NAME

vf13ma – CUTEr VF13 test driver

SYNOPSIS

vf13ma

DESCRIPTION

The *vf13ma* main program test drives VF13 on SIF problems from the CUTEr distribution.

VE13 is a subroutine for the solution of the general nonlinear programming problem, involving a possibly nonlinear objective function and possibly nonlinear inequality and equality constraints. It uses a sequential quadratic programming (SQP) approach and allows for a non-monotonic decrease of the merit function using safeguards (the watchdog technique).

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USAGE

To build the *precision* precision version, the VF13 *precision* subroutine and dependencies should be concatenated in a new file called vf13.f. This file should then be compiled (but not linked) and the resulting object file vf13.o placed in the direcotory $MYCUTER/*precision*/bin/.

NOTE

If no VF13.SPC file is present in the current directory, the default version is copied from $CUTER/common/src/pkg/vf13/. Default specifications are as follows:

1000	MAXFUN,	the maximum number of function calls,
0	IPRINT,	the output specifier (0 = no internal printout),
0.0000001	ACCREQ,	the accuracy requirement,
F	DEBUG,	true for maximal printout before and after VF13.

The reader is referred to the papers quoted below, the documentation of the routine in the Harwell Subroutine Library or the code itself if he or she wishes 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.

Extensions to subroutine VF02, M.J.D. Powell, in "System Modeling and Optimization", Lectures Notes in Control and Information Sciences 38, R.F. Drenick and F. Kozin (eds.), Springer Verlag, Heidelberg, pp. 520-538, 1982.

The watchdog technique for forcing convergence in algorithms for constrained optimization, R.M. Chamberlain, C. Lemarechal, H.C. Pedersen and M.J.D. Powell, Mathematical Programming Study 16, pp. 1-17, 1982.

On the quadratic programming algorithm of Goldfarb and Idnani, M.J.D. Powell, Mathematical Programming Study 25, pp. 46-61, 1985.

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