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 AHELP for CIAO 3.4

## linkparam

Context: [sherpa](#)

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### Synopsis

Parameter expressions are used to link model component parameters:

### Syntax

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

where <modelname> is the name that has been given to a model component by the user. Note that either <paramname> or <#> may specify a parameter.

### Description

The parameter expression, <paramExpr>, to which the parameter is being linked, may be composed of one, or more (combined algebraically), of the following elements:

Element	Description:
<modelname>.{<paramname>   <#>}	A model component parameter.
<model_stackname>	A model expression, specified via a model stack name.

A parameter expression may be an algebraic combination of these elements that may include numerical values and the following operators: + - \* / ( ) <> { }.

The command UNLINK may be used to remove a link between model parameters:

```
sherpa> UNLINK <modelname>.{<paramname> | <#>}
```

### Example 1

Link one model parameter to another:

```

sherpa> ERASE ALL
sherpa> PARAMPROMPT ON
Model parameter prompting is on
sherpa> GAUSS[modelb]
modelb.fwhm parameter value [10]
modelb.pos parameter value [0]
modelb.ampl parameter value [1]
sherpa> GAUSS[modelf]
modelf.fwhm parameter value [10]
modelf.pos parameter value [0]
modelf.ampl parameter value [1]
sherpa> modelf.ampl => 0.5*modelb.ampl

```

The last command in this series uses a model parameter expression, to link the ampl parameter of modelf to 0.5 multiplied by the ampl parameter of modelb. That is, the amplitudes of two Gaussian models are linked, where one is half that of the other. Note that model parameter expressions cannot be created within the model parameter prompting. Note that the link may be removed as follows:

```
sherpa> UNLINK modelf.ampl
```

## Example 2

Link one model parameter to another:

```

sherpa> PARAMPROMPT OFF
Model parameter prompting is off
sherpa> POW[modelc]
sherpa> POW[modeld]
sherpa> POW[modele]
sherpa> modelc.1 => modele.1
sherpa> modelc.3 => modeld.3 + modele.3

```

The next-to last command in this series links the first parameter (gamma) of modelc to the first parameter of modele. The last command in this series links the third parameter (ampl) of modelc to the sum of the third parameters of modeld and modele. Note that the links may be removed as follows:

```

sherpa> UNLINK modelc.1
sherpa> UNLINK modelc.3

```

## Example 3

Link a model parameter to a model expression:

```

sherpa> ERASE ALL
sherpa> SIN[modeli]
sherpa> SOURCE = modeli
sherpa> PeriodVariation = POLY[modela]
sherpa> modeli.period => PeriodVariation

```

The first command, SIN[modeli], assigns the name modeli to the Sherpa model component SIN. The second command defines this model component as the source model to be used for fitting. The third command, PeriodVariation = POLY[modela], creates a model stack. The final command links the parameter period of modeli to the parameter expression PeriodVariation (which is composed of the model component modela). Note

that the following parameter expression syntax is currently not allowed: model1.period => POLY[modela].

## 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](#), [mdl](#), [modelexpr](#), [modelstack](#), [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/linkparam.html>  
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