

Package ‘ROI.plugin.quadprog’

August 31, 2020

Version 1.0-0

Title 'quadprog' Plug-in for the 'R' Optimization Infrastructure

Description Enhances the R Optimization Infrastructure ('ROI') package by registering the 'quadprog' solver. It allows for solving quadratic programming (QP) problems.

Imports methods, quadprog, ROI (>= 0.3-0), slam

License GPL-3

URL <http://roi.r-forge.r-project.org/>,
<https://r-forge.r-project.org/projects/roi/>

NeedsCompilation no

Author Stefan Theussl [aut, cre]

Maintainer Stefan Theussl <Stefan.Theussl@R-Project.org>

Repository CRAN

Date/Publication 2020-08-31 14:52:17 UTC

R topics documented:

Example-1	1
Index	3

Example-1	<i>Quadratic Problem 1</i>
-----------	----------------------------

Description

$$\text{maximize } x_1^2 + x_2^2 + x_3^2 - 5x_2$$

subject to :

$$-4x_1 - 3x_2 + \geq -8$$

$$2x_1 + x_2 + x_3 \geq 2$$

$$-2x_2 + x_3 \geq 0$$

$$x_1, x_2, x_3 \geq 0$$

Examples

```
require("ROI")
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="quadprog")
opt
## Optimal solution found.
## The objective value is: -2.380952e+00
solution(opt)
## [1] 0.4761905 1.0476190 2.0952381
```

Index

Example-1, 1