Thermal SNRs WG Report
at the IACHEC Meeting

Wednesday May 22 8:30 JST: Tuesday May 21 23:30 UTC
Attending:

XMM-Newton pn  Konrad Dennerl, Michael Freyberg
XMM-Newton RGS & MOS Martin Stuhlinger
Suzaku XIS  Eric Miller
Swift XRT  Andy Beardmore
NuSTAR  Brian Grefenstette
Chandra ACIS  Paul Plucinsky
ASTROSAT  Gulab Dewangan
NICER Kenji Yamaguchi
E0102 line norms from IACHEC paper

**1 E0102.2-7219 Results**

Dennerl (MPE)

Results with release rmf

Paul Plucinsky
1E0102.2-7219 Results

Dennerl (MPE)

Revised results with new rmf

Paul Plucinsky


O VII triplet O VIII Ly-α Ne IX triplet Ne X Ly-α
N132D Model Development

- IACHEC model is currently at version 2.11
- Dennerl showed fits to the pn data of N132D in small window mode. Better fits are achieved when N132D is positioned at the edge of the small window mode compared to fits when N132D is positioned in the center of small window. This difference is under investigation.
- Miller showed fits to the Fe-K region with Suzaku XIS with a new background model.
- Grefenstette showed NuSTAR fits and argued for the addition of a high temperature component with kT~6.0 keV (consistent with Bamba et al. 2018 paper).
Background modeling is crucial to achieve reliable results in the Fe K region.
NuSTAR spectrum shows the need for a hard component with $kT \sim 6.0$ keV.
N132D Model Development ACTIONS

- Dennerl will explore background subtraction for pn small window mode data
- Miller will complete XIS fits and send new model components to Grefenstette and Plucinsky
- Stuhlinger will fit RGS data with IACHEC model and identify issues
- Grefenstette will fit NuSTAR data with new components suggested by Miller
- Plucinsky will update the model with new components and distribute next version
- Plucinsky will schedule telecon in a month, ~14-18 June
**Cas A Model**

- Beardmore (Leicester) showed his Cas A model that is used for Swift XRT calibration fit to the XMM MOS1 and pn data
- Dewangan (IUCAA) uses this model for ASTROSAT calibration
- We recommend that we should release this model as an IACHEC model but make clear that it is based on CCD-resolution data, not high-resolution data

**Beardmore (Leicester)**

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**XMM MOS1**

- Graphs showing energy distribution and ratio

**XMM pn**

- Graphs showing energy distribution and ratio
Organization for the Coming Year

- We have made little progress on the N132D model. We need someone to take responsibility for the RGS data. Stuhlinger has volunteered.
- We need to meet regularly. We should meet once a month by WebEx or zoom.
- We need to make progress this year to take advantage of the information from Suzaku and the new information from NuSTAR