



 AHELP for CIAO 3.4

guess

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Synopsis

Estimates initial parameter values and ranges, based on input data.

Syntax

```
sherpa> GUESS <arg> [# [ID]]

# specifies the dataset whose data are to be used to help estimated
parameter values. The ID modifier is used only for guesses involving
background data, and then if and only if the Sherpa state object
variable multiback is set to 1, i.e., if more than one background
dataset is to be associated with a single source dataset. The ID
modifier may be any unreserved string (e.g., A, foo, etc.), i.e., a
string that is not a parsable command.
```

Description

<arg> may be:

GUESS Command Arguments

Argument	To perform an estimate for:
MODELS	All current model components.
<sherpa_model_stack>	All current model components in the named stack (SOURCE, BACKGROUND, PILEUP, [B]NOISE, or KERNEL).
<sherpa_modelname>	The specified model component.
<modelname>	The specified model component.

In addition, <arg> may be either ON or OFF, to turn Sherpa's parameter–value–guessing mechanism on and off respectively.

Note that:

- When a name is assigned to a model component, the model component is established, and if a dataset has been input then estimates are automatically made for the initial parameter values and their ranges (i.e., the

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GUESS command is run without the user having to explicitly issue the command, unless the user has previously issued the command GUESS OFF, in which case the parameters take on default values).

- If multiple datasets have been input, and a model component has been established without using the SOURCE command, such as in

```
sherpa> GAUSS[g]
```

then parameter estimates will be made using the first dataset. To refine the estimates for, e.g., dataset 3, do the following:

```
sherpa> SOURCE 3 = g
sherpa> GUESS SOURCE 3
```

- If multiple datasets have been input, and a model component has been established using the SOURCE command, such as in

```
sherpa> SOURCE 4 = GAUSS[g]
```

then parameter estimates will be made using the numbered dataset, in this example, dataset number 4.

- If a dataset has been input, and an RSP model defined, but INSTRUMENT has not been set, such as in

```
sherpa> RSP[a](example2.arf,example2.rmf)
sherpa> SOURCE = GAUSS[g]
```

then parameter estimates will be made using the counts data (divided by the observation time, if provided in the PHA header); i.e., they will not take into account the area information provided in the ARF. For good parameter estimates, always set the instrument!

```
sherpa> RSP[a](example2.arf,example2.rmf)
sherpa> INSTRUMENT = a
sherpa> SOURCE = GAUSS[g]
```

- If a dataset has been input, and an RSP model defined with only an RMF (and no ARF), and the INSTRUMENT has been set, then the parameter estimates will be suboptimal, as they will not utilize effective area information that may have been included.
- The guessing algorithm may not be optimal for complex model expressions.

See the CREATE command for more information and other examples.

Example 1

Estimate initial parameter values and ranges, based on input dataset number 1:

```
sherpa> PARAMPROMPT OFF
sherpa> POLY[modela]
sherpa> DATA example1.dat
sherpa> GUESS modela
```

This command estimates parameter values and ranges for component modela, based on dataset 1.

Example 2

Estimate initial parameter values and ranges, based on a specified input dataset:

```
sherpa> DATA 2 example2.dat
sherpa> GUESS MODELS 2
```

This command estimates parameter values and ranges for all current model components, based on dataset 2.

Example 3

Estimate initial parameter values and ranges for source models and their corresponding datasets, when multiple source models have been defined and multiple datasets have been input:

```
sherpa> ERASE ALL
sherpa> READ DATA 1 example1.dat
sherpa> READ DATA 2 example2.dat
sherpa> READ DATA 3 example3.dat
sherpa> POW[modelc]
sherpa> GAUSS[modelf]
sherpa> BBODY[modelh]
sherpa> SOURCE 1 = modelc
sherpa> SOURCE 2 = modelf
sherpa> SOURCE 3 = modelh
sherpa> GUESS SOURCE 1
```

This command estimates initial parameter values and ranges, based on dataset number 1, for the components of the source model for dataset number 1 (i.e., modelc). Note, however, that these estimates were already made automatically when component modelc was first established with the command POW[modelc].

```
sherpa> GUESS SOURCE 2
```

Estimates initial parameter values and ranges, based on dataset number 2, for the components of the source model for dataset number 2 (i.e., modelf). Note that until this command is issued, the initial parameter values for modelf are estimates based on dataset number 1.

```
sherpa> GUESS SOURCE 3
```

Estimates initial parameter values and ranges, based on dataset number 3, for the components of the source model for dataset number 3 (i.e., modelh). Note that until this command is issued, the initial parameter values for modelh are estimates based on dataset number 1.

Bugs

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

See Also

chandra

[guide](#)

sherpa

[autoest](#), [back](#), [background](#), [berrors](#), [bsyserrors](#), [bye](#), [calc_kcorr](#), [coord](#), [create](#), [create_model](#), [createparamset](#), [data](#), [dataspace](#), [dcounts](#), [dollarsign](#), [echo](#), [eflux](#), [eqwidth](#), [erase](#), [fakeit](#), [feffile](#), [fit](#), [flux](#), [freeze](#), [get](#), [get_dcounts_sum](#), [get_defined_models](#), [get_dir](#), [get_eflux](#), [get_eqwidth](#), [get_filename](#), [get_flux2d](#), [get_flux_str](#), [get_lfactorial](#), [get_mcounts_sum](#), [get_model_params](#), [get_models](#), [get_num_par](#), [get_par](#), [get_pflux](#), [get_source_components](#), [get_stackexpr](#), [get_verbose](#), [getx](#), [gety](#), [group](#), [groupbycounts](#), [instrument](#), [integrate](#), [is](#), [is_paramset](#), [is_subtracted](#), [jointmode](#), [journal](#), [kernel](#), [lineid](#), [linkparam](#), [list](#), [list_par](#), [load](#), [load_arf](#), [load_ascii](#), [load_back_from](#), [load_backset](#), [load_dataset](#), [load_fitsbin](#), [load_image](#), [load_inst](#), [load_inst_from](#), [load pha](#), [load pha2](#), [load_rmf](#), [mcounts](#), [mdl](#), [modelepr](#), [modelstack](#), [nestedmodel](#), [noise](#), [numbersign](#), [paramest](#), [paramprompt](#), [paramset](#), [pileup](#), [plot_eprof](#), [plot_rprof](#), [prompt](#), [read](#), [rename](#), [reset](#), [run](#), [run_fit](#), [set](#), [set_analysis](#), [set_axes](#), [set_backscale](#), [set_coord](#), [set_data](#), [set_dataspace](#), [set_dir](#), [set_exptime](#), [set_par](#), [set_paramset](#), [set_stackexpr](#), [set_subtract](#), [set_verbose](#), [set_weights](#), [setback](#), [setdata](#), [setplot](#), [sherpa-module](#), [sherpa_plotfns](#), [sherpa_utils](#), [show](#), [simspec](#), [source](#), [subtract](#), [thaw](#), [truncate](#), [ungroup](#), [unlink](#), [unsubtract](#), [use](#), [version](#)

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