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 AHELP for CIAO 3.4

## paramset

Context: [sherpa](#)

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### Synopsis

The model components that have been established in the current Sherpa session, and their parameter information, may be listed with the command `SHOW MODELS`. Values for these established model component parameters may be set individually using one of the following command syntax options:

### Syntax

```
sherpa> [CREATE] <modelname>.{<paramname> | <#>} {= <value> | =>
<paramExpr>}
sherpa> [CREATE] <modelname>.{<paramname> | <#>}.VALUE = <value>
```

where <modelname> is a name given to a model component by the user, <paramname> specifies the parameter whose value is to be set, <value> is the numerical value to which the parameter should be set, and => <paramExpr> is the syntax used for linking parameters.

Note that either <paramname> or <#> may specify the parameter whose value is to be set.

### Description

Parameter values may also be set interactively from a plot. Please see the `GETX` command for information on interactively assigning an x-axis value from a plot to a model parameter; see the `GETY` command for information on interactively assigning a y-axis value.

In addition, the minimum, maximum, and initial delta for parameters may also be individually set, using one of the following command syntax options:

```
sherpa> [CREATE] <modelname>.{<paramname> | <#>}.MIN = <value>
sherpa> [CREATE] <modelname>.{<paramname> | <#>}.MAX = <value>
sherpa> [CREATE] <modelname>.{<paramname> | <#>}.DELTA = <value>
```

Alternatively, model parameters and ranges may all be set at one time, using a single command:

```
sherpa> [CREATE] <modelname>.{<paramname> | <#>} = <param>
```

The command argument <param> contains the parameter assignments <value>:<min>:<max>:<delta>, where

<value> is the value for the model parameter, <min> is the minimum value for the parameter, <max> is the maximum value for the parameter, and <delta> specifies the initial parameter step size.

## Example 1

Establish a model component, and assign it a name; set a model parameter value:

```
sherpa> ERASE ALL
sherpa> PARAMPROMPT OFF
Model parameter prompting is off
sherpa> POLY[modela]
sherpa> modela.c0 = 3.0
```

The command `modela.c0 = 3.0` gives the value of 3.0 to parameter `c0` of `modela`. Note that `modela` is the name given by the user to the Sherpa model component `POLY`. The following commands are each equivalent to the final command:

```
sherpa> modela.c0.VALUE = 3.0
sherpa> modela.1 = 3.0
sherpa> modela.1.VALUE = 3.0
```

## Example 2

Establish a model component, and assign it a name; set a model parameter value, and the parameter range limits:

```
sherpa> POW[modelc]
sherpa> modelc.3 = 10.0
sherpa> modelc.3.MIN = 1.0
sherpa> modelc.3.MAX = 100.0
```

The second command, `modelc.3 = 10.0`, gives the value of 10.0 to parameter number 3 of `modelc`. The third and fourth commands set the minimum and maximum values for parameter number 3 of this model component.

## Example 3

Set initial model parameter step size delta:

```
sherpa> modelc.3.DELTA = 0.05
```

This command sets the parameter's initial step size, `delta`, to a value of 0.05.

## Example 4

Establish two different model components, and assign them names; link one model parameter to another:

```
sherpa> ERASE ALL
sherpa> POLY[modela]
sherpa> GAUSS[modelb]
sherpa> modelb.ampl => 0.5*modela.c0
```

The last command in this series uses a model parameter expression to link the `ampl` parameter of `modelb` to 0.5 multiplied by the `c0` parameter of `modela`.

## Example 5

Establish a model component, and assign it a name; set a model parameter value, and the parameter range limits:

```
sherpa> POW[modelc]
sherpa> modelc.3 = 10.0:1.0:100.0
```

The command `modelc.3 = 10.0:1.0:100.0` gives the value of 10.0 to parameter number 3, sets the minimum to 1.0 for this parameter, and sets the maximum to 100.0 for this parameter, of `modelc` (where `modelc` is the name given by the user to the Sherpa model component `POW`, with the second command). The following command is equivalent to the third command:

```
sherpa> modelc.ampl = 10.0:1.0:100.0
```

## Example 6

Set a model parameter value, the parameter range limits, and set the initial parameter step size delta:

```
sherpa> modelc.3 = 10.0:1.0:100.0:0.05
```

This command gives the value of 10.0 to `modelc` parameter number 3, sets the minimum to 1.0 for this parameter, sets the maximum to 100.0 for this parameter, and sets the parameter's initial step size, delta, to a value of 0.05.

## Bugs

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

## See Also

*sherpa*

[autoest](#), [background](#), [create](#), [create model](#), [createparamset](#), [fit](#), [freeze](#), [get defined models](#), [get model params](#), [get models](#), [get num par](#), [get par](#), [get stackexpr](#), [getx](#), [gety](#), [guess](#), [instrument](#), [integrate](#), [is paramset](#), [jointmode](#), [kernel](#), [lineid](#), [linkparam](#), [mdl](#), [modelexpr](#), [modelstack](#), [nestedmodel](#), [noise](#), [paramprompt](#), [pileup](#), [rename](#), [run fit](#), [set par](#), [set paramset](#), [set stackexpr](#), [source](#), [thaw](#), [truncate](#), [unlink](#)

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