Effective Area Working Group

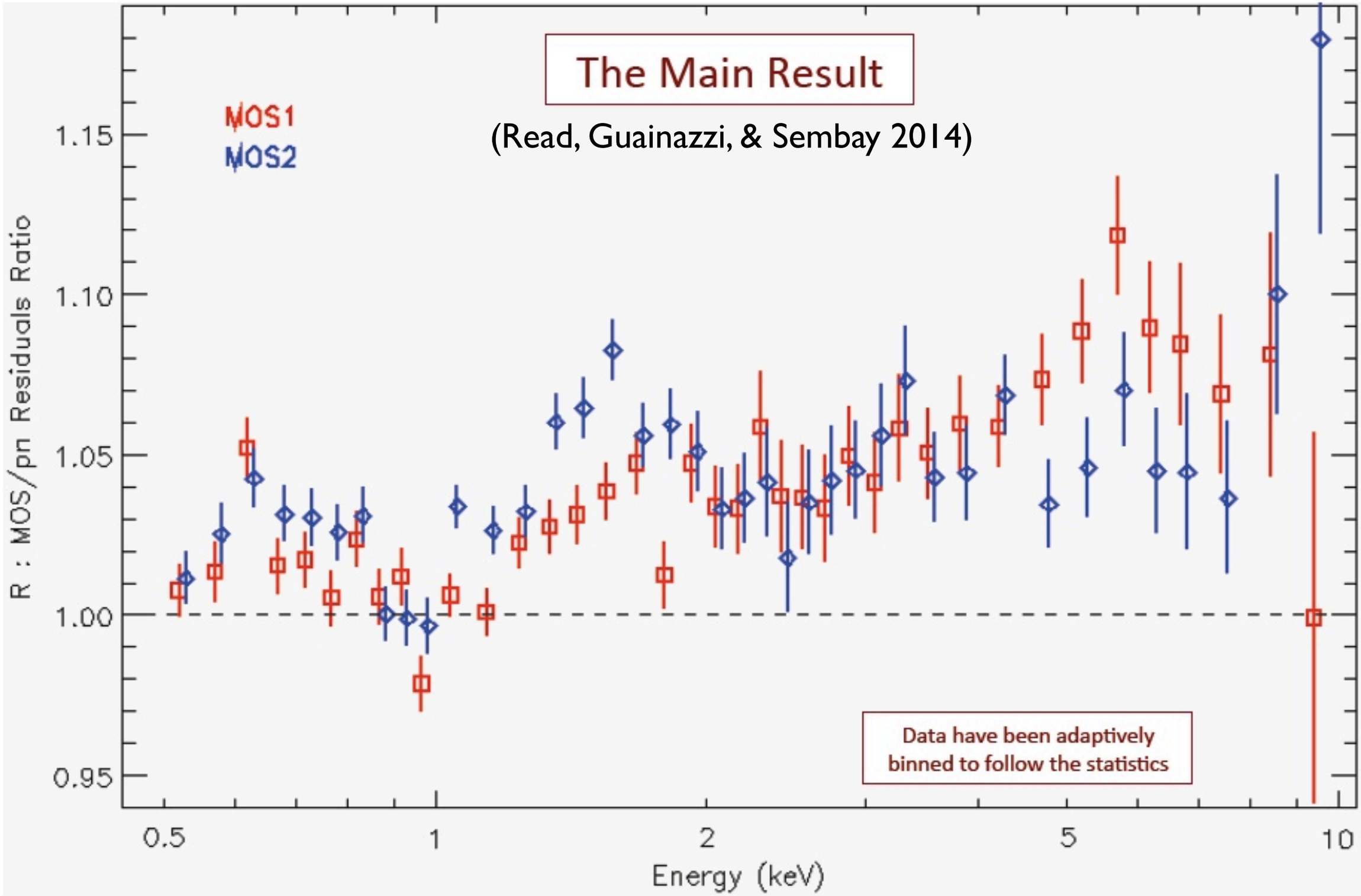
Summary

Presentations

- A. Read: Cross-cal of pn with MOS using 2XMM catalog
- M. Smith: XMM-Chandra cross-cal using blazars
- M. Guainazzi: Recal of XMM telescopes
- G. Schellenberger: XMM-Chandra cross-cal with HIFLUGCS
- C. Markwardt: XTE PCA propane layer +...
- J. Nevalainan: clusters & other telescopes

