Package: ROI.plugin.qpoases (via r-universe)

October 20, 2026

Version 1.0-3

Title 'qpOASES' Plugin for the 'R' Optimization Infrastructure

Description Enhances the 'R' Optimization Infrastructure ('ROI') package with the quadratic solver 'qpOASES'. More information about 'qpOASES' can be found at <https://github.com/coin-or/qpOASES>.

Imports methods, slam, ROI (>= 1.0-0), Rcpp (>= 0.12.11), checkmate

License GPL-3

LinkingTo Rcpp

URL https://roigrp.gitlab.io,
https://gitlab.com/roigrp/solver/ROI.plugin.qpoases

NeedsCompilation yes

Author Florian Schwendinger [aut, cre], Hans Joachim Ferreau [cph], Andreas Potschka [cph], Christian Kirches [cph], Dennis Janka [cph], Andreas Waechter [cph]

Maintainer Florian Schwendinger <FlorianSchwendinger@gmx.at>

Repository https://cran.r-universe.dev

Date/Publication 2023-07-07 11:50:02 UTC

RemoteUrl https://github.com/cran/ROI.plugin.qpoases

RemoteRef HEAD

RemoteSha 705021494aa34e87c21a24e95995e0dc13c0fad8

Contents

ROI.plugin.qpoases-package 2
Example-1 2

Index **4**

ROI.plugin.qpoases-package *qpOASES*

Description

This package provides an interface to qpOASES. pOASES is an open-source C++ implementation of the online active set strategy, which was inspired by important observations from the field of parametric quadratic programming (QP).

References

H.J. Ferreau and C. Kirches and A. Potschka and H.G. Bock and M. Diehl. qpOASES: A parametric active-set algorithm for quadratic programming, "Mathematical Programming Computation", 2014

H.J. Ferreau and H.G. Bock and M. Diehl. An online active set strategy to overcome the limitations of explicit MPC, "International Journal of Robust and Nonlinear Control", 2008

H.J. Ferreau and A. Potschka and C. Kirches. qpOASES "webpage" https://github.com/coin-or/qpOASES, 2017

Example-1 *Quadratic Problem 1*

Description

$$maximize \;\; x_1^2 + x_2^2 + x_3^2 - 5x_2$$
$$subject\ to:$$
$$-4x_1 - 3x_2 + \geq -8$$
$$2x_1 + x_2 + \geq 2$$
$$-2x_2 + x_3 \geq 0$$
$$x_1, x_2, x_3 \geq 0$$

Examples

```
Sys.setenv(ROI_LOAD_PLUGINS = "FALSE")
library("ROI")
library("ROI.plugin.qpoases")

A <- cbind(c(-4, -3, 0),
           c( 2,  1, 0),
           c( 0, -2, 1))
x <- OP(Q_objective(diag(3), L =  c(0, -5, 0)),
        L_constraint(L = t(A),
```

```
                      dir = rep(">=", 3),
                      rhs = c(-8, 2, 0)))

opt <- ROI_solve(x, solver="qpoases")
opt
## Optimal solution found.
## The objective value is: -2.380952e+00
solution(opt)
## [1]  0.4761905 1.0476190 2.0952381
```

Index

Example-1, 2

ROI.plugin.qpoases-package, 2