pn-filter

June 2, 2019

Abstract

pn-filter is the initial task to be run on the data within the *esas* package for PN. It calls *espfilt* to identify good time intervals. Filtering is also done using the standard parameters for PATTERN, etc. *pn-filter* will process all of the PN imaging exposures for both detectors for the observation pointed to by $SAS_DIR.

1 Instruments/Modes

Instrument	Mode
EPIC	Imaging

2 Use

pipeline processing	no
interactive analysis	yes

3 Description

pn-filter is the initial task to be run on the data within the *esas* package for PN. It calls *espfilt* to identify good time intervals. Filtering is also done using the standard parameters for PATTERN, etc. *pn-filter* will process all of the PN imaging exposures pointed to by $SAS_DIR.

Warning and requirements: *pn-filter* is part of the *esas* package integrated into SAS, but it is limited to work within the *esas* data reduction scheme.

4 Parameters

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

Parameter	Mand	Type	Default	Constraints

None.

5 Input Files

The task will filter data reduced either with `epproc` or `epchain`, present in the working directory.

6 Output Files

- `pn`*prefix*`-cc-ori.fits` – The cal-closed photon event files produced by *emchain*
- `pn`*prefix*`-clean.fits` – The filtered photon event files
- `pn`*prefix*`-corn.fits` – Event list of data from the corners of the detectors
- `pn`*prefix*`-corn-image.fits` – Image of the filtered data from the unexposed corners in detector coordinates
- `pn`*prefix*`-gti.fits` – Fits file list of good time intervals identified by the task *espfilt*
- `pn`*prefix*`-gti.txt` – Ascii list of good time intervals identified by the task `espfilt`
- `pn`*prefix*`-hist.qdp` – QDP plot file of the light curves showing the filtered intervals and a histogram of the `pn`*prefix*`-rate.fits` showing the filtering selection.
- `pn`*prefix*`-obj-image-det.fits` – Image of the filtered data in detector coordinates
- `pn`*prefix*`-obj-image-det-soft.fits` – Image of the filtered data in detector coordinates in the $0.2 - 0.9$ keV band
- `pn`*prefix*`-obj-image-det-unfilt.fits` – Image of the unfiltered data in detector coordinates
- `pn`*prefix*`-obj-image-sky.fits` – Image of the filtered data in sky coordinates
- `pn`*prefix*`-ori.fits` – The photon event files produced by `emproc` / `emchain`
- `pn`*prefix*`-ratec.fits` – Light curve of the data from the corners of the detectors in the $2.5 - 12.0$ keV band
- `pn`*prefix*`-rate.fits` – Light curve of the data within the open area of the detectors in the $2.5 - 12.0$ keV band

7 Algorithm

8 Comments

References