



AHELP for CIAO 3.4

montecarlo

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Synopsis

A Monte Carlo search of parameter space.

Syntax

```
montecarlo [nloop] [iseed]
```

Description

The MONTECARLO method randomly samples the parameter space bounded by the lower and upper limits of each thawed parameter. At each chosen point, the fit statistic is evaluated. The advantage of MONTECARLO is that it can provide a good sampling of parameter space. This is good for situations where the best-fit parameter values are not easily guessed a priori, and where there is a high probability that false minima would be found if one-shot techniques such as POWELL are used instead. Its disadvantages are that it can be slow (if many points are selected), and that because of the random, discrete nature of the search, the global fit-statistic minimum can easily be missed. (The latter disadvantage may be alleviated by combining a Monte Carlo search with Powell minimization; see MONTE-POWELL.)

If the number of thawed parameters is larger than 3, one should increase the value of nloop from its default value. Otherwise the sampling may be too sparse to estimate the global fit-statistic minimum well.

Parameters

name	type	def	min	max
nloop	integer	500	1	1.6777e+7
iseed	integer	14391	-1.e+20	1.e+20

Detailed Parameter Descriptions

Parameter=nloop (integer default=500 min=1 max=1.6777e+7)

Number of parameter space samples.

Parameter=iseed (integer default=14391 min=-1.e+20 max=1.e+20)

Seed for random number generator.

Bugs

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

See Also

sherpa

[get_method](#), [expr](#), [grid](#), [grid-powell](#), [levenberg-marquardt](#), [method](#), [monte-lm](#), [monte-powell](#),
[powell](#), [sigma-rejection](#), [simplex](#), [simul-ann-1](#), [simul-ann-2](#), [simul-pow-1](#), [simul-pow-2](#),
[usermethod](#)

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