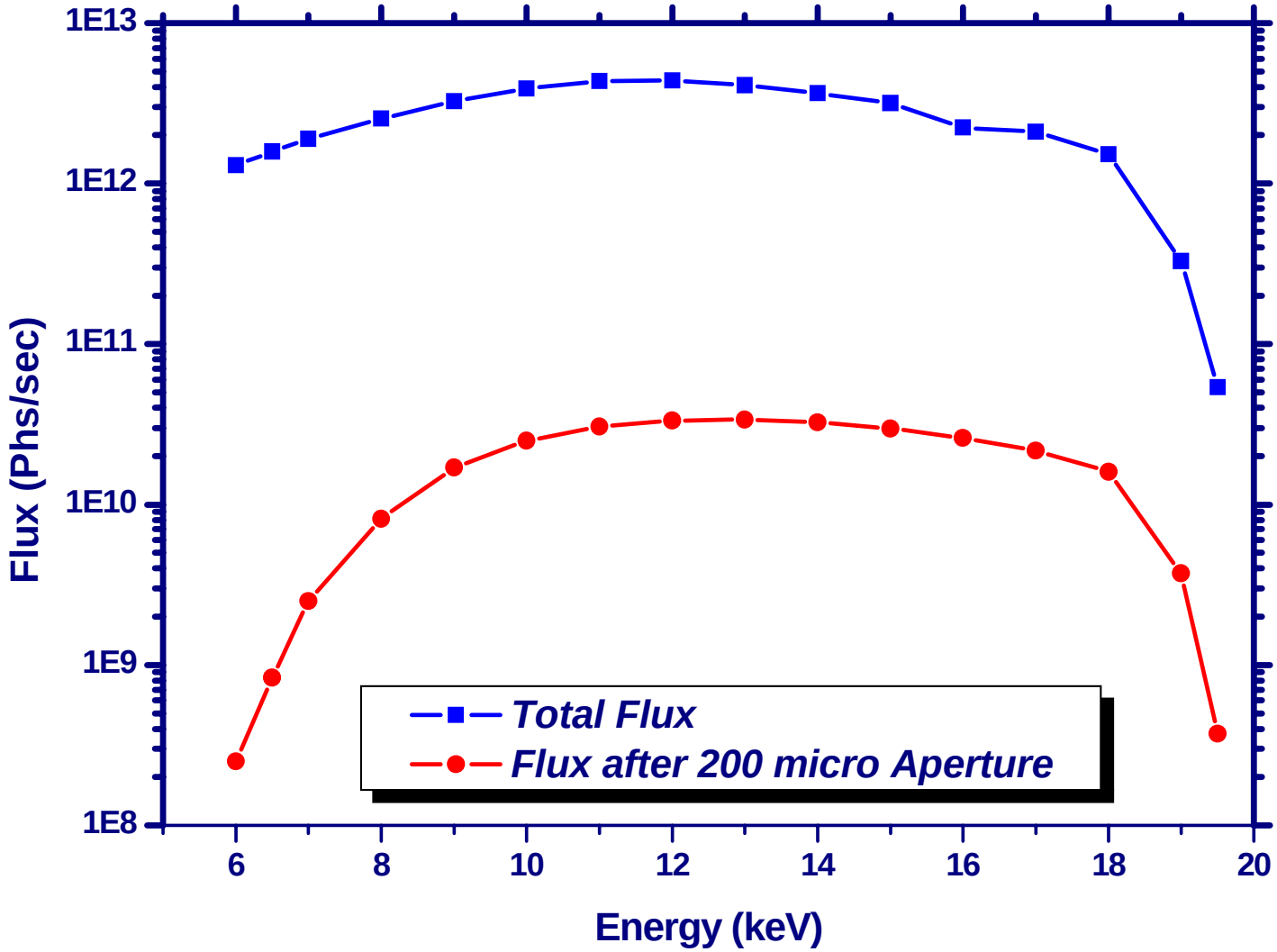
Energy Resolution of BL13B1



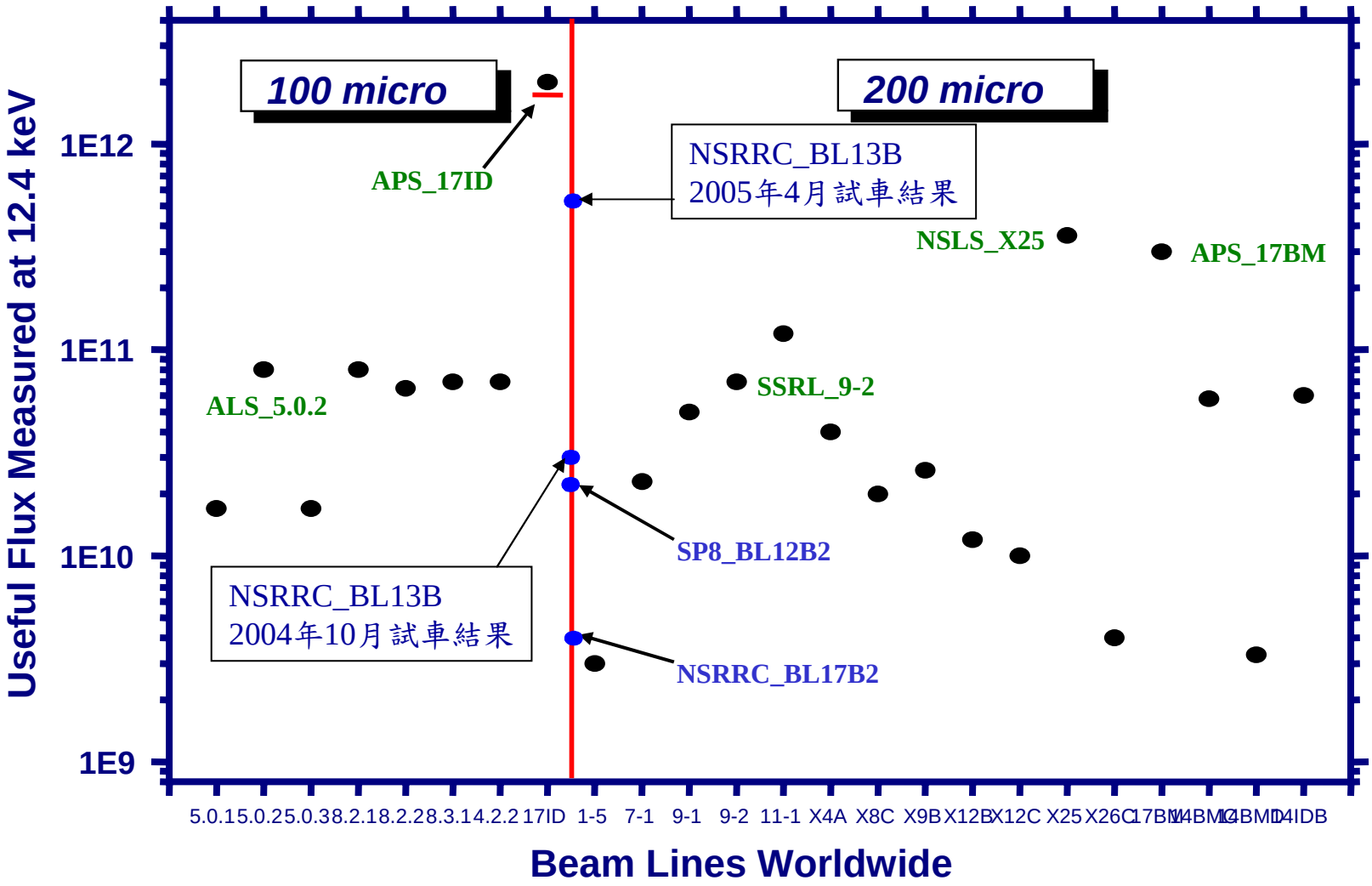


Measured Value at Oct. 2004 → **Eliminate Heat Load Effect** → **Measured Value at April 2005**

