```
set(0,'DefaultAxesLinewidth',2,'DefaultLineLineWidth',2);
set(0,'defaultAxesFontSize',14);
set(0,'defaultAxesFontName','arial');
set(0,'defaultTextFontName','arial');

close all
clear

A = [0 1 0;0 0 1;-0.5 -0.4 -0.3];

B = [0;0;1];
C = [1 1 0];

setlmis([])

[P,n,sP] = lmivar(1,[3 1]);

S1 = newlmi;
lmiterm([S1 1 1 P],A',A)
lmiterm([S1 1 1 P],-1,1)
lmiterm([S1 1 1 0],eye(3,3))
lmiterm([-S1 2 2 P],1,1)
LMIs = getlmis;
c = [1 0 0 0 0 0];

%[tmin,xopt] = feasp(LMIs);

[copt,xopt] = mincx(LMIs,c);

P1 = dec2mat(LMIs,xopt,P)

%A'*P1*A-P1+eye(3,3)
%eig(ans)
```

```
 Solver for linear objective minimization under LMI constraints

 Iterations   :    Best objective value so far

     1
     2                    3.232781
     3                    2.671052
***                 new lower bound:     1.494135
     4                    2.261533
***                 new lower bound:     1.772354
     5                    2.165793
***                 new lower bound:     1.944421
     6                    2.142584
***                 new lower bound:     2.104946
     7                    2.136836
***                 new lower bound:     2.116536
```

```
 Result:  feasible solution of required accuracy
          best objective value:     2.136836
          guaranteed relative accuracy:  9.50e-03
          f-radius saturation:  0.000% of R =  1.00e+09


P1 =

    2.1368    0.7957    0.2274
    0.7957    3.6827    0.9093
    0.2274    0.9093    4.5468
```

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