## k=3，之前跟踪的结果，五项，可行

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.030714

2 1.368916e-03

3 1.368916e-03

4 2.276493e-04

5 -7.996535e-05

Result: best value of t: -7.996535e-05

f-radius saturation: 0.000% of R = 1.00e+09

PP =

列 1 至 7

0.0038 0 -0.0002 0 -0.0000 0 -0.0000

0 0.0038 0 -0.0002 0 -0.0000 0

-0.0002 0 0.0027 0 -0.0003 0 0.0000

0 -0.0002 0 0.0027 0 -0.0003 0

-0.0000 0 -0.0003 0 0.0021 0 -0.0002

0 -0.0000 0 -0.0003 0 0.0021 0

-0.0000 0 0.0000 0 -0.0002 0 0.0038

0 -0.0000 0 0.0000 0 -0.0002 0

-0.0000 0 -0.0002 0 -0.0002 0 -0.0000

0 -0.0000 0 -0.0002 0 -0.0002 0

-0.0002 0 -0.0003 0 -0.0001 0 -0.0000

0 -0.0002 0 -0.0003 0 -0.0001 0

列 8 至 12

0 -0.0000 0 -0.0002 0

-0.0000 0 -0.0000 0 -0.0002

0 -0.0002 0 -0.0003 0

0.0000 0 -0.0002 0 -0.0003

0 -0.0002 0 -0.0001 0

-0.0002 0 -0.0002 0 -0.0001

0 -0.0000 0 -0.0000 0

0.0038 0 -0.0000 0 -0.0000

0 0.0027 0 -0.0000 0

-0.0000 0 0.0027 0 -0.0000

0 -0.0000 0 0.0021 0

-0.0000 0 -0.0000 0 0.0021

QQ1 =

列 1 至 7

0.0117 0 -0.0006 0 0.0001 0 0.0000

0 0.0117 0 -0.0006 0 0.0001 0

-0.0006 0 0.0109 0 -0.0005 0 0.0001

0 -0.0006 0 0.0109 0 -0.0005 0

0.0001 0 -0.0005 0 0.0111 0 -0.0006

0 0.0001 0 -0.0005 0 0.0111 0

0.0000 0 0.0001 0 -0.0006 0 0.0116

0 0.0000 0 0.0001 0 -0.0006 0

0.0000 0 -0.0007 0 -0.0002 0 0.0000

0 0.0000 0 -0.0007 0 -0.0002 0

-0.0005 0 -0.0002 0 -0.0005 0 -0.0000

0 -0.0005 0 -0.0002 0 -0.0005 0

列 8 至 12

0 0.0000 0 -0.0005 0

0.0000 0 0.0000 0 -0.0005

0 -0.0007 0 -0.0002 0

0.0001 0 -0.0007 0 -0.0002

0 -0.0002 0 -0.0005 0

-0.0006 0 -0.0002 0 -0.0005

0 0.0000 0 -0.0000 0

0.0116 0 0.0000 0 -0.0000

0 0.0106 0 -0.0000 0

0.0000 0 0.0106 0 -0.0000

0 -0.0000 0 0.0101 0

-0.0000 0 -0.0000 0 0.0101

QQ2 =

列 1 至 7

0.0107 0 -0.0010 0 0.0003 0 -0.0000

0 0.0107 0 -0.0010 0 0.0003 0

-0.0010 0 0.0094 0 -0.0009 0 0.0002

0 -0.0010 0 0.0094 0 -0.0009 0

0.0003 0 -0.0009 0 0.0098 0 -0.0010

0 0.0003 0 -0.0009 0 0.0098 0

-0.0000 0 0.0002 0 -0.0010 0 0.0104

0 -0.0000 0 0.0002 0 -0.0010 0

0.0001 0 -0.0010 0 -0.0002 0 0.0000

0 0.0001 0 -0.0010 0 -0.0002 0

-0.0007 0 -0.0002 0 -0.0008 0 0.0000

0 -0.0007 0 -0.0002 0 -0.0008 0

列 8 至 12

0 0.0001 0 -0.0007 0

-0.0000 0 0.0001 0 -0.0007

0 -0.0010 0 -0.0002 0

0.0002 0 -0.0010 0 -0.0002

0 -0.0002 0 -0.0008 0

-0.0010 0 -0.0002 0 -0.0008

0 0.0000 0 0.0000 0

0.0104 0 0.0000 0 0.0000

0 0.0088 0 -0.0001 0

0.0000 0 0.0088 0 -0.0001

0 -0.0001 0 0.0082 0

0.0000 0 -0.0001 0 0.0082

RR1 =

列 1 至 7

0.0645 0 -0.0020 0 0.0003 0 -0.0001

0 0.0645 0 -0.0020 0 0.0003 0

-0.0020 0 0.0626 0 -0.0022 0 0.0004

0 -0.0020 0 0.0626 0 -0.0022 0

0.0003 0 -0.0022 0 0.0639 0 -0.0023

0 0.0003 0 -0.0022 0 0.0639 0

-0.0001 0 0.0004 0 -0.0023 0 0.0642

0 -0.0001 0 0.0004 0 -0.0023 0

-0.0000 0 -0.0017 0 -0.0004 0 0.0000

0 -0.0000 0 -0.0017 0 -0.0004 0

-0.0018 0 -0.0005 0 -0.0011 0 -0.0000

0 -0.0018 0 -0.0005 0 -0.0011 0

列 8 至 12

0 -0.0000 0 -0.0018 0

-0.0001 0 -0.0000 0 -0.0018

0 -0.0017 0 -0.0005 0

0.0004 0 -0.0017 0 -0.0005

0 -0.0004 0 -0.0011 0

-0.0023 0 -0.0004 0 -0.0011

0 0.0000 0 -0.0000 0

0.0642 0 0.0000 0 -0.0000

0 0.0619 0 0.0000 0

0.0000 0 0.0619 0 0.0000

0 0.0000 0 0.0608 0

-0.0000 0 0.0000 0 0.0608

RR2 =

列 1 至 7

0.1505 0 -0.0016 0 0.0000 0 -0.0001

0 0.1505 0 -0.0016 0 0.0000 0

-0.0016 0 0.1473 0 -0.0014 0 0.0000

0 -0.0016 0 0.1473 0 -0.0014 0

0.0000 0 -0.0014 0 0.1441 0 -0.0013

0 0.0000 0 -0.0014 0 0.1441 0

-0.0001 0 0.0000 0 -0.0013 0 0.1491

0 -0.0001 0 0.0000 0 -0.0013 0

0.0000 0 -0.0014 0 -0.0005 0 -0.0000

0 0.0000 0 -0.0014 0 -0.0005 0

-0.0012 0 -0.0005 0 -0.0004 0 0.0000

0 -0.0012 0 -0.0005 0 -0.0004 0

列 8 至 12

0 0.0000 0 -0.0012 0

-0.0001 0 0.0000 0 -0.0012

0 -0.0014 0 -0.0005 0

0.0000 0 -0.0014 0 -0.0005

0 -0.0005 0 -0.0004 0

-0.0013 0 -0.0005 0 -0.0004

0 -0.0000 0 0.0000 0

0.1491 0 -0.0000 0 0.0000

0 0.1446 0 0.0000 0

-0.0000 0 0.1446 0 0.0000

0 0.0000 0 0.1427 0

0.0000 0 0.0000 0 0.1427

SS =

列 1 至 7

-0.0900 0 -0.0014 0 0.0003 0 -0.0001

0 -0.0900 0 -0.0014 0 0.0003 0

0.0030 0 -0.0882 0 -0.0016 0 0.0002

0 0.0030 0 -0.0882 0 -0.0016 0

0.0001 0 0.0019 0 -0.0858 0 0.0019

0 0.0001 0 0.0019 0 -0.0858 0

-0.0001 0 0.0003 0 -0.0015 0 -0.0888

