



 AHELP for CIAO 3.4

syserrors

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Synopsis

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

Syntax

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

SYSERRORS is used for specifying statistical errors in source datasets, while BSYSERRORS is used for specifying statistical errors in background datasets ("ahelp bsyserrors").

<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.

Description

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

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

A few things to note:

- Systematic error expressions cannot be defined without first reading in a source 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 systematic errors can be specified in an input file; see READ SYSERRORS for more information.
- If the systematic errors are not defined using the SYSERRORS command or input using READ SYSERRORS, they are assumed to be zero.

For additional information, see the related command ERRORS.

The systematic errors are accessible to the Sherpa/S–Lang module user via the functions `get_syserrors` and `set_syserrors`.

Example

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

```
sherpa> DATA data.dat
sherpa> SYSERRORS = 0.1
```

Bugs

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

See Also

sherpa

[berrors](#), [bsyserrors](#), [compute_errors](#), [compute_statistic](#), [covariance_errors](#), [fetest](#), [get_paramest](#), [get_paramestint](#), [get_paramestlim](#), [get_paramestreg](#), [goodness](#), [interval-projection](#), [interval-uncertainty](#), [list_paramest](#), [mlr_projection](#), [region-projection](#), [region-uncertainty](#), [restore_paramest](#), [run_paramest](#), [run_paramestint](#), [run_paramestlim](#), [run_paramestreg](#), [set_errors](#), [set_syserrors](#), [staterrors](#), [uncertainty](#)

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URL:
<http://cxc.harvard.edu/ciao3.4/syserrors.html>
Last modified: December 2006