My Ph.D. in 180s

Scientific performance and calibration of the X-ray Integral Field Unit (X-IFU)

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2017-06-21 Journée des thèses
The soft X-ray sky

ROSAT 0.1-2.4keV
Soft X-ray Universe

Compact objects (XRB, accretion, jets)

Cluster science (AGN feedback, UFOs, Turbulence, enrichment)

Energetic Universe (Black hole spin, dark matter)
The X-Ray Integral Field Unit

Integral Field Unit

Cryogenic operation
Total mass of \( \sim <800 \text{kg} \)
Soft X-ray band 0.2-12keV

Effective area
Spatial resolution
Spectral resolution

- 2m\(^2\) @ 1keV
- 5\(^\prime\) with 20\(^\prime\) FoV
- 2.5eV @ 7keV
The X-Ray Integral Field Unit

Effective area
2m² @ 1keV

Spatial resolution
5” with 20°² FoV

Spectral resolution
2.5eV @ 7keV

Phonon impact = Current pulse
The way to go

**Ph.D. main drivers**

- Design calibration methods for the X-IFU and help the calibration team (plan, testing)
- Verify science capabilities through tests and simulations
- Evaluate the performance and degradations due to instrumental effects
- Evaluate the performance and degradations due to instrumental effects

**Thermal cross-talk**

**Electrical cross-talk**
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Thank you for your attention!