0 -0.0001 0 0.0003 0 -0.0015 0

-0.0003 0 0.0030 0 -0.0001 0 -0.0001

0 -0.0003 0 0.0030 0 -0.0001 0

0.0019 0 -0.0004 0 0.0027 0 -0.0002

0 0.0019 0 -0.0004 0 0.0027 0

列 8 至 12

0 0.0001 0 -0.0012 0

-0.0001 0 0.0001 0 -0.0012

0 -0.0013 0 -0.0001 0

0.0002 0 -0.0013 0 -0.0001

0 -0.0002 0 -0.0015 0

0.0019 0 -0.0002 0 -0.0015

0 0.0001 0 0.0001 0

-0.0888 0 0.0001 0 0.0001

0 -0.0858 0 0.0000 0

-0.0001 0 -0.0858 0 0.0000

0 0.0000 0 -0.0851 0

-0.0002 0 0.0000 0 -0.0851

ans =

0.0018

0.0018

0.0021

0.0021

0.0027

0.0027

0.0030

0.0030

0.0038

0.0038

0.0039

0.0039

ans =

0.0095

0.0095

0.0102

0.0102

0.0109

0.0109

0.0112

0.0112

0.0119

0.0119

0.0124

0.0124

ans =

0.0072

0.0072

0.0082

0.0082

0.0092

0.0092

0.0097

0.0097

0.0108

0.0108

0.0120

0.0120

ans =

0.0584

0.0584

0.0608

0.0608

0.0621

0.0621

0.0634

0.0634

0.0653

0.0653

0.0679

0.0679

ans =

0.1420

0.1420

0.1432

0.1432

0.1448

0.1448

0.1476

0.1476

0.1495

0.1495

0.1514

0.1514

ans =

0.0566

0.0566

0.0572

0.0572

0.0590

0.0590

0.0596

0.0596

0.0606

0.0606

0.0615

0.0615

0.2270

0.2270

0.2290

0.2290

0.2305

0.2305

0.2357

0.2357

0.2382

0.2382

0.2418

0.2418

历时 38.220706 秒。

>>

## k=5，三项，P写错了，不可行

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.073545

2 5.467516e-03

3 5.467516e-03

4 3.881934e-04

5 3.022872e-04

6 3.022872e-04

7 2.491330e-05

8 2.491330e-05

9 2.237467e-06

10 2.237467e-06

11 1.956268e-07

12 1.956268e-07

13 1.840706e-08

14 1.840706e-08

15 1.532958e-09

16 1.532958e-09

17 1.346189e-10

18 1.346189e-10

19 3.090247e-11

20 3.090247e-11

21 5.250516e-12

22 5.250516e-12

23 1.228762e-12

24 1.165786e-12

25 1.165786e-12

26 2.486882e-13

27 2.348995e-13

28 2.103336e-13

29 1.798220e-13

30 1.408211e-13

\*\*\* new lower bound: -1.162707e-14

Result: best value of t: 1.408211e-13

f-radius saturation: 0.000% of R = 1.00e+09

Marginal infeasibility: these LMI constraints may be

feasible but are not strictly feasible

ans =

1.0e-09 \*

列 1 至 7

0.0065 0 -0.0003 0 -0.0008 0 0.0000

0 0.0065 0 -0.0003 0 -0.0008 0

-0.0003 0 0.0039 0 0.0003 0 -0.0006

0 -0.0003 0 0.0039 0 0.0003 0

-0.0008 0 0.0003 0 0.0026 0 0.0003

0 -0.0008 0 0.0003 0 0.0026 0

0.0000 0 -0.0006 0 0.0003 0 0.0081

0 0.0000 0 -0.0006 0 0.0003 0

-0.0001 0 -0.0004 0 0.0000 0 0.0000

0 -0.0001 0 -0.0004 0 0.0000 0

-0.0004 0 -0.0000 0 -0.0003 0 -0.0000

0 -0.0004 0 -0.0000 0 -0.0003 0

-0.4719 0 0.0005 0 -0.0002 0 -0.0000

0 -0.4719 0 0.0005 0 -0.0002 0

-0.0011 0 -0.4725 0 0.0004 0 -0.0002

0 -0.0011 0 -0.4725 0 0.0004 0

-0.0002 0 -0.0006 0 -0.4737 0 -0.0005

0 -0.0002 0 -0.0006 0 -0.4737 0

-0.0000 0 -0.0002 0 0.0004 0 -0.4715

0 -0.0000 0 -0.0002 0 0.0004 0

-0.0000 0 -0.0011 0 -0.0000 0 0.0000

0 -0.0000 0 -0.0011 0 -0.0000 0

-0.0008 0 -0.0000 0 -0.0009 0 -0.0000

0 -0.0008 0 -0.0000 0 -0.0009 0

列 8 至 14

0 -0.0001 0 -0.0004 0 -0.4719 0

0.0000 0 -0.0001 0 -0.0004 0 -0.4719

0 -0.0004 0 -0.0000 0 0.0005 0

-0.0006 0 -0.0004 0 -0.0000 0 0.0005

0 0.0000 0 -0.0003 0 -0.0002 0

0.0003 0 0.0000 0 -0.0003 0 -0.0002

0 0.0000 0 -0.0000 0 -0.0000 0

0.0081 0 0.0000 0 -0.0000 0 -0.0000

0 0.0057 0 0.0000 0 -0.0000 0

0.0000 0 0.0057 0 0.0000 0 -0.0000

0 0.0000 0 0.0043 0 0.0003 0

-0.0000 0 0.0000 0 0.0043 0 0.0003

0 -0.0000 0 0.0003 0 -0.0008 0

-0.0000 0 -0.0000 0 0.0003 0 -0.0008

0 0.0005 0 -0.0000 0 0.0002 0

-0.0002 0 0.0005 0 -0.0000 0 0.0002

0 -0.0000 0 0.0003 0 -0.0000 0

-0.0005 0 -0.0000 0 0.0003 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.4715 0 0.0000 0 -0.0000 0 0.0000

0 -0.4720 0 -0.0000 0 -0.0000 0

0.0000 0 -0.4720 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.4729 0 0.0001 0

-0.0000 0 -0.0000 0 -0.4729 0 0.0001

列 15 至 21

-0.0011 0 -0.0002 0 -0.0000 0 -0.0000

0 -0.0011 0 -0.0002 0 -0.0000 0

-0.4725 0 -0.0006 0 -0.0002 0 -0.0011

0 -0.4725 0 -0.0006 0 -0.0002 0

0.0004 0 -0.4737 0 0.0004 0 -0.0000

0 0.0004 0 -0.4737 0 0.0004 0

-0.0002 0 -0.0005 0 -0.4715 0 0.0000

0 -0.0002 0 -0.0005 0 -0.4715 0

0.0005 0 -0.0000 0 0.0000 0 -0.4720

0 0.0005 0 -0.0000 0 0.0000 0

-0.0000 0 0.0003 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0003 0 -0.0000 0

