

NAG Toolbox for MATLAB

h02cd

1 Purpose

To supply individual optional parameters to h02cb.

2 Syntax

```
h02cd(str)
```

3 Description

h02cd may be used to supply values for optional parameters to h02cb. It is only necessary to call h02cd for those parameters whose values are to be different from their default values. One call to h02cd sets one parameter value.

Each optional parameter is defined by a single character string of up to 72 characters, consisting of one or more items. The items associated with a given option must be separated by spaces, or equal signs [=]. Alphabetic characters may be upper or lower case. The string

```
Print level = 1
```

is an example of a string used to set an optional parameter. For each option the string contains one or more of the following items:

- a mandatory keyword;
- a phrase that qualifies the keyword;
- a number that specifies an integer or double value. Such numbers may be up to 16 contiguous characters in Fortran 77's I, F, E or D formats, terminated by a space if this is not the last item on the line.

Blank strings and comments are ignored. A comment begins with an asterisk (*) and all subsequent characters in the string are regarded as part of the comment.

Normally, each user-specified option is printed as it is defined, on the current advisory message unit (see x04ab), but this printing may be suppressed using the keyword **Nolist**. Thus the statement

```
h02cd('Nolist')
```

suppresses printing of this and subsequent options. Printing will automatically be turned on again after a call to h02cb, and may be turned on again at any time by you, by using the keyword **List**.

Optional parameter settings are preserved following a call to h02cb, and so the keyword **Defaults** is provided to allow you to reset all the optional parameters to their default values by the statement,

```
h02cd('Defaults')
```

prior to a subsequent call to h02cb.

A complete list of optional parameters, their abbreviations, synonyms and default values is given in Section 11 of the document for h02cb.

4 References

None.

5 Parameters

5.1 Compulsory Input Parameters

1: **str** – string

A single valid option string (as described in Section 3 above and in Section 11 of the document for h02cb).

5.2 Optional Input Parameters

None.

5.3 Input Parameters Omitted from the MATLAB Interface

None.

5.4 Output Parameters

None.

6 Error Indicators and Warnings

7 Accuracy

Not applicable.

8 Further Comments

None.

9 Example

```
h02cb_monit.m
```

```
function [bstval, halt, count] = ...  
    monit(intfnd, nodes, depth, obj, x, bstval, bstsol, bl, bu, n,  
    halt, count)
```

```
h02cb_qphess.m
```

```
function [hx] = qphess(n, jthcol, h, ldh, x)  
    hx = h*x;
```

```
n = int32(7);  
a = [1, 1, 1, 1, 1, 1, 1;  
    0.15, 0.04, 0.02, 0.04, 0.02, 0.01, 0.03;  
    0.03, 0.05, 0.08, 0.02, 0.06, 0.01, 0;  
    0.02, 0.04, 0.01, 0.02, 0.02, 0, 0;  
    0.02, 0.03, 0, 0, 0.01, 0, 0;  
    0.7, 0.75, 0.8, 0.75, 0.8, 0.97, 0;  
    0.02, 0.06, 0.08, 0.12, 0.02, 0.01, 0.97];  
bl = [-0.01;  
    -0.1;  
    -0.01;  
    -0.04;  
    -0.1;  
    -0.01;
```

```

        -0.01;
        -0.13;
        -9.999999999999999e+24;
        -9.999999999999999e+24;
        -9.999999999999999e+24;
        -9.999999999999999e+24;
        -0.0992;
        -0.003];
bu = [0.01;
      0.15;
      0.03;
      0.02;
      0.05;
      9.999999999999999e+24;
      9.999999999999999e+24;
      -0.13;
      -0.0049000000000000001;
      -0.0064;
      -0.0037;
      -0.0012;
      9.999999999999999e+24;
      0.002];
cvec = [-0.02;
        -0.2;
        -0.2;
        -0.2;
        -0.2;
        0.04;
        0.04];
h = [2, 0, 0, 0, 0, 0, 0;
     0, 2, 0, 0, 0, 0, 0;
     0, 0, 2, 2, 0, 0, 0;
     0, 0, 2, 2, 0, 0, 0;
     0, 0, 0, 0, 2, 0, 0;
     0, 0, 0, 0, 0, -2, -2;
     0, 0, 0, 0, 0, -2, -2];
intvar = [int32(4)];
istate = zeros(14, 1, 'int32');
xs = zeros(14, 1);
xs(1:7) = [-0.01;
           -0.03;
           0;
           -0.01;
           -0.1;
           0.02;
           0.01];
strtg = int32(2);
lwrk = int32(10000);
h02cd('Nolist');
h02cd('Print Level = 0');
[istateOut, xsOut, obj, ax, clamda, ifail] = ...
    h02cb(n, a, bl, bu, cvec, h, 'h02cb_qphess', intvar, istate, xs,
    strtg, lwrk, 'h02cb_monit')

istateOut =
    1
    0
    0
    1
    0
    0
    0
    3
    0
    0
    0
    0
    1
    1

xsOut =

```

```
-0.0100
-0.0733
-0.0003
  0
-0.0634
  0.0141
  0.0028
    0
    0
    0
    0
    0
    0
    0
obj =
  0.0375
ax =
-0.1300
-0.0055
-0.0076
-0.0044
-0.0030
-0.0992
-0.0030
clamda =
  0.4949
    0
    0
  0.0199
    0
    0
    0
-2.0340
    0
    0
    0
    0
  2.0815
  2.1032
ifail =
      0
```
