point_source

November 4, 2014

Abstract

Calculates the xspec normalization per square arcminute for the Cosmic X-ray background after removal of point sources to some limiting level (min_flux). ELF is shorthand for the logN-logS.

1 Instruments/Modes

Instrument	Mode
EPIC	Imaging

2 Use

pipeline processing	no
interactive analysis	yes

3 Description

Calculates the xspec normalization per square arcminute for the Cosmic X-ray background after removal of point sources to some limiting level (min_flux). ELF is shorthand for the logN-logS.

We assume that integral[ELF] from 0 to infinity is less than cxrb_norm, or that:
CXRB = X + integral[ELF]$_0^{infinity}$.
Therefore, for any given "blank sky" observation where the brightest point source has a flux smax, the total X-ray emission in the field would be:
X + integral[ELF]$_0^{smax}$.

The currently available functions are:
hms: Hasinger, Miyaji, & Schmidt (2005), from ROSAT, XMM, & Chandra):
mushotzky: (????):
cappelluti: Cappelluti et al (2008), from COSMOS:
mateos: Mateos et al (2008), from XMM'

Output: Xspec normalization for power law in units of photons/cm2/s/am2/keV

Examples::

point-source func=mateos min_src_flux=5.e-14 cxrb_norm=10.6 index=1.40

4 Parameters

This section documents the parameters recognized by this task (if any).

Parameter	Mand	Type	Default	Constraints
func	yes	string	mateos	

Name of logN-logS function.
hms (Hasinger, Miyaji, & Schmidt 2005)
mushotzky (REF TBD)
cappelluti (Cappelluti et al. 2008)
mateos (Mateos et al. 2008)

min_src_flux	yes	real	1.0e-14	

Source flux cutoff in erg/cm2/s.

cxrb_norm	yes	real	10.6	

Normalization of the cosmic X-ray background.

index	yes	real	1.46	

Photon power law index.

5 Input Files

6 Output Files

7 Algorithm

8 Comments

References