0.0002 0 -0.0000 0 0.0000 0 -0.0000

0 0.0002 0 -0.0000 0 0.0000 0

-0.0005 0 0.0001 0 -0.0000 0 0.0002

0 -0.0005 0 0.0001 0 -0.0000 0

0.0001 0 -0.0005 0 0.0001 0 -0.0000

0 0.0001 0 -0.0005 0 0.0001 0

-0.0000 0 0.0001 0 -0.0008 0 0.0000

0 -0.0000 0 0.0001 0 -0.0008 0

0.0002 0 -0.0000 0 0.0000 0 -0.0005

0 0.0002 0 -0.0000 0 0.0000 0

-0.0000 0 0.0001 0 -0.0000 0 0.0000

0 -0.0000 0 0.0001 0 -0.0000 0

列 22 至 24

0 -0.0008 0

-0.0000 0 -0.0008

0 -0.0000 0

-0.0011 0 -0.0000

0 -0.0009 0

-0.0000 0 -0.0009

0 -0.0000 0

0.0000 0 -0.0000

0 -0.0000 0

-0.4720 0 -0.0000

0 -0.4729 0

-0.0000 0 -0.4729

0 0.0001 0

-0.0000 0 0.0001

0 -0.0000 0

0.0002 0 -0.0000

0 0.0001 0

-0.0000 0 0.0001

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0005 0 0.0000

0 -0.0004 0

0.0000 0 -0.0004

ans =

1.0e-08 \*

列 1 至 7

0.2407 0 0.0004 0 0.0002 0 -0.0000

0 0.2407 0 0.0004 0 0.0002 0

0.0004 0 0.2441 0 0.0002 0 0.0001

0 0.0004 0 0.2441 0 0.0002 0

0.0002 0 0.0002 0 0.2484 0 0.0001

0 0.0002 0 0.0002 0 0.2484 0

-0.0000 0 0.0001 0 0.0001 0 0.2411

0 -0.0000 0 0.0001 0 0.0001 0

-0.0000 0 0.0005 0 -0.0000 0 0.0000

0 -0.0000 0 0.0005 0 -0.0000 0

0.0003 0 -0.0000 0 0.0004 0 -0.0000

0 0.0003 0 -0.0000 0 0.0004 0

-0.0005 0 0.0000 0 0.0000 0 -0.0000

0 -0.0005 0 0.0000 0 0.0000 0

0.0001 0 -0.0003 0 0.0000 0 0.0000

0 0.0001 0 -0.0003 0 0.0000 0

0.0000 0 0.0000 0 -0.0003 0 0.0000

0 0.0000 0 0.0000 0 -0.0003 0

0.0000 0 0.0000 0 0.0000 0 -0.0006

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 0.0001 0 -0.0000 0 -0.0000

0 0.0000 0 0.0001 0 -0.0000 0

0.0001 0 -0.0000 0 0.0001 0 0.0000

0 0.0001 0 -0.0000 0 0.0001 0

列 8 至 14

0 -0.0000 0 0.0003 0 -0.0005 0

-0.0000 0 -0.0000 0 0.0003 0 -0.0005

0 0.0005 0 -0.0000 0 0.0000 0

0.0001 0 0.0005 0 -0.0000 0 0.0000

0 -0.0000 0 0.0004 0 0.0000 0

0.0001 0 -0.0000 0 0.0004 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

0.2411 0 0.0000 0 -0.0000 0 -0.0000

0 0.2448 0 -0.0000 0 0.0000 0

0.0000 0 0.2448 0 -0.0000 0 0.0000

0 -0.0000 0 0.2472 0 0.0000 0

-0.0000 0 -0.0000 0 0.2472 0 0.0000

0 0.0000 0 0.0000 0 0.0013 0

-0.0000 0 0.0000 0 0.0000 0 0.0013

0 0.0000 0 -0.0000 0 -0.0001 0

0.0000 0 0.0000 0 -0.0000 0 -0.0001

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 0.0000 0

-0.0006 0 -0.0000 0 0.0000 0 0.0000

0 -0.0004 0 0.0000 0 0.0000 0

-0.0000 0 -0.0004 0 0.0000 0 0.0000

0 0.0000 0 -0.0003 0 -0.0000 0

0.0000 0 0.0000 0 -0.0003 0 -0.0000

列 15 至 21

0.0001 0 0.0000 0 0.0000 0 0.0000

0 0.0001 0 0.0000 0 0.0000 0

-0.0003 0 0.0000 0 0.0000 0 0.0001

0 -0.0003 0 0.0000 0 0.0000 0

0.0000 0 -0.0003 0 0.0000 0 -0.0000

0 0.0000 0 -0.0003 0 0.0000 0

0.0000 0 0.0000 0 -0.0006 0 -0.0000

0 0.0000 0 0.0000 0 -0.0006 0

0.0000 0 -0.0000 0 -0.0000 0 -0.0004

0 0.0000 0 -0.0000 0 -0.0000 0

-0.0000 0 0.0000 0 0.0000 0 0.0000

0 -0.0000 0 0.0000 0 0.0000 0

-0.0001 0 -0.0000 0 0.0000 0 0.0000

0 -0.0001 0 -0.0000 0 0.0000 0

0.0016 0 -0.0000 0 -0.0000 0 -0.0000

0 0.0016 0 -0.0000 0 -0.0000 0

-0.0000 0 0.0019 0 -0.0000 0 0.0000

0 -0.0000 0 0.0019 0 -0.0000 0

-0.0000 0 -0.0000 0 0.0012 0 0.0000

0 -0.0000 0 -0.0000 0 0.0012 0

-0.0000 0 0.0000 0 0.0000 0 0.0016

0 -0.0000 0 0.0000 0 0.0000 0

0.0000 0 -0.0000 0 0.0000 0 0.0000

0 0.0000 0 -0.0000 0 0.0000 0

列 22 至 24

0 0.0001 0

0.0000 0 0.0001

0 -0.0000 0

0.0001 0 -0.0000

0 0.0001 0

-0.0000 0 0.0001

0 0.0000 0

-0.0000 0 0.0000

0 0.0000 0

-0.0004 0 0.0000

0 -0.0003 0

0.0000 0 -0.0003

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0016 0 0.0000

0 0.0018 0

0.0000 0 0.0018

ans =

1.0e-05 \*

列 1 至 7

0.1037 0 0.0002 0 0.0001 0 -0.0000

0 0.1037 0 0.0002 0 0.0001 0

0.0002 0 0.1031 0 0.0001 0 0.0001

0 0.0002 0 0.1031 0 0.0001 0

0.0001 0 0.0001 0 0.1027 0 0.0001

0 0.0001 0 0.0001 0 0.1027 0

-0.0000 0 0.0001 0 0.0001 0 0.1038

0 -0.0000 0 0.0001 0 0.0001 0

-0.0000 0 0.0002 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0002 0 -0.0000 0

0.0002 0 -0.0000 0 0.0001 0 -0.0000

0 0.0002 0 -0.0000 0 0.0001 0

-0.0000 0 0.0000 0 0.0000 0 0.0000

0 -0.0000 0 0.0000 0 0.0000 0

-0.0000 0 -0.0000 0 0.0000 0 0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

0.0000 0 -0.0000 0 -0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

0.0000 0 0.0000 0 0.0000 0 -0.0000

0 0.0000 0 0.0000 0 0.0000 0

-0.0000 0 -0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

-0.0000 0 -0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

列 8 至 14

0 -0.0000 0 0.0002 0 -0.0000 0

-0.0000 0 -0.0000 0 0.0002 0 -0.0000

0 0.0002 0 -0.0000 0 0.0000 0

0.0001 0 0.0002 0 -0.0000 0 0.0000

0 -0.0000 0 0.0001 0 0.0000 0

0.0001 0 -0.0000 0 0.0001 0 0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

0.1038 0 -0.0000 0 -0.0000 0 0.0000

0 0.1031 0 -0.0000 0 0.0000 0

-0.0000 0 0.1031 0 -0.0000 0 0.0000

0 -0.0000 0 0.1029 0 0.0000 0

-0.0000 0 -0.0000 0 0.1029 0 0.0000

0 0.0000 0 0.0000 0 -0.0000 0

0.0000 0 0.0000 0 0.0000 0 -0.0000

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 0.0000 0 0.0000 0 0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

-0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 0.0000 0 0.0000 0

-0.0000 0 0.0000 0 0.0000 0 0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 -0.0000 0 -0.0000 0 0.0000

列 15 至 21

-0.0000 0 0.0000 0 0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 0.0000 0

-0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

0.0000 0 -0.0000 0 -0.0000 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

0.0000 0 0.0000 0 0.0000 0 -0.0000

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

列 22 至 24

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

ans =

1.0e-06 \*

列 1 至 7

-0.8189 0 -0.0016 0 -0.0006 0 0.0000

0 -0.8189 0 -0.0016 0 -0.0006 0

-0.0017 0 -0.8127 0 -0.0003 0 -0.0005

0 -0.0017 0 -0.8127 0 -0.0003 0

-0.0006 0 -0.0004 0 -0.8077 0 -0.0005

0 -0.0006 0 -0.0004 0 -0.8077 0

0.0000 0 -0.0005 0 -0.0004 0 -0.8194

0 0.0000 0 -0.0005 0 -0.0004 0

0.0000 0 -0.0015 0 0.0000 0 0.0000

0 0.0000 0 -0.0015 0 0.0000 0

-0.0012 0 0.0000 0 -0.0010 0 0.0000

0 -0.0012 0 0.0000 0 -0.0010 0

-0.0000 0 0.0000 0 0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 0.0000 0

-0.0000 0 0.0000 0 0.0000 0 0.0000

0 -0.0000 0 0.0000 0 0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 0.0000 0

0.0000 0 -0.0000 0 0.0000 0 0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

列 8 至 14

0 0.0000 0 -0.0011 0 0.0000 0

0.0000 0 0.0000 0 -0.0011 0 0.0000

0 -0.0014 0 0.0000 0 -0.0000 0

-0.0005 0 -0.0014 0 0.0000 0 -0.0000

0 0.0000 0 -0.0009 0 -0.0000 0

-0.0005 0 0.0000 0 -0.0009 0 -0.0000

0 0.0000 0 0.0000 0 0.0000 0

-0.8194 0 0.0000 0 0.0000 0 0.0000

0 -0.8129 0 0.0000 0 -0.0000 0

0.0000 0 -0.8129 0 0.0000 0 -0.0000

0 0.0000 0 -0.8098 0 -0.0000 0

0.0000 0 0.0000 0 -0.8098 0 -0.0000

0 -0.0000 0 0.0000 0 0.0000 0

-0.0000 0 -0.0000 0 0.0000 0 0.0000

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 0.0000 0 0.0000 0 0.0000

0 0.0000 0 0.0000 0 0.0000 0

-0.0000 0 0.0000 0 0.0000 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

0.0000 0 -0.0000 0 -0.0000 0 0.0000

列 15 至 21

0.0001 0 -0.0000 0 0.0000 0 -0.0000

0 0.0001 0 -0.0000 0 0.0000 0

0.0000 0 0.0000 0 -0.0000 0 0.0001

0 0.0000 0 0.0000 0 -0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

-0.0000 0 0.0000 0 0.0001 0 -0.0000

0 -0.0000 0 0.0000 0 0.0001 0

-0.0000 0 -0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

-0.0000 0 -0.0000 0 0.0000 0 0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 0.0000 0 0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

0.0000 0 -0.0000 0 -0.0000 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

列 22 至 24

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0001 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

