Package ‘rminqa’

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Type Package

Title Derivative-Free Optimization in R using C++

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Description Perform derivative-free optimization algorithms in R using C++.
A wrapper interface is provided to call C function of the 'bobyqa' implementation
(See <https://github.com/emmt/Algorithms/tree/master/bobyqa>).

License GPL (>= 2)

Encoding UTF-8

SystemRequirements C++11

Imports Rcpp (>= 1.0.7)

LinkingTo Rcpp, RcppArmadillo

RoxygenNote 7.1.2

Suggests minqa

NeedsCompilation yes

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Repository CRAN

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R topics documented:

bobyqa_rosen_x1 — *Example 1a: Minimize Rosenbrock function using bobyqa*

Description

Minimize Rosenbrock function using bobyqa and expect a normal exit from bobyqa.

Usage

```
bobyqa_rosen_x1()
```

Value

No return value, called for side effects.

Examples

```
fr <- function(x) {   ## Rosenbrock Banana function
 x1 <- x[1]
 x2 <- x[2]
 100 * (x2 - x1 * x1)^2 + (1 - x1)^2
}
(x1 <- minqa::bobyqa(c(1, 2), fr, lower = c(0, 0), upper = c(4, 4)))
## => optimum at c(1, 1) with fval = 0
str(x1) # see that the error code and msg are returned

## corresponding C++ implementation:
bobyqa_rosen_x1()
```

bobyqa_rosen_x1e — *Example 1b: Minimize Rosenbrock function using bobyqa*

Description

Minimize Rosenbrock function using bobyqa and expect a normal exit from bobyqa.

Usage

```
bobyqa_rosen_x1e()
```

Value

No return value, called for side effects.

Examples

```
fr <- function(x) {   ## Rosenbrock Banana function
 x1 <- x[1]
 x2 <- x[2]
 100 * (x2 - x1 * x1)^2 + (1 - x1)^2
}
# check the error exits
# too many iterations
x1e <- minqa::bobyqa(c(1, 2), fr, lower = c(0, 0), upper = c(4, 4), control = list(maxfun=50))
str(x1e)

## corresponding C++ implementation:
bobyqa_rosen_x1e()
```

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rminqa *rminqa*

Description

Perform derivative-free optimization algorithms in R using C++. A wrapper interface is provided to call C function of the bobyqa implementation.

Author(s)

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