NAME

CUTEST_ccifg − CUTEst tool to evaluate a single constraint function value and possibly gradient.

SYNOPSIS

CALL CUTEST_ccifg(data, status, n, icon, X, ci, GCI_val, grad)

DESCRIPTION

The CUTEST_ccifg subroutine evaluates the value of a particular constraint function of the problem decoded from a SIF file by the script *sifdecode* at the point X, and possibly its gradient in the constrained minimization case. The problem under consideration is to minimize or maximize an objective function $f(x)$ over all $x \in R^n$ subject to general equations $c_i(x) = 0$, $(i \in 1, \ldots, m_E)$, general inequalities $c_i^l(x) \leq c_i(x) \leq c_i^u(x)$, $(i \in m_E + 1, \ldots, m)$, and simple bounds $x^l \leq x \leq x^u$. The objective function is group-partially separable and all constraint functions are partially separable.

ARGUMENTS

The arguments of CUTEST_ccifg are as follows

data [inout] - CUTEST_data_type derived type
problem-specific private data,

status [out] - integer
the outputr status: 0 for a succesful call, 1 for an array allocation/deallocation error, 2 for an array bound error, 3 for an evaluation error,

n [in] - integer
the number of variables for the problem,

icon [in] - integer
the index of the constraint function to be evaluated,

X [in] - real/double precision
an array which gives the current estimate of the solution of the problem,

ci [out] - real/double precision
the value of constraint function icon at X,

GCI_val [out] - real/double precision
an array which gives the gradient of constraint function icon evaluated at X,

grad [in] - logical
a logical variable which should be set .TRUE. if the gradient of the constraint functions are required and .FALSE. otherwise.

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.

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