The Main Result

(Read, Guainazzi, & Sembay 2014)

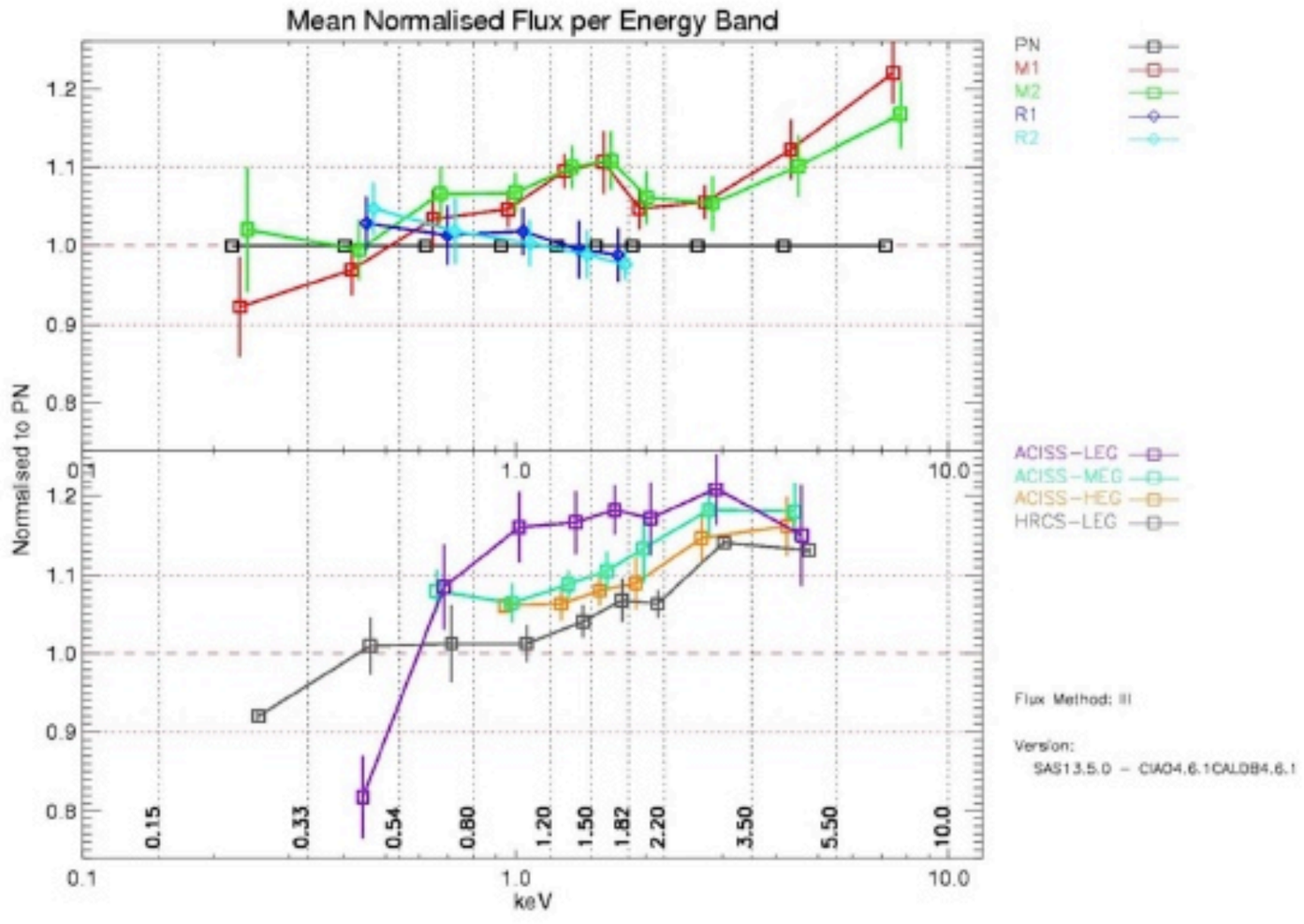


XMM EPIC

Andy Read (amr30@le.ac.uk)
IACHEC #9 – Effective Area X-Cal of XMM-Newton MOS & pn
Airlie Center, Warrenton, Virginia, USA, 12-15/05/14

University of Leicester

Mean Normalised Fluxes



XMM Optics Recal

XMM-Newton telescopes' effective area revisited | D.Lumb & M.Guainazzi | 9th IACHEC | Warrenton, 12th May 2014

esa

What is the allowable error from these parameters?

