



 AHELP for CIAO 3.4

bsyserrors

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Synopsis

Defines an expression or file to be used to specify the systematic errors for background data.

Syntax

```
sherpa> BSYSERRORS [<dataset range> | ALLSETS] [ID] = <errorExpr>
```

<dataset range> = # (or more generally #:#,#:#, etc.) such that # specifies a dataset number and #:# represents an inclusive range of datasets; one may specify multiple inclusive ranges by separating them with commas. The default dataset is dataset 1. The ID modifier is used if and only if the Sherpa state object variable multiback is set to 1, i.e., if more than one background dataset is to be associated with a single source dataset. The ID modifier may be any unreserved string (e.g., A, foo, etc.), i.e., a string that is not a parsable command.

Description

The error expression, <errorExpr>, may be composed of one or more (algebraically-combined) of the following elements:

Component:	Description:
BACK	An input background dataset
numericals	Numerical values
operators	+ - * / ()

A few things to note:

- Background systematic error expressions cannot be defined without first reading in a background dataset.
- The input systematic error for a given bin is first multiplied by the datum in that bin; the resulting product is added in quadrature with the statistical error to yield the overall error for that bin.
- The background systematic errors can be specified in an input file; see READ BSYSERRORS for more information.
- If the background systematic errors are not defined using the BSYSERRORS command or input using

READ BSYSEERRORS, they are assumed to be zero.

For additional information, see the related command BERRORS.

The background systematic errors are accessible to the Sherpa/S–Lang module user via the functions `get_bsyserrors` and `set_bsyserrors`.

Example

Define an expression to be used for the background systematic errors. In each bin, they will be computed as 0.1 times the background datum.

```
sherpa> DATA data.dat
sherpa> BACK back.dat
sherpa> BSYSEERRORS = 0.1
```

Bugs

See the [Sherpa bug pages](#) online for an up-to-date listing of known bugs.

See Also

chandra

[guide](#)

sherpa

[autoest](#), [back](#), [berrors](#), [compute_errors](#), [compute_statistic](#), [coord](#), [covariance](#), [data](#), [dataspace](#), [errors](#), [fakeit](#), [feffile](#), [fetest](#), [get_paramest](#), [get_paramestint](#), [get_paramestlim](#), [get_paramestreg](#), [goodness](#), [group](#), [guess](#), [interval-projection](#), [interval-uncertainty](#), [is_subtracted](#), [list_paramest](#), [load](#), [load_arf](#), [load_ascii](#), [load_back_from](#), [load_backset](#), [load_dataset](#), [load_fitsbin](#), [load_image](#), [load_inst](#), [load_inst_from](#), [load_pha](#), [load_pha2](#), [load_rmf](#), [mlr](#), [projection](#), [read](#), [region-projection](#), [region-uncertainty](#), [restore_paramest](#), [run_paramest](#), [run_paramestint](#), [run_paramestlim](#), [run_paramestreg](#), [set_analysis](#), [set_axes](#), [set_backscale](#), [set_coord](#), [set_data](#), [set_errors](#), [set_exptime](#), [set_subtract](#), [set_syserrors](#), [set_weights](#), [setback](#), [setdata](#), [staterrors](#), [subtract](#), [syserrors](#), [uncertainty](#), [ungroup](#), [unsubtract](#), [use](#)

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URL:
<http://cxc.harvard.edu/ciao3.4/bsyserrors.html>
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