NAME

va15ma – CUTEr VA15 test driver

SYNOPSIS

va15ma

DESCRIPTION

The *va15ma* main program test drives VA15 on SIF problems from the CUTEr distribution.

VA15 is a subroutine for the solution of the large-scale unconstrained minimization problem. The routine does not require (nor exploits) knowledge about the sparsity structure of the Hessian matrix. It uses a limited memory BFGS quasi-Newton method.

VA15 is part of the HARWELL SUBROUTINE LIBRARY, and was written by J. Nocedal. It is available from the United Kingdom Atomic Energy Authority, Harwell, subject to certain license agreements. It is copyrighted jointly by the UKAEA and SERC (Science and Engineering Research Council).

USAGE

To build the *precision* precision version, the VA15 *precision* subroutine and dependencies should be concatenated in a new file called va15.f. This file should then be compiled (but not linked) and the resulting object file va15.o placed in the direcotory $MYCUTER/*precision*/bin/, where *precision* is either "single" or "double", according to your local installation.

NOTE

If no VA15.SPC file is present in the current directory, the default version is copied from $CUTER/common/src/pkg/va15/. Default specifications are as follows:

5	M,	the number of iterations in the memory,
-1	IPRINT(1)	specifies the frequency of output (<0: no output),
0	IPRINT(2)	specifies content of output (0: minimal),
10000	MAXIT,	the maximum number of iterations,
0.00001	EPS,	the stopping tolerance.

The reader is referred to the paper quoted below, the documentation of the routine in the Harwell Subroutine Library or the code itself if they wish to modify these parameters.

ENVIRONMENT

CUTER

Parent directory for CUTEr

MYCUTER

Home directory of the installed CUTEr distribution.

AUTHORS

I. Bongartz, A.R. Conn, N.I.M. Gould, D. Orban and Ph.L. Toint

SEE ALSO

CUTEr (and SifDec): A Constrained and Unconstrained Testing Environment, revisited,
N.I.M. Gould, D. Orban and Ph.L. Toint,
ACM TOMS, **29**:4, pp.373-394, 2003.

CUTE: Constrained and Unconstrained Testing Environment, I. Bongartz, A.R. Conn, N.I.M. Gould and Ph.L. Toint, TOMS, **21**:1, pp.123-160, 1995.

On the limited memory BFGS method for large-scale optimization, J. Nocedal, Technical report NA-03, Department of Electrical Enginnering and Computer Science, Northwestern University, Evanston (USA), 1988.

sdva15(1), va15(1).