- Density < 0.5% absolute (*averaging ?)*
- Roughness – 0.05nm rms (*averaging ?)*
- Dust 30% variation – max due to exposures?
- 30 μ rms within the baffle structure and 150 μ centring baffle to telescope
- Axis – 10 arcsec at calibration and 10 arcsec in orbit vignetting calibration method
- Sum the errors r.s.s. as 1 σ?

XMM Optics Recal

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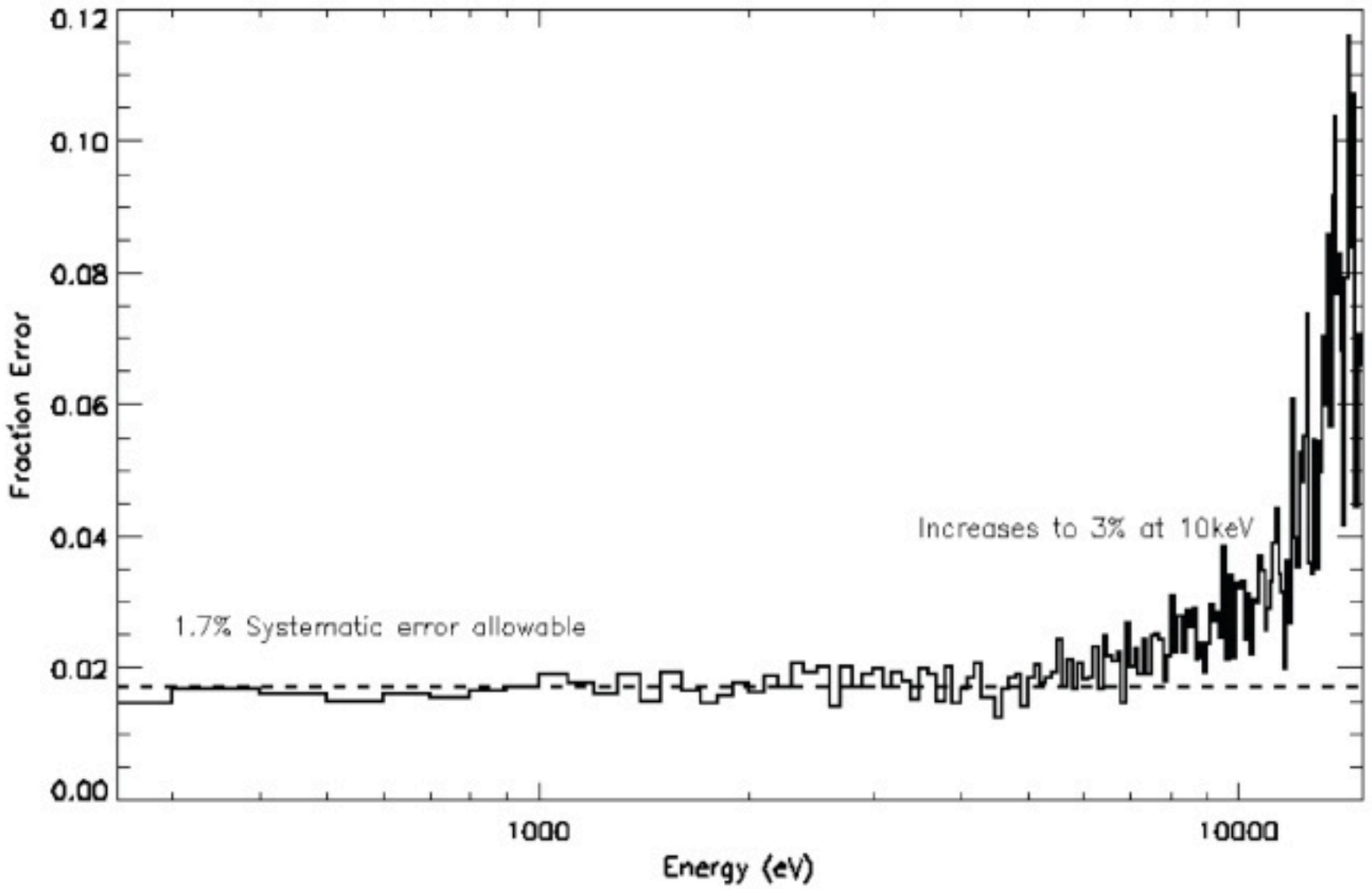
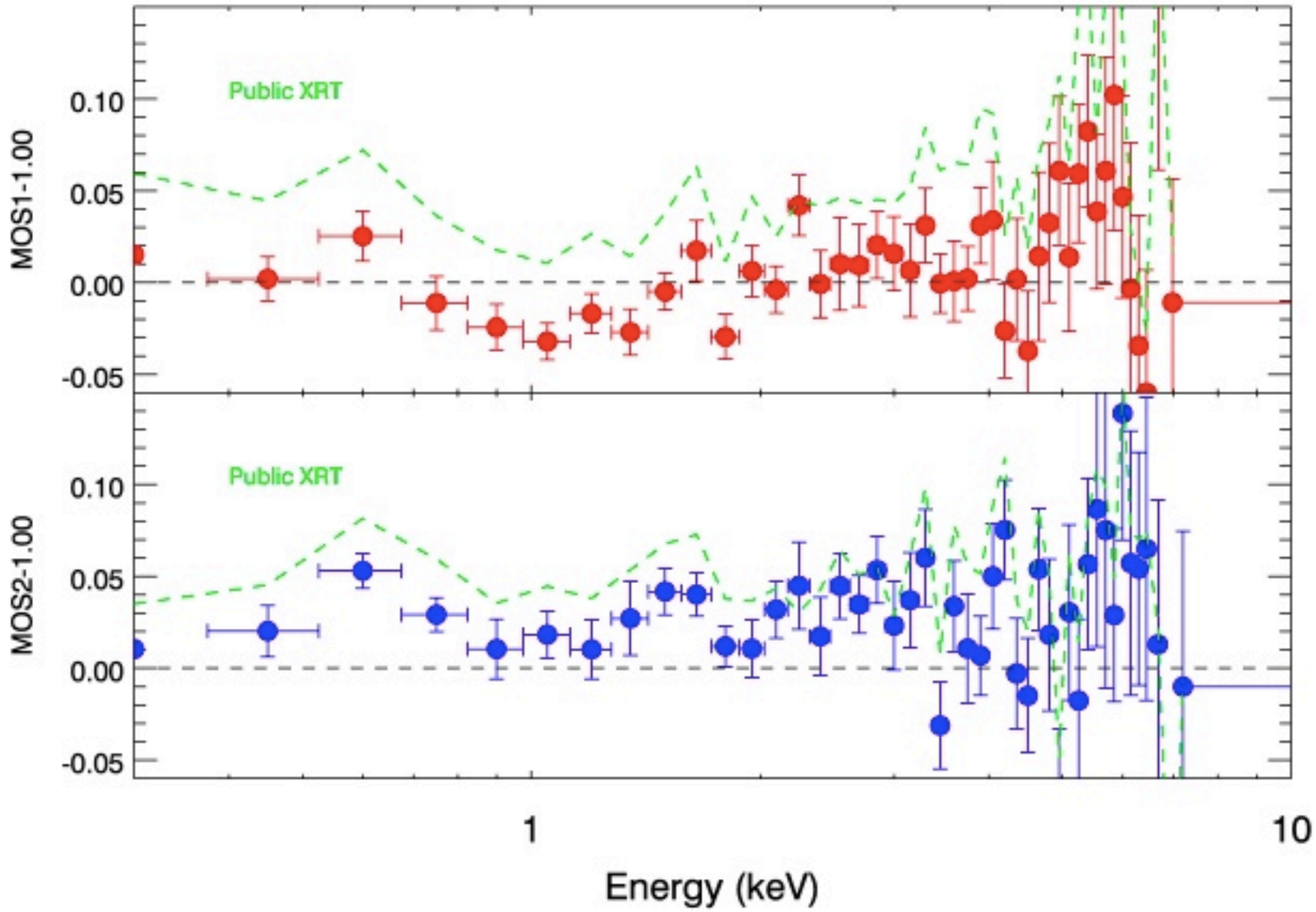
Systematic errors estimate