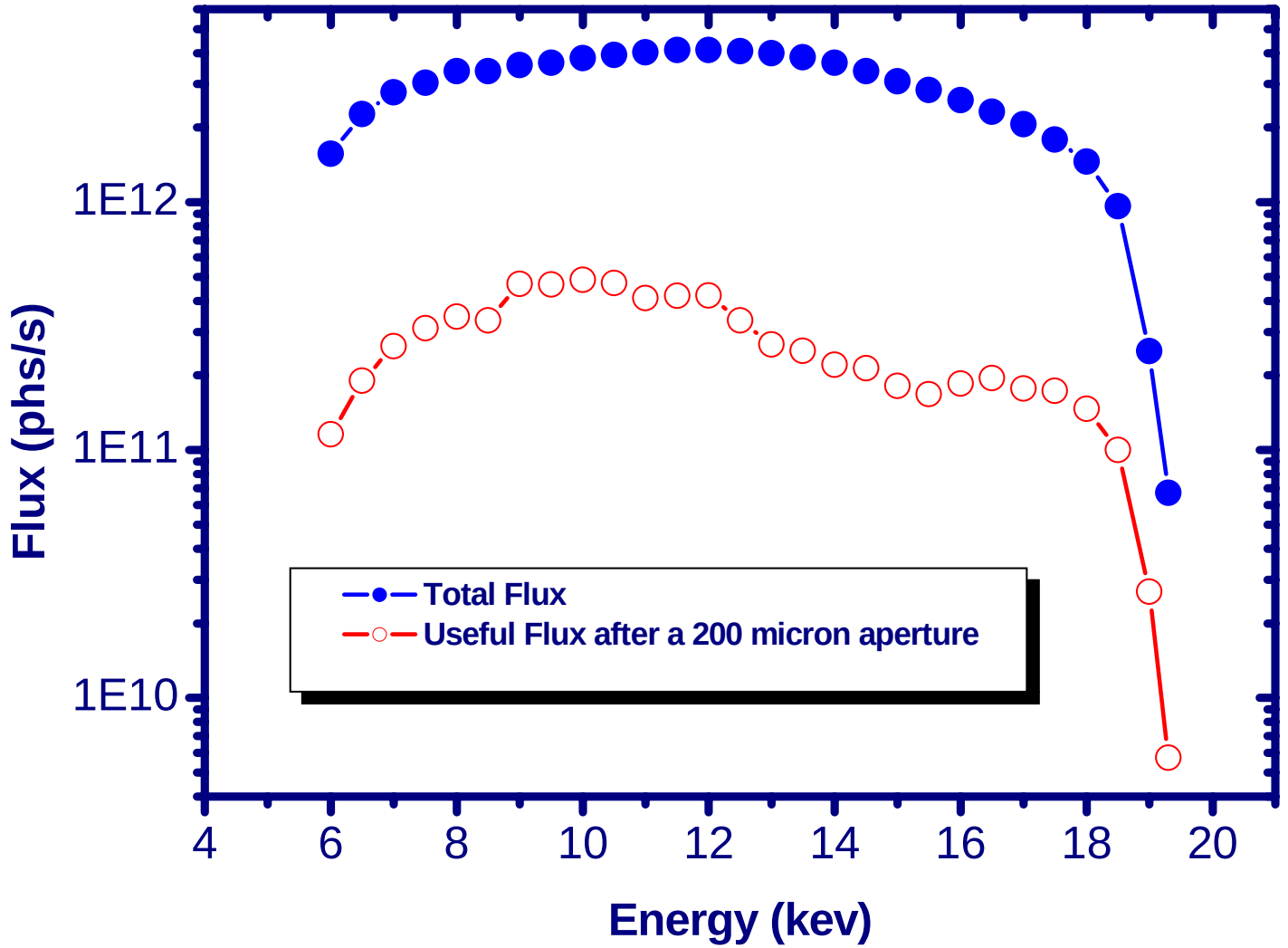
Total & Useful Flux Measurement



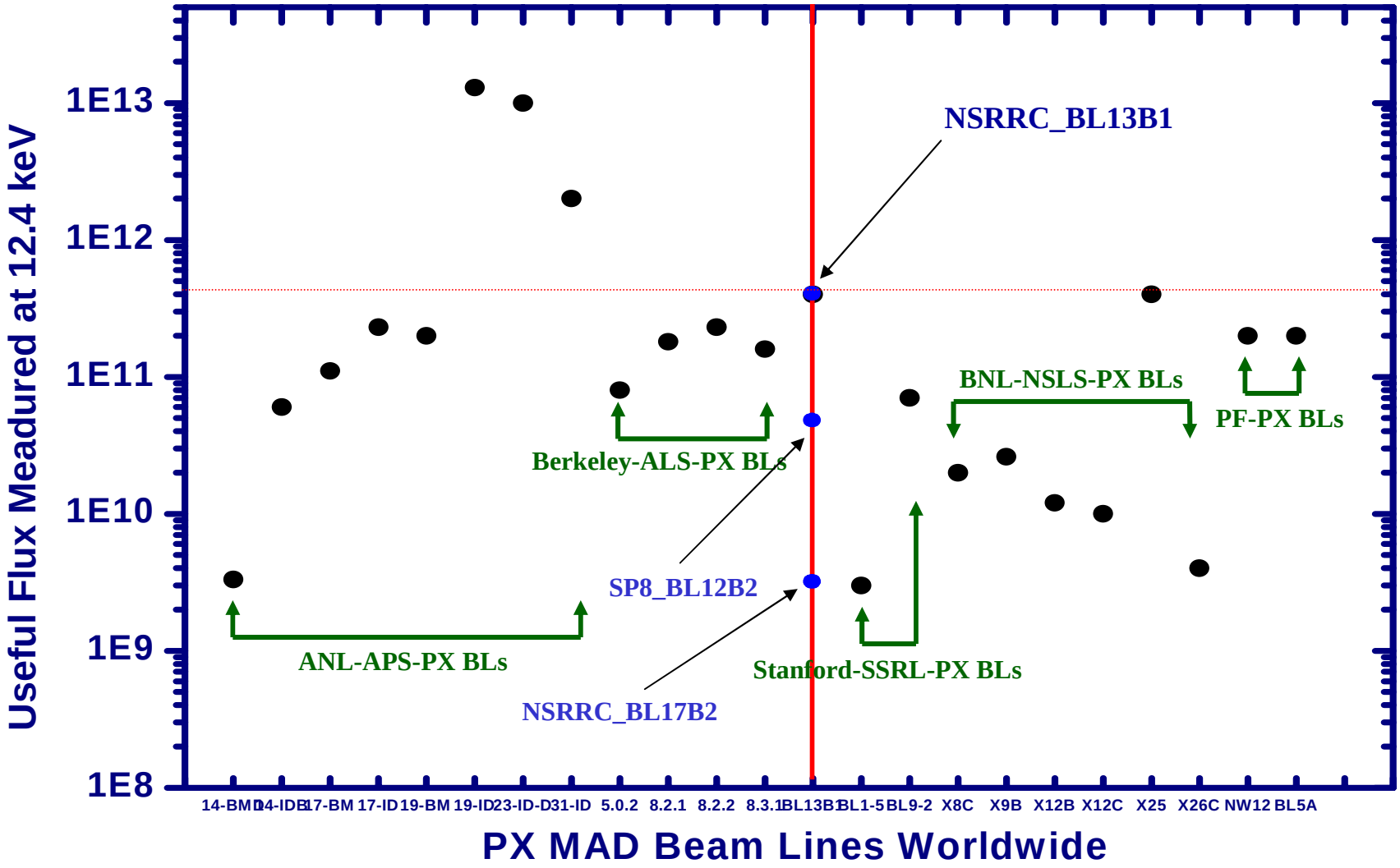
Beamline Performance



Total & Useful Flux Measurement



BL13B1 Beamline Performance



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Thank You for Your Attention