![Chandra X-ray Center]

AHELP for CIAO 3.4   **sherpa.regunc**   Context: sherpa

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Synopsis

Configure REGION–UNCERTAINTY in Sherpa.

Syntax

```
sherpa.regunc.[field]
```

Description

The Sherpa configuration variable (also called "state object") sherpa.regunc contains settings of REGION–UNCERTAINTY for creating a contour plot of confidence regions using the UNCERTAINTY algorithm in Sherpa. See ahelp REGION–UNCERTAINTY for more details.

The sherpa.regunc fields are listed in the table:

Field	Description
expfac	A multiplicative factor that expands the grid limits estimated by the UNCERTAINTY algorithm, if the grid limits are determined automatically (see arange, and below).
arange	If 1, the grid limits are to be determined automatically. If 0, the grid limits are specified (see min and max).
min	An array of length two giving the grid minima for each plot axis. These are always linear quantities, regardless of the setting of log (see below). The array is ignored if arange = 1.
max	An array of length two giving the grid maxima for each plot axis. These are always linear quantities, regardless of the setting of log (see below). The array is ignored if arange = 1.
log	An array of length two specifying whether to use linear (0) or logarithmic (1) spacing of grid points along each plot axis.
nloop	An array of length two specifying the number of grid points along each plot axis.
sigma	An array of arbitrary length specifying the number of sigma for each contour. The length of the array specifies the number of contours.

Field values may be set using directly.

If the field does not contain an array, e.g.,

```
sherpa> sherpa.regunc.arange = 0
```

and if it does contain an array, e.g.,

```
sherpa> sherpa.regunc.nloop = [25,20]
```

To restore the default settings of the structure at any time, use the Sherpa/S–Lang module function restore_regunc.

Example 1

Set the grid limits for each parameter, e.g. limits of the plot axis.

```
sherpa> sherpa.regunc.arange = 0
sherpa> sherpa.regunc.min=[0.1,1.5]
sherpa> sherpa.regunc.max=[1,2.5]
```

Example 2

List the current and default values of the regunc structure, and restore the default values:

```
sherpa> sherpa.regunc.arange = 0
sherpa> sherpa.regunc.log = [1,1]
sherpa> sherpa.regunc.sigma = [1,3,5]
sherpa> list_regunc

Parameter    Current         Default                       Description
---------------------------------------------------------------------
expfac             3               3            Expansion factor for grid
arange             0               1              Auto-range: 0(n)/1(y)
min            [0,0]           [0,0]            Minimum values, each axis
max            [0,0]           [0,0]            Maximum values, each axis
log            [1,1]           [0,0]  Log-spacing: 0(n)/1(y), each axis
nloop        [40,40]         [40,40]   Number of grid points, each axis
sigma        [1,3,5]         [1,2,3]      Number of sigma, each contour

sherpa> restore_regunc

sherpa> list_regunc

Parameter    Current         Default                       Description
---------------------------------------------------------------------
expfac             3               3            Expansion factor for grid
arange             1               1              Auto-range: 0(n)/1(y)
min            [0,0]           [0,0]            Minimum values, each axis
max            [0,0]           [0,0]            Maximum values, each axis
log            [0,0]           [0,0]  Log-spacing: 0(n)/1(y), each axis
nloop        [40,40]         [40,40]   Number of grid points, each axis
sigma        [1,2,3]         [1,2,3]      Number of sigma, each contour
```

Example 3

Set alias su for sherpa.regunc and use on the command line.

```
sherpa> variable su = sherpa.regunc
sherpa> su.arange = 0
sherpa> su.sigma = [2,4,6]
```

Bugs

See the Sherpa bug pages online for an up–to–date listing of known bugs.

Bugs