XMM Optics Recal

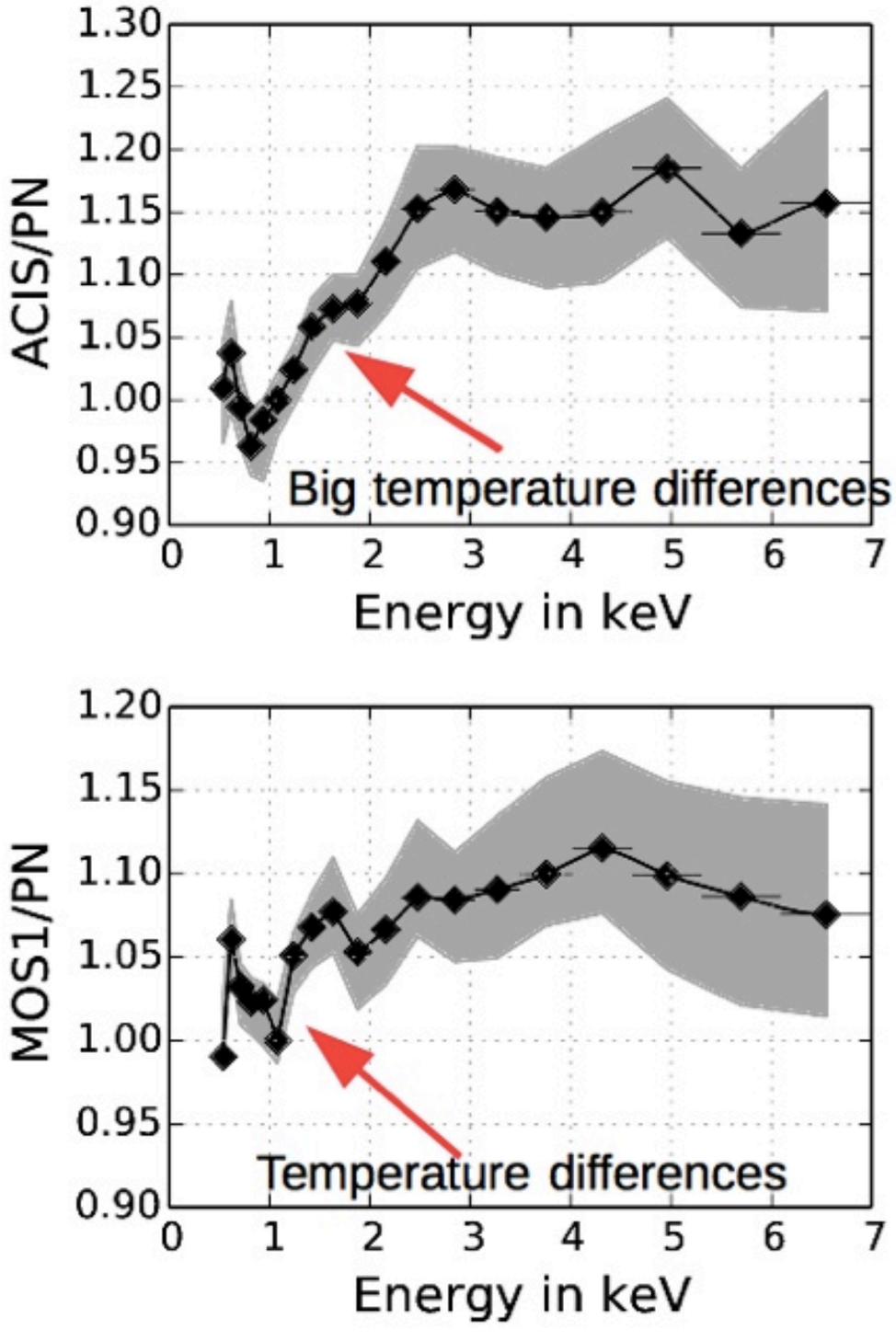
XMM-Newton telescopes' effective area revisited | D.Lumb & M.Guainazzi | 9th IACHEC | Warrenton, 12th May 2014

