Calibration of the EPIC MOS Timing Mode

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- current status of timing mode
- energy calibration
- calibration proposal
useful data

• 1E0102-7219
  – OBS 0135721001
  – rev 447
  – LW and Timing Mode for both cameras
- **black**: LW
- **red**: Timing
1E0102-7219 MOS2

- black: LW
- red: Timing
• black: MOS1
• red: MOS2
- black: MOS1
- red: MOS2
focusing the lines: LW vs. Timing

- Timing mode is overcorrected by up to 1.5%.
- Trend is similar for both MOSs.
fitting the lines: M1 vs. M2

- differences between both MOSs per mode less than 0.7 %
absolute line position differences

- M1 LW-T: -8eV - -12 eV
- M2 LW-T: -7eV - -12 eV
- Ti M2-M1: +2eV - -8eV
- LW M2-M1: 0eV - -7eV
**Conclusion**

- Energy in Timing mode is overcorrected by up to 1.5%.
- Energy differences between both MOSs in LW mode less than ~0.7%.
- Differences between both MOSs in Timing mode less than ~0.5%.
- Proposal: fix differences between LW and Timing mode with an energy dependent tuning function (as also successfully done for the pn).

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**Graphs:**

- **Ratio Timing/FF vs. Energy in eV (Full Frame):**
  - CAS-A data
  - Boltzman fit to all data
  - N132D data

- **Timing/FF vs. Energy in eV (Full Frame):**
  - \(lz_{ng}\)
  - \(lz_{g}\)