ans =

1.0e-12 \*

-0.4728

-0.4728

-0.4712

-0.4712

-0.4708

-0.4708

-0.4692

-0.4692

-0.4689

-0.4689

-0.4678

-0.4678

0.4739

0.4739

0.4745

0.4745

0.4747

0.4747

0.4749

0.4749

0.4750

0.4750

0.4753

0.4753

ans =

1.0e-11 \*

0.0012

0.0012

0.0013

0.0013

0.0016

0.0016

0.0017

0.0017

0.0018

0.0018

0.0020

0.0020

0.2406

0.2406

0.2411

0.2411

0.2439

0.2439

0.2450

0.2450

0.2470

0.2470

0.2486

0.2486

ans =

1.0e-08 \*

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

0.1026

0.1026

0.1028

0.1028

0.1029

0.1029

0.1033

0.1033

0.1037

0.1037

0.1038

0.1038

ans =

1.0e-08 \*

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

0.0217

0.0217

0.0218

0.0218

0.0218

0.0218

0.0219

0.0219

0.0219

0.0219

0.0220

0.0220

0.1833

0.1833

0.1839

0.1839

0.1840

0.1840

0.1847

0.1847

0.1857

0.1857

0.1858

0.1858

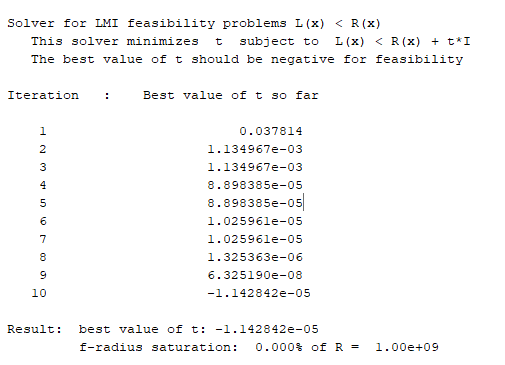
历时 1765.416147 秒。

>> 1765/60

ans =

29.4167

## k=3，复现原文fuxian，可行



Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.037814

2 1.134967e-03

3 1.134967e-03

4 8.898385e-05

5 8.898385e-05

6 1.025961e-05

7 1.025961e-05

8 1.325363e-06

9 6.325190e-08

10 -1.142842e-05

Result: best value of t: -1.142842e-05

f-radius saturation: 0.000% of R = 1.00e+09

PP =

列 1 至 7

0.0539 0 -0.0094 0 0.0016 0 0.0006

0 0.0539 0 -0.0094 0 0.0016 0

-0.0094 0 0.0421 0 -0.0088 0 0.0020

0 -0.0094 0 0.0421 0 -0.0088 0

0.0016 0 -0.0088 0 0.0449 0 -0.0085

0 0.0016 0 -0.0088 0 0.0449 0

0.0006 0 0.0020 0 -0.0085 0 0.0483

0 0.0006 0 0.0020 0 -0.0085 0

-0.0012 0 -0.0113 0 -0.0011 0 0.0003

0 -0.0012 0 -0.0113 0 -0.0011 0

-0.0079 0 -0.0018 0 -0.0087 0 -0.0008

0 -0.0079 0 -0.0018 0 -0.0087 0

0.0064 0 0.0008 0 -0.0002 0 -0.0001

0 0.0064 0 0.0008 0 -0.0002 0

-0.0022 0 0.0048 0 0.0006 0 -0.0001

0 -0.0022 0 0.0048 0 0.0006 0

-0.0003 0 -0.0012 0 0.0042 0 -0.0011

0 -0.0003 0 -0.0012 0 0.0042 0

-0.0001 0 -0.0002 0 0.0007 0 0.0066

0 -0.0001 0 -0.0002 0 0.0007 0

-0.0003 0 -0.0022 0 -0.0001 0 0.0000

0 -0.0003 0 -0.0022 0 -0.0001 0

-0.0016 0 -0.0003 0 -0.0017 0 -0.0002

0 -0.0016 0 -0.0003 0 -0.0017 0

列 8 至 14

0 -0.0012 0 -0.0079 0 0.0064 0

0.0006 0 -0.0012 0 -0.0079 0 0.0064

0 -0.0113 0 -0.0018 0 0.0008 0

0.0020 0 -0.0113 0 -0.0018 0 0.0008

0 -0.0011 0 -0.0087 0 -0.0002 0

-0.0085 0 -0.0011 0 -0.0087 0 -0.0002

0 0.0003 0 -0.0008 0 -0.0001 0

0.0483 0 0.0003 0 -0.0008 0 -0.0001

0 0.0338 0 -0.0002 0 0.0002 0

0.0003 0 0.0338 0 -0.0002 0 0.0002

0 -0.0002 0 0.0272 0 0.0008 0

-0.0008 0 -0.0002 0 0.0272 0 0.0008

0 0.0002 0 0.0008 0 0.0197 0

-0.0001 0 0.0002 0 0.0008 0 0.0197

0 0.0007 0 -0.0000 0 0.0001 0

-0.0001 0 0.0007 0 -0.0000 0 0.0001

0 -0.0001 0 0.0004 0 0.0002 0

-0.0011 0 -0.0001 0 0.0004 0 0.0002

0 -0.0000 0 0.0001 0 0.0002 0

0.0066 0 -0.0000 0 0.0001 0 0.0002

0 0.0050 0 -0.0001 0 -0.0002 0

0.0000 0 0.0050 0 -0.0001 0 -0.0002

0 -0.0000 0 0.0040 0 -0.0003 0

-0.0002 0 -0.0000 0 0.0040 0 -0.0003

列 15 至 21

-0.0022 0 -0.0003 0 -0.0001 0 -0.0003

0 -0.0022 0 -0.0003 0 -0.0001 0

0.0048 0 -0.0012 0 -0.0002 0 -0.0022

0 0.0048 0 -0.0012 0 -0.0002 0

0.0006 0 0.0042 0 0.0007 0 -0.0001

0 0.0006 0 0.0042 0 0.0007 0

-0.0001 0 -0.0011 0 0.0066 0 0.0000

0 -0.0001 0 -0.0011 0 0.0066 0

0.0007 0 -0.0001 0 -0.0000 0 0.0050

0 0.0007 0 -0.0001 0 -0.0000 0

-0.0000 0 0.0004 0 0.0001 0 -0.0001

0 -0.0000 0 0.0004 0 0.0001 0

0.0001 0 0.0002 0 0.0002 0 -0.0002

0 0.0001 0 0.0002 0 0.0002 0

0.0145 0 -0.0007 0 0.0004 0 -0.0007

0 0.0145 0 -0.0007 0 0.0004 0

-0.0007 0 0.0103 0 -0.0004 0 -0.0008

0 -0.0007 0 0.0103 0 -0.0004 0

0.0004 0 -0.0004 0 0.0182 0 -0.0000

0 0.0004 0 -0.0004 0 0.0182 0

-0.0007 0 -0.0008 0 -0.0000 0 0.0125

0 -0.0007 0 -0.0008 0 -0.0000 0

-0.0010 0 -0.0001 0 -0.0002 0 -0.0004

0 -0.0010 0 -0.0001 0 -0.0002 0

列 22 至 24

0 -0.0016 0

-0.0003 0 -0.0016

0 -0.0003 0

-0.0022 0 -0.0003

0 -0.0017 0

-0.0001 0 -0.0017

0 -0.0002 0

0.0000 0 -0.0002

0 -0.0000 0

0.0050 0 -0.0000

0 0.0040 0

-0.0001 0 0.0040

0 -0.0003 0

-0.0002 0 -0.0003

0 -0.0010 0

-0.0007 0 -0.0010

0 -0.0001 0

-0.0008 0 -0.0001

0 -0.0002 0

-0.0000 0 -0.0002

0 -0.0004 0

0.0125 0 -0.0004

0 0.0099 0

-0.0004 0 0.0099

QQ1 =

列 1 至 7

0.0246 0 -0.0027 0 0.0004 0 0.0001

0 0.0246 0 -0.0027 0 0.0004 0

-0.0027 0 0.0215 0 -0.0024 0 0.0005

0 -0.0027 0 0.0215 0 -0.0024 0

0.0004 0 -0.0024 0 0.0224 0 -0.0024

0 0.0004 0 -0.0024 0 0.0224 0

0.0001 0 0.0005 0 -0.0024 0 0.0232

0 0.0001 0 0.0005 0 -0.0024 0

-0.0003 0 -0.0032 0 -0.0003 0 0.0001

0 -0.0003 0 -0.0032 0 -0.0003 0

-0.0022 0 -0.0004 0 -0.0025 0 -0.0002

0 -0.0022 0 -0.0004 0 -0.0025 0

-0.0089 0 0.0020 0 0.0001 0 -0.0001

0 -0.0089 0 0.0020 0 0.0001 0

0.0008 0 -0.0075 0 0.0015 0 -0.0001

0 0.0008 0 -0.0075 0 0.0015 0

-0.0000 0 0.0007 0 -0.0083 0 0.0007

0 -0.0000 0 0.0007 0 -0.0083 0

-0.0000 0 -0.0001 0 0.0015 0 -0.0087

0 -0.0000 0 -0.0001 0 0.0015 0

0.0000 0 0.0012 0 0.0002 0 -0.0001

0 0.0000 0 0.0012 0 0.0002 0

0.0006 0 0.0003 0 0.0010 0 0.0001

0 0.0006 0 0.0003 0 0.0010 0

列 8 至 14

0 -0.0003 0 -0.0022 0 -0.0089 0

0.0001 0 -0.0003 0 -0.0022 0 -0.0089

0 -0.0032 0 -0.0004 0 0.0020 0

0.0005 0 -0.0032 0 -0.0004 0 0.0020

0 -0.0003 0 -0.0025 0 0.0001 0

-0.0024 0 -0.0003 0 -0.0025 0 0.0001

0 0.0001 0 -0.0002 0 -0.0001 0

0.0232 0 0.0001 0 -0.0002 0 -0.0001

0 0.0192 0 -0.0000 0 0.0002 0

0.0001 0 0.0192 0 -0.0000 0 0.0002

0 -0.0000 0 0.0174 0 0.0016 0

-0.0002 0 -0.0000 0 0.0174 0 0.0016

0 0.0002 0 0.0016 0 0.0433 0

-0.0001 0 0.0002 0 0.0016 0 0.0433

0 0.0023 0 0.0004 0 -0.0043 0

-0.0001 0 0.0023 0 0.0004 0 -0.0043

0 0.0003 0 0.0019 0 0.0002 0

