**COSMO.jl** is a Julia implementation of the Conic Operator Splitting Method. The underlying ADMM-algorithm is well-suited for large convex conic problems. COSMO solves the following problem:

COSMO can be installed using the Julia package mana

ger for Julia v1.0 and higher. Inside the Julia REPL, type ] to enter the Pkg REPL mode then run

pkg> add COSMO

1. 10\*10

@time begin

using COSMO, SparseArrays, LinearAlgebra

using NPZ

Matrix10 = npzread("C:/Users/skqkr/Desktop/Semesterarbeit/Chiwan\_Q1.npz")

q = Matrix10["p"];

P = sparse(Matrix10["Q"]);

A = sparse(Matrix10["G"]);

h = Matrix10["h"];

# First, we decide to solve the problem with two one-sided constraints using `COSMO.Nonnegatives` as the convex set:

Aa = A

ba = h

constraint1 = COSMO.Constraint(Aa, ba, COSMO.Nonnegatives);

# Next, we define the settings object, the model and then assemble everything:

settings = COSMO.Settings(verbose=true);

model = COSMO.Model();

assemble!(model, P, q, constraint1, settings = settings);

res = COSMO.optimize!(model);

# Alternatively, we can also use two-sided constraints with `COSMO.Box`:

constraint1 = COSMO.Constraint(A, zeros(3), COSMO.Box(h, h));

model = COSMO.Model();

assemble!(model, P, q, constraint1, settings = settings);

res\_box = COSMO.optimize!(model);

end