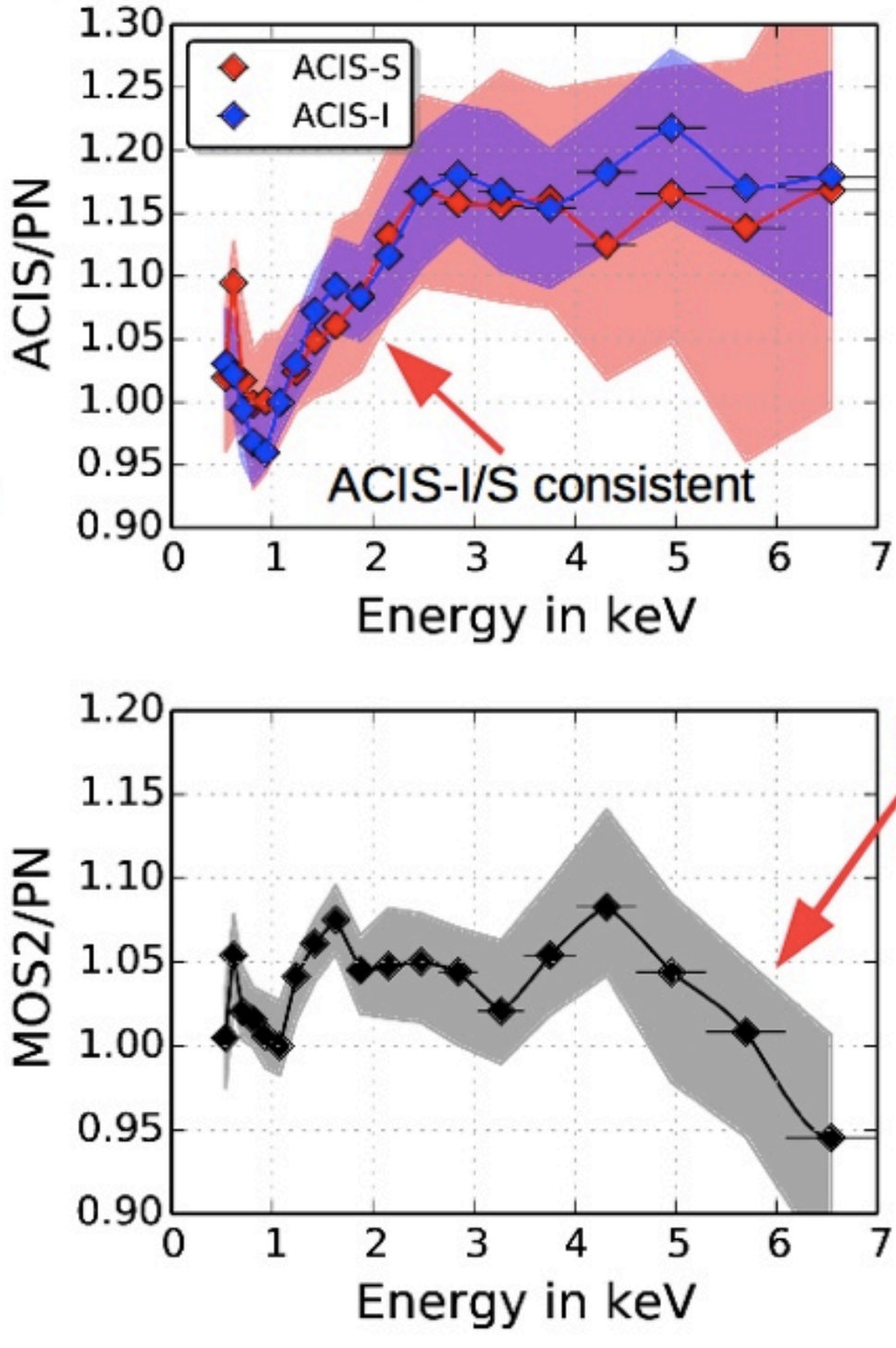
Impact on EPIC cross-calibration



Stacked residuals ratio

(Schnellenberger presentation)