0.0007 0 0.0003 0 0.0019 0 0.0002

0 -0.0001 0 0.0002 0 0.0001 0

-0.0087 0 -0.0001 0 0.0002 0 0.0001

0 -0.0068 0 0.0000 0 -0.0000 0

-0.0001 0 -0.0068 0 0.0000 0 -0.0000

0 0.0000 0 -0.0058 0 -0.0033 0

0.0001 0 0.0000 0 -0.0058 0 -0.0033

列 15 至 21

0.0008 0 -0.0000 0 -0.0000 0 0.0000

0 0.0008 0 -0.0000 0 -0.0000 0

-0.0075 0 0.0007 0 -0.0001 0 0.0012

0 -0.0075 0 0.0007 0 -0.0001 0

0.0015 0 -0.0083 0 0.0015 0 0.0002

0 0.0015 0 -0.0083 0 0.0015 0

-0.0001 0 0.0007 0 -0.0087 0 -0.0001

0 -0.0001 0 0.0007 0 -0.0087 0

0.0023 0 0.0003 0 -0.0001 0 -0.0068

0 0.0023 0 0.0003 0 -0.0001 0

0.0004 0 0.0019 0 0.0002 0 0.0000

0 0.0004 0 0.0019 0 0.0002 0

-0.0043 0 0.0002 0 0.0001 0 -0.0000

0 -0.0043 0 0.0002 0 0.0001 0

0.0383 0 -0.0040 0 0.0004 0 -0.0057

0 0.0383 0 -0.0040 0 0.0004 0

-0.0040 0 0.0408 0 -0.0036 0 -0.0013

0 -0.0040 0 0.0408 0 -0.0036 0

0.0004 0 -0.0036 0 0.0424 0 0.0003

0 0.0004 0 -0.0036 0 0.0424 0

-0.0057 0 -0.0013 0 0.0003 0 0.0356

0 -0.0057 0 -0.0013 0 0.0003 0

-0.0015 0 -0.0051 0 -0.0002 0 -0.0009

0 -0.0015 0 -0.0051 0 -0.0002 0

列 22 至 24

0 0.0006 0

0.0000 0 0.0006

0 0.0003 0

0.0012 0 0.0003

0 0.0010 0

0.0002 0 0.0010

0 0.0001 0

-0.0001 0 0.0001

0 0.0000 0

-0.0068 0 0.0000

0 -0.0058 0

0.0000 0 -0.0058

0 -0.0033 0

-0.0000 0 -0.0033

0 -0.0015 0

-0.0057 0 -0.0015

0 -0.0051 0

-0.0013 0 -0.0051

0 -0.0002 0

0.0003 0 -0.0002

0 -0.0009 0

0.0356 0 -0.0009

0 0.0320 0

-0.0009 0 0.0320

QQ2 =

列 1 至 7

0.0164 0 -0.0020 0 0.0004 0 0.0001

0 0.0164 0 -0.0020 0 0.0004 0

-0.0020 0 0.0141 0 -0.0018 0 0.0005

0 -0.0020 0 0.0141 0 -0.0018 0

0.0004 0 -0.0018 0 0.0147 0 -0.0018

0 0.0004 0 -0.0018 0 0.0147 0

0.0001 0 0.0005 0 -0.0018 0 0.0152

0 0.0001 0 0.0005 0 -0.0018 0

-0.0002 0 -0.0022 0 -0.0001 0 0.0001

0 -0.0002 0 -0.0022 0 -0.0001 0

-0.0015 0 -0.0002 0 -0.0017 0 -0.0001

0 -0.0015 0 -0.0002 0 -0.0017 0

-0.0064 0 0.0013 0 0.0000 0 -0.0000

0 -0.0064 0 0.0013 0 0.0000 0

0.0008 0 -0.0055 0 0.0009 0 -0.0001

0 0.0008 0 -0.0055 0 0.0009 0

-0.0000 0 0.0007 0 -0.0060 0 0.0007

0 -0.0000 0 0.0007 0 -0.0060 0

-0.0000 0 -0.0001 0 0.0010 0 -0.0062

0 -0.0000 0 -0.0001 0 0.0010 0

0.0000 0 0.0009 0 0.0001 0 -0.0001

0 0.0000 0 0.0009 0 0.0001 0

0.0005 0 0.0001 0 0.0008 0 0.0001

0 0.0005 0 0.0001 0 0.0008 0

列 8 至 14

0 -0.0002 0 -0.0015 0 -0.0064 0

0.0001 0 -0.0002 0 -0.0015 0 -0.0064

0 -0.0022 0 -0.0002 0 0.0013 0

0.0005 0 -0.0022 0 -0.0002 0 0.0013

0 -0.0001 0 -0.0017 0 0.0000 0

-0.0018 0 -0.0001 0 -0.0017 0 0.0000

0 0.0001 0 -0.0001 0 -0.0000 0

0.0152 0 0.0001 0 -0.0001 0 -0.0000

0 0.0124 0 0.0000 0 0.0001 0

0.0001 0 0.0124 0 0.0000 0 0.0001

0 0.0000 0 0.0111 0 0.0010 0

-0.0001 0 0.0000 0 0.0111 0 0.0010

0 0.0001 0 0.0010 0 0.0371 0

-0.0000 0 0.0001 0 0.0010 0 0.0371

0 0.0014 0 0.0002 0 -0.0064 0

-0.0001 0 0.0014 0 0.0002 0 -0.0064

0 0.0001 0 0.0011 0 0.0006 0

0.0007 0 0.0001 0 0.0011 0 0.0006

0 -0.0001 0 0.0001 0 -0.0002 0

-0.0062 0 -0.0001 0 0.0001 0 -0.0002

0 -0.0050 0 -0.0000 0 0.0004 0

-0.0001 0 -0.0050 0 -0.0000 0 0.0004

0 0.0000 0 -0.0044 0 -0.0043 0

0.0001 0 0.0000 0 -0.0044 0 -0.0043

列 15 至 21

0.0008 0 -0.0000 0 -0.0000 0 0.0000

0 0.0008 0 -0.0000 0 -0.0000 0

-0.0055 0 0.0007 0 -0.0001 0 0.0009

0 -0.0055 0 0.0007 0 -0.0001 0

0.0009 0 -0.0060 0 0.0010 0 0.0001

0 0.0009 0 -0.0060 0 0.0010 0

-0.0001 0 0.0007 0 -0.0062 0 -0.0001

0 -0.0001 0 0.0007 0 -0.0062 0

0.0014 0 0.0001 0 -0.0001 0 -0.0050

0 0.0014 0 0.0001 0 -0.0001 0

0.0002 0 0.0011 0 0.0001 0 -0.0000

0 0.0002 0 0.0011 0 0.0001 0

-0.0064 0 0.0006 0 -0.0002 0 0.0004

0 -0.0064 0 0.0006 0 -0.0002 0

0.0317 0 -0.0052 0 0.0007 0 -0.0065

0 0.0317 0 -0.0052 0 0.0007 0

-0.0052 0 0.0353 0 -0.0053 0 -0.0007

0 -0.0052 0 0.0353 0 -0.0053 0

0.0007 0 -0.0053 0 0.0362 0 0.0004

0 0.0007 0 -0.0053 0 0.0362 0

-0.0065 0 -0.0007 0 0.0004 0 0.0288

0 -0.0065 0 -0.0007 0 0.0004 0

-0.0006 0 -0.0059 0 0.0000 0 -0.0007

0 -0.0006 0 -0.0059 0 0.0000 0

列 22 至 24

0 0.0005 0

0.0000 0 0.0005

0 0.0001 0

0.0009 0 0.0001

0 0.0008 0

0.0001 0 0.0008

0 0.0001 0

-0.0001 0 0.0001

0 0.0000 0

-0.0050 0 0.0000

0 -0.0044 0

-0.0000 0 -0.0044

0 -0.0043 0

0.0004 0 -0.0043

0 -0.0006 0

-0.0065 0 -0.0006

0 -0.0059 0

-0.0007 0 -0.0059

0 0.0000 0

0.0004 0 0.0000

0 -0.0007 0

0.0288 0 -0.0007

0 0.0252 0

-0.0007 0 0.0252

RR1 =

列 1 至 7

0.2246 0 -0.0020 0 0.0016 0 0.0002

0 0.2246 0 -0.0020 0 0.0016 0

-0.0020 0 0.2234 0 -0.0017 0 0.0012

0 -0.0020 0 0.2234 0 -0.0017 0

0.0016 0 -0.0017 0 0.2243 0 -0.0027

0 0.0016 0 -0.0017 0 0.2243 0

0.0002 0 0.0012 0 -0.0027 0 0.2224

0 0.0002 0 0.0012 0 -0.0027 0

0.0006 0 -0.0013 0 0.0006 0 0.0002

0 0.0006 0 -0.0013 0 0.0006 0

-0.0010 0 0.0013 0 -0.0005 0 0.0003

0 -0.0010 0 0.0013 0 -0.0005 0

0.0809 0 -0.0072 0 0.0014 0 0.0004

0 0.0809 0 -0.0072 0 0.0014 0

-0.0135 0 0.0687 0 -0.0077 0 0.0025

0 -0.0135 0 0.0687 0 -0.0077 0

0.0014 0 -0.0134 0 0.0734 0 -0.0125

0 0.0014 0 -0.0134 0 0.0734 0

0.0005 0 0.0023 0 -0.0072 0 0.0756

0 0.0005 0 0.0023 0 -0.0072 0

-0.0013 0 -0.0162 0 -0.0022 0 0.0007

0 -0.0013 0 -0.0162 0 -0.0022 0

-0.0114 0 -0.0030 0 -0.0132 0 -0.0012

0 -0.0114 0 -0.0030 0 -0.0132 0

列 8 至 14

0 0.0006 0 -0.0010 0 0.0809 0

0.0002 0 0.0006 0 -0.0010 0 0.0809

0 -0.0013 0 0.0013 0 -0.0072 0

0.0012 0 -0.0013 0 0.0013 0 -0.0072

0 0.0006 0 -0.0005 0 0.0014 0

-0.0027 0 0.0006 0 -0.0005 0 0.0014

0 0.0002 0 0.0003 0 0.0004 0

0.2224 0 0.0002 0 0.0003 0 0.0004

0 0.2204 0 0.0008 0 -0.0017 0

0.0002 0 0.2204 0 0.0008 0 -0.0017

0 0.0008 0 0.2209 0 -0.0069 0

0.0003 0 0.0008 0 0.2209 0 -0.0069

0 -0.0017 0 -0.0069 0 0.3171 0

