



AHELP for CIAO 3.4

## modelstack

Context: [sherpa](#)

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## Synopsis

A model stack assigns an arbitrary name to a model expression, for subsequent use in parameter expressions and/or nested models.

## Syntax

```
sherpa> <model_stackname> = <modelExpr>
```

where <model\_stackname> is the name being assigned to the model expression.

## Example 1

Create a model stack for use in a parameter expression:

```
sherpa> ERASE ALL
sherpa> GAUSS[modelb]
sherpa> SRC = modelb
sherpa> PositionVariation = POLYNOM1D
sherpa> modelb.pos => PositionVariation
```

The command GAUSS[modelb], assigns the name modelb to the Sherpa model component GAUSS. The next command defines this model component as the source model to be used for fitting. The third command, PositionVariation = POLYNOM1D, assigns a model stack name to the Sherpa default model POLYNOM1D. The final command creates a parameter expression that links the parameter pos of modelb to the model component POLYNOM1D via the model stack name PositionVariation. Note that the creation of a model stack is necessary since the following syntax is currently not allowed: modelb.pos => POLYNOM1D.

## Example 2

Create multiple model stacks for use in parameter expressions:

```
sherpa> ERASE ALL
sherpa> SRC = GAUSS[modelb]
sherpa> PositionVariation = POLY[modela]
sherpa> fwhmVariation = POLY[modelaa]
sherpa> modelb.pos => PositionVariation
sherpa> modelb.fwhm => fwhmVariation
```

This example creates two different model stacks, and assigns the names PositionVariation and fwhmVariation to the model stacks. These model stack names are then used in parameter expressions, to link different parameters of modelb to different model components: the command modelb.fwhm => fwhmVariation, for example, links the parameter fwhm of modelb to the model component modelaa (via the model stack name fwhmVariation).

## Example 3

Create a model stack for use in a nested model:

```
sherpa> SHLOGE[modelk]
sherpa> independent = SIN[modeli] + COS[modelj]
sherpa> SOURCE = modelk{independent}
```

The command SHLOGE[modelk] assigns the name modelk to the Sherpa model component SHLOGE. Next, the user assigns a model stack name (independent) to the model expression SIN[modeli] + COS[modelj]. With the final command, the user then assigns the model expression modelk{independent}, to the source model for dataset number 1. This source model expression is a nested model, which utilizes the model stack. Note that the model stack definition is necessary since the following syntax is not allowed: SOURCE = modelk{SIN[modeli] + COS[modelj]}.

## 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](#), [modeexpr](#), [nestedmodel](#), [noise](#), [paramprompt](#), [paramset](#), [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/modelstack.html>  
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