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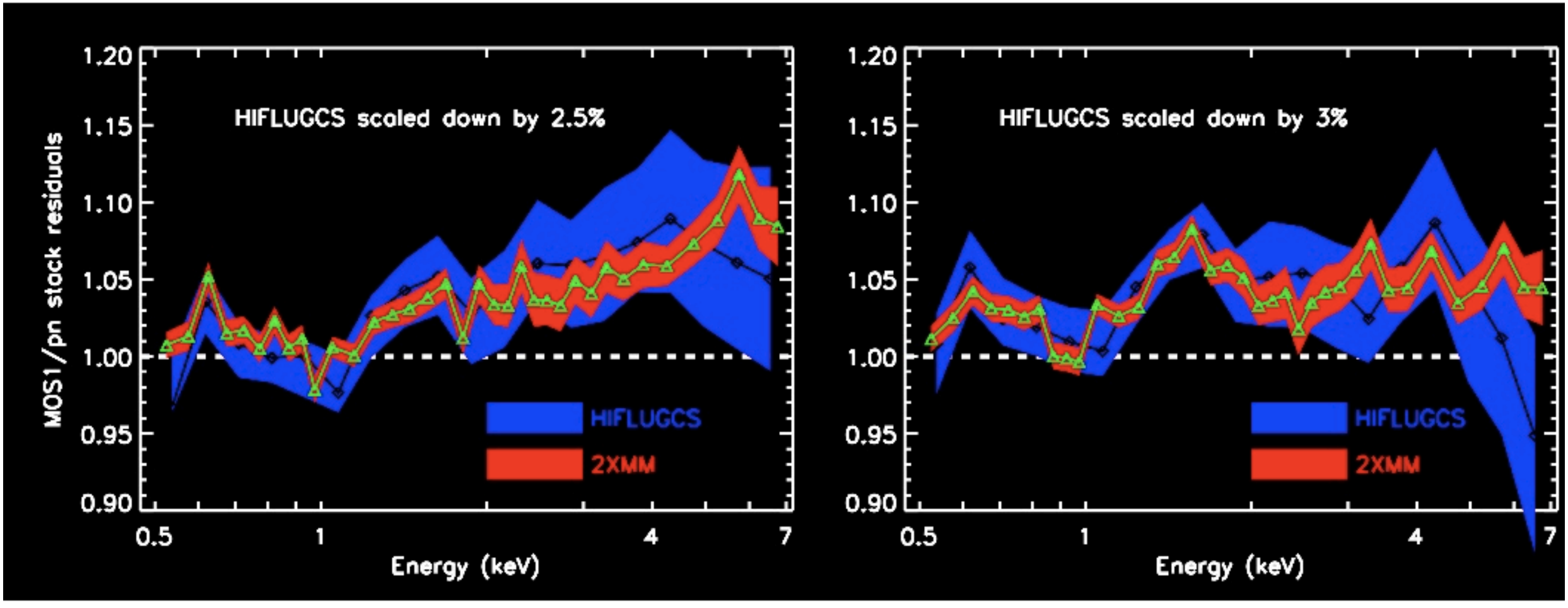
Stacked residuals ratio

(Schnellenberger presentation)



Calibration status of RXTE PCA

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RXTE PCA Team

Prospects of Using Propane Layer for Science

- Propane layer used as particle veto
- But: propane also sensitive to X-rays
  - At later times Xenon leaked into Propane layer

Xenon Background Models

- New super-VLE model

New Data & Software

- New tools for Standard data:
- New archive standard products

Summary

- Significant new results on XMM internal and XMM-Chandra cross-cal
  - Blazars, clusters, 2XMM catalog ~ agree
  - XMM optics physical model has room to adjust
  - Time to change?
- XTE PCA archive updates will make data more usable