0.0004 0 -0.0017 0 -0.0069 0 0.3171

0 -0.0097 0 -0.0032 0 -0.0124 0

0.0025 0 -0.0097 0 -0.0032 0 -0.0124

0 -0.0020 0 -0.0068 0 0.0022 0

-0.0125 0 -0.0020 0 -0.0068 0 0.0022

0 0.0002 0 -0.0012 0 0.0014 0

0.0756 0 0.0002 0 -0.0012 0 0.0014

0 0.0589 0 -0.0007 0 -0.0027 0

0.0007 0 0.0589 0 -0.0007 0 -0.0027

0 -0.0007 0 0.0513 0 -0.0128 0

-0.0012 0 -0.0007 0 0.0513 0 -0.0128

列 15 至 21

-0.0135 0 0.0014 0 0.0005 0 -0.0013

0 -0.0135 0 0.0014 0 0.0005 0

0.0687 0 -0.0134 0 0.0023 0 -0.0162

0 0.0687 0 -0.0134 0 0.0023 0

-0.0077 0 0.0734 0 -0.0072 0 -0.0022

0 -0.0077 0 0.0734 0 -0.0072 0

0.0025 0 -0.0125 0 0.0756 0 0.0007

0 0.0025 0 -0.0125 0 0.0756 0

-0.0097 0 -0.0020 0 0.0002 0 0.0589

0 -0.0097 0 -0.0020 0 0.0002 0

-0.0032 0 -0.0068 0 -0.0012 0 -0.0007

0 -0.0032 0 -0.0068 0 -0.0012 0

-0.0124 0 0.0022 0 0.0014 0 -0.0027

0 -0.0124 0 0.0022 0 0.0014 0

0.2996 0 -0.0154 0 0.0040 0 -0.0174

0 0.2996 0 -0.0154 0 0.0040 0

-0.0154 0 0.3043 0 -0.0139 0 -0.0032

0 -0.0154 0 0.3043 0 -0.0139 0

0.0040 0 -0.0139 0 0.3077 0 0.0004

0 0.0040 0 -0.0139 0 0.3077 0

-0.0174 0 -0.0032 0 0.0004 0 0.2834

0 -0.0174 0 -0.0032 0 0.0004 0

-0.0050 0 -0.0126 0 -0.0020 0 -0.0014

0 -0.0050 0 -0.0126 0 -0.0020 0

列 22 至 24

0 -0.0114 0

-0.0013 0 -0.0114

0 -0.0030 0

-0.0162 0 -0.0030

0 -0.0132 0

-0.0022 0 -0.0132

0 -0.0012 0

0.0007 0 -0.0012

0 -0.0007 0

0.0589 0 -0.0007

0 0.0513 0

-0.0007 0 0.0513

0 -0.0128 0

-0.0027 0 -0.0128

0 -0.0050 0

-0.0174 0 -0.0050

0 -0.0126 0

-0.0032 0 -0.0126

0 -0.0020 0

0.0004 0 -0.0020

0 -0.0014 0

0.2834 0 -0.0014

0 0.2720 0

-0.0014 0 0.2720

RR2 =

列 1 至 7

0.4846 0 -0.0028 0 0.0002 0 0.0000

0 0.4846 0 -0.0028 0 0.0002 0

-0.0028 0 0.4812 0 -0.0021 0 0.0003

0 -0.0028 0 0.4812 0 -0.0021 0

0.0002 0 -0.0021 0 0.4787 0 -0.0021

0 0.0002 0 -0.0021 0 0.4787 0

0.0000 0 0.0003 0 -0.0021 0 0.4810

0 0.0000 0 0.0003 0 -0.0021 0

-0.0002 0 -0.0030 0 -0.0004 0 0.0000

0 -0.0002 0 -0.0030 0 -0.0004 0

-0.0021 0 -0.0005 0 -0.0023 0 -0.0001

0 -0.0021 0 -0.0005 0 -0.0023 0

0.0583 0 -0.0068 0 0.0009 0 0.0001

0 0.0583 0 -0.0068 0 0.0009 0

-0.0109 0 0.0468 0 -0.0050 0 0.0010

0 -0.0109 0 0.0468 0 -0.0050 0

0.0003 0 -0.0087 0 0.0393 0 -0.0083

0 0.0003 0 -0.0087 0 0.0393 0

0.0001 0 0.0008 0 -0.0050 0 0.0477

0 0.0001 0 0.0008 0 -0.0050 0

-0.0007 0 -0.0119 0 -0.0015 0 0.0003

0 -0.0007 0 -0.0119 0 -0.0015 0

-0.0082 0 -0.0019 0 -0.0096 0 -0.0006

0 -0.0082 0 -0.0019 0 -0.0096 0

列 8 至 14

0 -0.0002 0 -0.0021 0 0.0583 0

0.0000 0 -0.0002 0 -0.0021 0 0.0583

0 -0.0030 0 -0.0005 0 -0.0068 0

0.0003 0 -0.0030 0 -0.0005 0 -0.0068

0 -0.0004 0 -0.0023 0 0.0009 0

-0.0021 0 -0.0004 0 -0.0023 0 0.0009

0 0.0000 0 -0.0001 0 0.0001 0

0.4810 0 0.0000 0 -0.0001 0 0.0001

0 0.4759 0 -0.0001 0 -0.0002 0

0.0000 0 0.4759 0 -0.0001 0 -0.0002

0 -0.0001 0 0.4743 0 -0.0052 0

-0.0001 0 -0.0001 0 0.4743 0 -0.0052

0 -0.0002 0 -0.0052 0 0.5937 0

0.0001 0 -0.0002 0 -0.0052 0 0.5937

0 -0.0074 0 -0.0013 0 -0.0205 0

0.0010 0 -0.0074 0 -0.0013 0 -0.0205

0 -0.0013 0 -0.0054 0 0.0008 0

-0.0083 0 -0.0013 0 -0.0054 0 0.0008

0 -0.0001 0 -0.0000 0 0.0002 0

0.0477 0 -0.0001 0 -0.0000 0 0.0002

0 0.0310 0 -0.0004 0 -0.0001 0

0.0003 0 0.0310 0 -0.0004 0 -0.0001

0 -0.0004 0 0.0252 0 -0.0147 0

-0.0006 0 -0.0004 0 0.0252 0 -0.0147

列 15 至 21

-0.0109 0 0.0003 0 0.0001 0 -0.0007

0 -0.0109 0 0.0003 0 0.0001 0

0.0468 0 -0.0087 0 0.0008 0 -0.0119

0 0.0468 0 -0.0087 0 0.0008 0

-0.0050 0 0.0393 0 -0.0050 0 -0.0015

0 -0.0050 0 0.0393 0 -0.0050 0

0.0010 0 -0.0083 0 0.0477 0 0.0003

0 0.0010 0 -0.0083 0 0.0477 0

-0.0074 0 -0.0013 0 -0.0001 0 0.0310

0 -0.0074 0 -0.0013 0 -0.0001 0

-0.0013 0 -0.0054 0 -0.0000 0 -0.0004

0 -0.0013 0 -0.0054 0 -0.0000 0

-0.0205 0 0.0008 0 0.0002 0 -0.0001

0 -0.0205 0 0.0008 0 0.0002 0

0.5627 0 -0.0148 0 0.0011 0 -0.0215

0 0.5627 0 -0.0148 0 0.0011 0

-0.0148 0 0.5318 0 -0.0140 0 -0.0045

0 -0.0148 0 0.5318 0 -0.0140 0

0.0011 0 -0.0140 0 0.5649 0 0.0001

0 0.0011 0 -0.0140 0 0.5649 0

-0.0215 0 -0.0045 0 0.0001 0 0.5212

0 -0.0215 0 -0.0045 0 0.0001 0

-0.0041 0 -0.0158 0 0.0000 0 -0.0012

0 -0.0041 0 -0.0158 0 0.0000 0

列 22 至 24

0 -0.0082 0

-0.0007 0 -0.0082

0 -0.0019 0

-0.0119 0 -0.0019

0 -0.0096 0

-0.0015 0 -0.0096

0 -0.0006 0

0.0003 0 -0.0006

0 -0.0004 0

0.0310 0 -0.0004

0 0.0252 0

-0.0004 0 0.0252

0 -0.0147 0

-0.0001 0 -0.0147

0 -0.0041 0

-0.0215 0 -0.0041

0 -0.0158 0

-0.0045 0 -0.0158

0 0.0000 0

0.0001 0 0.0000

0 -0.0012 0

0.5212 0 -0.0012

0 0.5053 0

-0.0012 0 0.5053

SS =

列 1 至 7

-0.2553 0 0.0021 0 0.0004 0 0.0001

0 -0.2553 0 0.0021 0 0.0004 0

0.0016 0 -0.2534 0 0.0010 0 0.0004

0 0.0016 0 -0.2534 0 0.0010 0

0.0005 0 0.0006 0 -0.2509 0 0.0006

0 0.0005 0 0.0006 0 -0.2509 0

0.0001 0 0.0004 0 0.0010 0 -0.2530

0 0.0001 0 0.0004 0 0.0010 0

0.0001 0 0.0014 0 -0.0002 0 0.0001

0 0.0001 0 0.0014 0 -0.0002 0

0.0012 0 -0.0001 0 0.0014 0 0.0000

0 0.0012 0 -0.0001 0 0.0014 0

-0.0197 0 0.0087 0 0.0006 0 0.0001

0 -0.0197 0 0.0087 0 0.0006 0

0.0030 0 -0.0145 0 0.0050 0 0.0007

0 0.0030 0 -0.0145 0 0.0050 0

0.0008 0 0.0004 0 -0.0069 0 0.0006

0 0.0008 0 0.0004 0 -0.0069 0

0.0001 0 0.0003 0 0.0052 0 -0.0117

0 0.0001 0 0.0003 0 0.0052 0

0.0006 0 0.0028 0 -0.0008 0 0.0004

0 0.0006 0 0.0028 0 -0.0008 0

0.0026 0 -0.0004 0 0.0025 0 0.0001

0 0.0026 0 -0.0004 0 0.0025 0

列 8 至 14

0 -0.0001 0 0.0014 0 -0.0010 0

0.0001 0 -0.0001 0 0.0014 0 -0.0010

0 0.0017 0 -0.0002 0 0.0029 0

0.0004 0 0.0017 0 -0.0002 0 0.0029

0 -0.0002 0 0.0017 0 0.0022 0

0.0006 0 -0.0002 0 0.0017 0 0.0022

0 0.0000 0 -0.0001 0 0.0003 0

-0.2530 0 0.0000 0 -0.0001 0 0.0003

