NAG Library Function Document

nag_fit_opt_set (e02zkc)

1 Purpose

nag_fit_opt_set (e02zkc) either initializes or resets the optional argument arrays or sets a single optional argument for supported problem solving functions in Chapter e02. Currently, only nag_2d_spline_fit_ts_scat (e02jdc) is supported.

2 Specification

#include <nag.h>
#include <nage02.h>
void nag_fit_opt_set (const char *optstr, Integer iopts[], Integer liopts, double opts[], Integer lopts, NagError *fail)

3 Description

nag_fit_opt_set (e02zkc) has three purposes: to initialize optional argument arrays, to reset all optional arguments to their default values or to set a single optional argument to a user-supplied value.

Optional arguments and their values are, in general, presented as a character string, optstr, of the form 'option = optval'; alphabetic characters can be supplied in either upper or lower case. Both option and optval may consist of one or more tokens separated by white space. The tokens that comprise optval will normally be either an integer, real or character value as defined in the description of the specific optional argument. In addition all optional arguments can take an optval DEFAULT which resets the optional argument to its default value.

It is imperative that optional argument arrays are initialized before any options are set, before the relevant problem solving function is called and before any options are queried using nag_fit_opt_get (e02zlc). To initialize the optional argument arrays iopts and opts for a specific problem solving function, the option Initialize is used with optval identifying the problem solving function to be called, via its short name. For example, to initialize optional argument arrays to be passed to nag_2d_spline_fit_ts_scat (e02jdc), nag_fit_opt_set (e02zkc) is called as follows:

nag_fit_opt_set("Initialize = e02jdc", iopts, liopts, opts, lopts, &fail);

Information relating to available option names and their corresponding valid values is given in Section 11 in nag_2d_spline_fit_ts_scat (e02jdc).

4 References

None.
5 Arguments

1: optstr – const char *  
   On entry: a string identifying the option to be set.
   Initialize = function name
   Initialize the optional argument arrays iopts and opts for use with function function name, where function name is the short name of the problem solving function you wish to use.
   Defaults
   Resets all options to their default values.
   option = optval
   See Section 11 in nag_2d_spline_fit_ts_scat (e02jdc) for details of valid values for option and optval. The equals sign (=) delimiter must be used to separate the option from its optval.
   The processing of optstr does not depend on its case. Each token in the option and optval component must be separated by at least one space.

2: iopts[liopts] – Integer  
   On entry: optional argument array.
   If optstr has the form Initialize = function name, the contents of iopts need not be set.
   Otherwise, iopts MUST NOT have been altered since the last call to nag_fit_opt_set (e02zkc), nag_fit_opt_get (e02zlc) or the selected problem solving function or suite of functions.
   On exit: dependent on the contents of optstr, either an initialized, reset or updated version of the optional argument array.

3: liopts – Integer  
   On entry: the length of the array iopts.
   Constraint: unless otherwise stated in the documentation for a specific, supported, problem solving function, liopts ≥ 100.

4: opts[lopts] – double  
   On entry: optional argument array.
   If optstr has the form Initialize = function name, the contents of opts need not be set.
   Otherwise, opts MUST NOT have been altered since the last call to nag_fit_opt_set (e02zkc), nag_fit_opt_get (e02zlc) or the selected problem solving function or suite of functions.
   On exit: dependent on the contents of optstr, either an initialized, reset or updated version of the optional argument array.

5: lopts – Integer  
   On entry: the length of the array opts.
   Constraint: unless otherwise stated in the documentation for a specific, supported, problem solving function, lopts ≥ 100.

6: fail – NagError *  
   On entry: the NAG error argument (see Section 3.6 in the Essential Introduction).
6 Error Indicators and Warnings

NE_ALLOC_FAIL
Dynamic memory allocation failed.
See Section 3.2.1.2 in the Essential Introduction for further information.

NE_BAD_PARAM
On entry, argument ⟨value⟩ had an illegal value.

NE_INT
On entry, liopts = ⟨value⟩.
Constraint: liopts ≥ ⟨value⟩.
On entry, lopts = ⟨value⟩.
Constraint: lopts ≥ ⟨value⟩.

NE_INTERNAL_ERROR
An internal error has occurred in this function. Check the function call and any array sizes. If the call is correct then please contact NAG for assistance.
An unexpected error has been triggered by this function. Please contact NAG.
See Section 3.6.6 in the Essential Introduction for further information.

NE_INVALID_FORMAT
On entry, could not convert the specified optval to an integer: optstr = ⟨value⟩.
On entry, could not convert the specified optval to a real: optstr = ⟨value⟩.
On entry, the expected delimiter ‘=’ was not found in optstr: optstr = ⟨value⟩.

NE_INVALID_OPTION
On entry, either the option arrays have not been initialized or they have been corrupted.
On entry, the optional argument in optstr was not recognized: optstr = ⟨value⟩.

NE_INVALID_VALUE
On entry, the optval supplied for the character optional argument is not valid.
optstr = ⟨value⟩.
On entry, the optval supplied for the integer optional argument is not valid.
optstr = ⟨value⟩.
On entry, the optval supplied for the real optional argument is not valid.
optstr = ⟨value⟩.

NE_NO_LICENCE
Your licence key may have expired or may not have been installed correctly.
See Section 3.6.5 in the Essential Introduction for further information.

NE_NOT_FUN_NAME
On entry, attempting to initialize the optional argument arrays but specified function name was not valid: name = ⟨value⟩.

7 Accuracy
Not applicable.
8 Parallelism and Performance

nag_fit_opt_set (e02zkc) is threaded by NAG for parallel execution in multithreaded implementations of the NAG Library.

Please consult the X06 Chapter Introduction for information on how to control and interrogate the OpenMP environment used within this function. Please also consult the Users’ Note for your implementation for any additional implementation-specific information.

9 Further Comments

None.

10 Example

See the example programs associated with the problem solving function you wish to use for a demonstration of how to use nag_fit_opt_set (e02zkc) to initialize option arrays and set options.