evalcorr

January 27, 2025

Abstract

Evaluate the output of eposcorr

1   Instruments/Modes

Instrument	Mode
EPIC	Imaging

2   Use

pipeline processing	yes
interactive analysis	no

3   Description

The task performs one or more of several tests to evaluate the position correction as performed by eposcorr. These tests lead to a boolean value POSCOROK. These are two test, 1XMM and 2XMM. Both rely on values written to the header of the source list by eposcorr. New attributes POSCOROK and SYSERRCC are written to the output as keywords. Options also exist to write additional attributes indicating the result of each test and intermediate values.
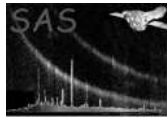
evalcorr performs a simple evaluation of eposcorr amended source lists. If the correlation is determined to be bad then the RA, DEC , LII and BII columns are used to overwrite the RA_CORR , DEC_CORR , LII_CORR and BII_CORR columns respectively.

The 1XMM evaluation is:

$$POSCOROK = ((\sqrt{RAOFFSET^2 + DEOFFSET^2}) <= radius threshold AND LIK\_HOOD > likhood threshold)$$

The 2XMM evaluation is:

$$POSCOROK = (LIK_HOOD > intercept + gradient * LIK_NULL)$$

4 Parameters

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

Parameter	Mand	Type	Default	Constraints

Parameter	Mand	Type	Default	Constraints
input	yes	set		

Input data set. The default table is SRCLIST although an alternative may be specified.

mode	no	string	clone	

Modify the input file or clone to output before making changes.

output	no	set		

Output data set. The output tablename will be the same as input tablename.

radiusthreshold	no	real	6.0	

Radius threshold for 1XMM test.

likhoodthreshold	no	real	5.0	

Likelyhood threshold for 1XMM test.

gradient	no	real	2.0	

Gradiant for 2XMM test.

intercept	no	real	5.0	

Y intercept in 2XMM test.

setsyserrcc	no	bool	yes	

Record the SYSERRCC attribute.

corrsyserrcc	no	real	0.35	

Value of SYSERRCC when correlated.

uncorrsyserrcc	no	real	1.0	

Value of SYSERRCC when uncorrelated.

setlikhdcmp	no	bool	no	

Record the intermediate value LIKHDCMP calculated for the 2XMM test.

recordresult	no	bool	no	

Record the results of individual tests as attributes.

5 Errors

This section documents warnings and errors generated by this task (if any). Note that warnings and errors can also be generated in the SAS infrastructure libraries, in which case they would not be documented here. Refer to the index of all errors and warnings available in the HTML version of the SAS documentation.

InputIdenticaltoOutput *(error)*
The input and output files are the same file. Use the 'amendinput' if you really want to amend the input source list.

OutputDatasetMissing *(error)*
The output dataset name has not been supplied when mode=CLONE.

VitalColumnMissing *(error)*
One of the columns such as RA or DEC does not exist and as such cannot be copied to the corresponding _CORR column.

MissingValue *(error)*
An attribute needed for a test is absent from the input.

6 Input Files

1. PPS product: source list after processing by eposcorr.

7 Output Files

1. PPS product: For mode=CLONE, a clone of the input source list with appropriate keywords and column modifications.

8 Algorithm

9 Comments

References