0 -0.2506 0 0.0000 0 0.0002 0

0.0001 0 -0.2506 0 0.0000 0 0.0002

0 0.0000 0 -0.2497 0 0.0021 0

0.0000 0 0.0000 0 -0.2497 0 0.0021

0 -0.0000 0 0.0057 0 -0.3260 0

0.0001 0 -0.0000 0 0.0057 0 -0.3260

0 0.0075 0 -0.0006 0 0.0077 0

0.0007 0 0.0075 0 -0.0006 0 0.0077

0 -0.0006 0 0.0068 0 0.0045 0

0.0006 0 -0.0006 0 0.0068 0 0.0045

0 -0.0002 0 0.0001 0 0.0004 0

-0.0117 0 -0.0002 0 0.0001 0 0.0004

0 -0.0039 0 -0.0003 0 0.0031 0

0.0004 0 -0.0039 0 -0.0003 0 0.0031

0 -0.0003 0 -0.0019 0 0.0071 0

0.0001 0 -0.0003 0 -0.0019 0 0.0071

列 15 至 21

0.0020 0 0.0013 0 0.0003 0 -0.0008

0 0.0020 0 0.0013 0 0.0003 0

0.0002 0 -0.0011 0 0.0017 0 0.0001

0 0.0002 0 -0.0011 0 0.0017 0

-0.0001 0 0.0085 0 0.0000 0 -0.0013

0 -0.0001 0 0.0085 0 0.0000 0

0.0019 0 -0.0006 0 0.0042 0 0.0003

0 0.0019 0 -0.0006 0 0.0042 0

0.0019 0 -0.0013 0 0.0000 0 0.0063

0 0.0019 0 -0.0013 0 0.0000 0

-0.0010 0 0.0024 0 0.0001 0 -0.0004

0 -0.0010 0 0.0024 0 0.0001 0

0.0274 0 0.0024 0 0.0004 0 -0.0010

0 0.0274 0 0.0024 0 0.0004 0

-0.3102 0 0.0153 0 0.0029 0 0.0241

0 -0.3102 0 0.0153 0 0.0029 0

-0.0007 0 -0.2863 0 -0.0001 0 -0.0016

0 -0.0007 0 -0.2863 0 -0.0001 0

0.0022 0 0.0162 0 -0.3038 0 -0.0008

0 0.0022 0 0.0162 0 -0.3038 0

0.0071 0 -0.0026 0 0.0011 0 -0.2809

0 0.0071 0 -0.0026 0 0.0011 0

-0.0002 0 0.0063 0 0.0014 0 -0.0009

0 -0.0002 0 0.0063 0 0.0014 0

列 22 至 24

0 0.0011 0

-0.0008 0 0.0011

0 -0.0017 0

0.0001 0 -0.0017

0 0.0009 0

-0.0013 0 0.0009

0 -0.0007 0

0.0003 0 -0.0007

0 -0.0004 0

0.0063 0 -0.0004

0 0.0061 0

-0.0004 0 0.0061

0 0.0187 0

-0.0010 0 0.0187

0 -0.0023 0

0.0241 0 -0.0023

0 0.0219 0

-0.0016 0 0.0219

0 -0.0003 0

-0.0008 0 -0.0003

0 -0.0008 0

-0.2809 0 -0.0008

0 -0.2741 0

-0.0009 0 -0.2741

ans =

0.0083

0.0083

0.0096

0.0096

0.0116

0.0116

0.0135

0.0135

0.0161

0.0161

0.0168

0.0168

0.0214

0.0214

0.0285

0.0285

0.0412

0.0412

0.0471

0.0471

0.0554

0.0554

0.0658

0.0658

ans =

0.0134

0.0134

0.0154

0.0154

0.0180

0.0180

0.0193

0.0193

0.0211

0.0211

0.0235

0.0235

0.0274

0.0274

0.0348

0.0348

0.0421

0.0421

0.0439

0.0439

0.0487

0.0487

0.0532

0.0532

ans =

0.0084

0.0084

0.0099

0.0099

0.0120

0.0120

0.0130

0.0130

0.0146

0.0146

0.0168

0.0168

0.0194

0.0194

0.0261

0.0261

0.0333

0.0333

0.0350

0.0350

0.0415

0.0415

0.0483

0.0483

ans =

0.1730

0.1730

0.1762

0.1762

0.1790

0.1790

0.1807

0.1807

0.1877

0.1877

0.1963

0.1963

0.2826

0.2826

0.3070

0.3070

0.3338

0.3338

0.3480

0.3480

0.3667

0.3667

0.3891

0.3891

ans =

0.4566

0.4566

0.4584

0.4584

0.4589

0.4589

0.4597

0.4597

0.4607

0.4607

0.4617

0.4617

0.5028

0.5028

0.5270

0.5270

0.5538

0.5538

0.5839

0.5839

0.5959

0.5959

0.6360

0.6360

ans =

0.1908

0.1908

0.1942

0.1942

0.1960

0.1960

0.1981

0.1981

0.2021

0.2021

0.2045

0.2045

0.2485

0.2485

0.2618

0.2618

0.2757

0.2757

0.2839

0.2839

0.2967

0.2967

0.3061

0.3061

0.7152

0.7152

0.7156

0.7156

0.7161

0.7161

0.7164

0.7164

0.7168

0.7168

0.7169

0.7169

0.7585

0.7585

0.7948

0.7948

0.8385

0.8385

0.8889

0.8889

0.8997

0.8997

0.9748

0.9748

历时 632.434061 秒。

>>

## k=3，三项，P改过来了，但是tau写错了，不可行

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.073214

2 5.429001e-03

3 5.429001e-03

4 3.863539e-04

5 3.681873e-04

6 3.681873e-04

7 2.969787e-05

8 2.969787e-05

9 2.861256e-06

10 2.861256e-06

11 2.947899e-07

12 2.947899e-07

13 2.942244e-08

14 2.942244e-08

15 2.867935e-09

16 2.867935e-09

17 2.809260e-10

18 2.649494e-10

19 2.649494e-10

20 4.614638e-11

21 4.365983e-11

22 4.365983e-11

23 9.449649e-12

24 9.449649e-12

25 1.947585e-12

26 1.839032e-12

27 1.557042e-12

28 1.268265e-12

29 1.007392e-12

\*\*\* new lower bound: -6.217824e-14

Result: best value of t: 1.007392e-12

f-radius saturation: 0.000% of R = 1.00e+09

Marginal infeasibility: these LMI constraints may be

feasible but are not strictly feasible

ans =

1.0e-08 \*

列 1 至 7

0.5195 0 -0.0004 0 0.0003 0 0.0000

0 0.5195 0 -0.0004 0 0.0003 0

-0.0004 0 0.5222 0 -0.0005 0 0.0002

0 -0.0004 0 0.5222 0 -0.0005 0

0.0003 0 -0.0005 0 0.5268 0 -0.0005

0 0.0003 0 -0.0005 0 0.5268 0

0.0000 0 0.0002 0 -0.0005 0 0.5188

0 0.0000 0 0.0002 0 -0.0005 0

0.0000 0 -0.0003 0 0.0000 0 0.0000

0 0.0000 0 -0.0003 0 0.0000 0

-0.0003 0 0.0000 0 -0.0002 0 0.0000

0 -0.0003 0 0.0000 0 -0.0002 0

-0.3377 0 0.0014 0 -0.0002 0 -0.0000

0 -0.3377 0 0.0014 0 -0.0002 0

0.0001 0 -0.3382 0 0.0011 0 -0.0002

0 0.0001 0 -0.3382 0 0.0011 0

-0.0002 0 0.0003 0 -0.3399 0 0.0003

0 -0.0002 0 0.0003 0 -0.3399 0

-0.0000 0 -0.0002 0 0.0011 0 -0.3367

0 -0.0000 0 -0.0002 0 0.0011 0

-0.0000 0 0.0001 0 -0.0000 0 0.0000

0 -0.0000 0 0.0001 0 -0.0000 0

0.0001 0 -0.0000 0 0.0001 0 -0.0000

0 0.0001 0 -0.0000 0 0.0001 0

列 8 至 14

0 0.0000 0 -0.0003 0 -0.3377 0

0.0000 0 0.0000 0 -0.0003 0 -0.3377

0 -0.0003 0 0.0000 0 0.0014 0

0.0002 0 -0.0003 0 0.0000 0 0.0014

0 0.0000 0 -0.0002 0 -0.0002 0

-0.0005 0 0.0000 0 -0.0002 0 -0.0002

0 0.0000 0 0.0000 0 -0.0000 0

0.5188 0 0.0000 0 0.0000 0 -0.0000

0 0.5213 0 0.0000 0 0.0000 0

0.0000 0 0.5213 0 0.0000 0 0.0000

0 0.0000 0 0.5237 0 0.0011 0

0.0000 0 0.0000 0 0.5237 0 0.0011

0 0.0000 0 0.0011 0 0.1020 0

-0.0000 0 0.0000 0 0.0011 0 0.1020

0 0.0014 0 0.0000 0 -0.0008 0

-0.0002 0 0.0014 0 0.0000 0 -0.0008

0 -0.0000 0 0.0011 0 0.0001 0

0.0003 0 -0.0000 0 0.0011 0 0.0001

0 -0.0000 0 0.0000 0 -0.0000 0

-0.3367 0 -0.0000 0 0.0000 0 -0.0000

0 -0.3367 0 -0.0000 0 -0.0000 0

0.0000 0 -0.3367 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.3375 0 -0.0006 0

-0.0000 0 -0.0000 0 -0.3375 0 -0.0006

列 15 至 21

0.0001 0 -0.0002 0 -0.0000 0 -0.0000

0 0.0001 0 -0.0002 0 -0.0000 0

-0.3382 0 0.0003 0 -0.0002 0 0.0001

0 -0.3382 0 0.0003 0 -0.0002 0

0.0011 0 -0.3399 0 0.0011 0 -0.0000

0 0.0011 0 -0.3399 0 0.0011 0

-0.0002 0 0.0003 0 -0.3367 0 0.0000

0 -0.0002 0 0.0003 0 -0.3367 0

0.0014 0 -0.0000 0 -0.0000 0 -0.3367

0 0.0014 0 -0.0000 0 -0.0000 0

0.0000 0 0.0011 0 0.0000 0 -0.0000

0 0.0000 0 0.0011 0 0.0000 0

-0.0008 0 0.0001 0 -0.0000 0 -0.0000

0 -0.0008 0 0.0001 0 -0.0000 0

0.1023 0 -0.0006 0 0.0001 0 -0.0008

0 0.1023 0 -0.0006 0 0.0001 0

-0.0006 0 0.1034 0 -0.0006 0 0.0000

0 -0.0006 0 0.1034 0 -0.0006 0

0.0001 0 -0.0006 0 0.1011 0 -0.0000

0 0.0001 0 -0.0006 0 0.1011 0

-0.0008 0 0.0000 0 -0.0000 0 0.1011

0 -0.0008 0 0.0000 0 -0.0000 0

-0.0000 0 -0.0006 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0006 0 -0.0000 0

列 22 至 24

0 0.0001 0

-0.0000 0 0.0001

0 -0.0000 0

0.0001 0 -0.0000

0 0.0001 0

-0.0000 0 0.0001

0 -0.0000 0

0.0000 0 -0.0000

0 -0.0000 0

-0.3367 0 -0.0000

0 -0.3375 0

-0.0000 0 -0.3375

0 -0.0006 0

-0.0000 0 -0.0006

0 -0.0000 0

-0.0008 0 -0.0000

0 -0.0006 0

0.0000 0 -0.0006

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

0.1011 0 -0.0000

0 0.1016 0

-0.0000 0 0.1016

ans =

1.0e-07 \*

列 1 至 7

0.1887 0 -0.0000 0 0.0008 0 -0.0000

0 0.1887 0 -0.0000 0 0.0008 0

-0.0000 0 0.1913 0 -0.0006 0 0.0006

0 -0.0000 0 0.1913 0 -0.0006 0

0.0008 0 -0.0006 0 0.1938 0 -0.0006

0 0.0008 0 -0.0006 0 0.1938 0

-0.0000 0 0.0006 0 -0.0006 0 0.1875

0 -0.0000 0 0.0006 0 -0.0006 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0001 0 -0.0000

0 0.0000 0 -0.0000 0 0.0001 0

-0.0089 0 -0.0000 0 0.0000 0 -0.0000

0 -0.0089 0 -0.0000 0 0.0000 0

-0.0002 0 -0.0091 0 -0.0000 0 0.0000

0 -0.0002 0 -0.0091 0 -0.0000 0

0.0000 0 -0.0001 0 -0.0092 0 -0.0001

0 0.0000 0 -0.0001 0 -0.0092 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0090

0 -0.0000 0 0.0000 0 -0.0000 0

-0.0000 0 -0.0002 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0002 0 -0.0000 0

-0.0001 0 -0.0000 0 -0.0001 0 0.0000

0 -0.0001 0 -0.0000 0 -0.0001 0

列 8 至 14

0 -0.0000 0 0.0000 0 -0.0089 0

-0.0000 0 -0.0000 0 0.0000 0 -0.0089

0 0.0000 0 -0.0000 0 -0.0000 0

0.0006 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0001 0 0.0000 0

-0.0006 0 -0.0000 0 0.0001 0 0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

0.1875 0 -0.0000 0 -0.0000 0 -0.0000

0 0.1897 0 -0.0000 0 -0.0000 0

-0.0000 0 0.1897 0 -0.0000 0 -0.0000

0 -0.0000 0 0.1913 0 -0.0000 0

-0.0000 0 -0.0000 0 0.1913 0 -0.0000

0 -0.0000 0 -0.0000 0 0.0040 0

-0.0000 0 -0.0000 0 -0.0000 0 0.0040

0 -0.0000 0 -0.0000 0 -0.0001 0

0.0000 0 -0.0000 0 -0.0000 0 -0.0001

0 -0.0000 0 -0.0000 0 0.0000 0

-0.0001 0 -0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

-0.0090 0 -0.0000 0 -0.0000 0 0.0000

0 -0.0092 0 -0.0000 0 -0.0000 0

-0.0000 0 -0.0092 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0093 0 -0.0001 0

0.0000 0 -0.0000 0 -0.0093 0 -0.0001

列 15 至 21

-0.0002 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0002 0 0.0000 0 -0.0000 0

-0.0091 0 -0.0001 0 0.0000 0 -0.0002

0 -0.0091 0 -0.0001 0 0.0000 0

-0.0000 0 -0.0092 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0092 0 -0.0000 0

0.0000 0 -0.0001 0 -0.0090 0 -0.0000

0 0.0000 0 -0.0001 0 -0.0090 0

-0.0000 0 -0.0000 0 -0.0000 0 -0.0092

0 -0.0000 0 -0.0000 0 -0.0000 0

-0.0000 0 -0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

-0.0001 0 0.0000 0 0.0000 0 -0.0000

0 -0.0001 0 0.0000 0 0.0000 0

0.0043 0 -0.0001 0 0.0000 0 -0.0001

0 0.0043 0 -0.0001 0 0.0000 0

-0.0001 0 0.0045 0 -0.0001 0 -0.0000

0 -0.0001 0 0.0045 0 -0.0001 0

0.0000 0 -0.0001 0 0.0039 0 0.0000

0 0.0000 0 -0.0001 0 0.0039 0

-0.0001 0 -0.0000 0 0.0000 0 0.0042

0 -0.0001 0 -0.0000 0 0.0000 0

-0.0000 0 -0.0001 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0001 0 -0.0000 0

列 22 至 24

0 -0.0001 0

-0.0000 0 -0.0001

0 -0.0000 0

-0.0002 0 -0.0000

0 -0.0001 0

-0.0000 0 -0.0001

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.0092 0 -0.0000

0 -0.0093 0

-0.0000 0 -0.0093

0 -0.0001 0

-0.0000 0 -0.0001

0 -0.0000 0

-0.0001 0 -0.0000

0 -0.0001 0

-0.0000 0 -0.0001

0 -0.0000 0

0.0000 0 -0.0000

0 -0.0000 0

0.0042 0 -0.0000

0 0.0043 0

-0.0000 0 0.0043

ans =

1.0e-05 \*

列 1 至 7

0.5542 0 0.0020 0 0.0002 0 0.0000

0 0.5542 0 0.0020 0 0.0002 0

0.0020 0 0.5497 0 0.0010 0 0.0002

0 0.0020 0 0.5497 0 0.0010 0

0.0002 0 0.0010 0 0.5455 0 0.0010

0 0.0002 0 0.0010 0 0.5455 0

0.0000 0 0.0002 0 0.0010 0 0.5554

0 0.0000 0 0.0002 0 0.0010 0

0.0000 0 0.0019 0 0.0000 0 -0.0000

0 0.0000 0 0.0019 0 0.0000 0

0.0015 0 0.0000 0 0.0013 0 0.0000

0 0.0015 0 0.0000 0 0.0013 0

0.0002 0 0.0000 0 0.0000 0 0.0000

0 0.0002 0 0.0000 0 0.0000 0

0.0000 0 0.0002 0 0.0000 0 0.0000

0 0.0000 0 0.0002 0 0.0000 0

0.0000 0 0.0000 0 0.0002 0 0.0000

0 0.0000 0 0.0000 0 0.0002 0

0.0000 0 0.0000 0 0.0000 0 0.0002

0 0.0000 0 0.0000 0 0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

列 8 至 14

0 0.0000 0 0.0015 0 0.0002 0

0.0000 0 0.0000 0 0.0015 0 0.0002

0 0.0019 0 0.0000 0 0.0000 0

0.0002 0 0.0019 0 0.0000 0 0.0000

0 0.0000 0 0.0013 0 0.0000 0

0.0010 0 0.0000 0 0.0013 0 0.0000

0 -0.0000 0 0.0000 0 0.0000 0

0.5554 0 -0.0000 0 0.0000 0 0.0000

0 0.5511 0 0.0000 0 -0.0000 0

-0.0000 0 0.5511 0 0.0000 0 -0.0000

0 0.0000 0 0.5487 0 0.0000 0

0.0000 0 0.0000 0 0.5487 0 0.0000

0 -0.0000 0 0.0000 0 -0.0001 0

0.0000 0 -0.0000 0 0.0000 0 -0.0001

0 0.0000 0 -0.0000 0 0.0000 0

0.0000 0 0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 0.0000 0 0.0000 0

0.0000 0 -0.0000 0 0.0000 0 0.0000

0 0.0000 0 -0.0000 0 0.0000 0

0.0002 0 0.0000 0 -0.0000 0 0.0000

0 0.0002 0 -0.0000 0 0.0000 0

0.0000 0 0.0002 0 -0.0000 0 0.0000

0 -0.0000 0 0.0002 0 0.0000 0

-0.0000 0 -0.0000 0 0.0002 0 0.0000

列 15 至 21

0.0000 0 0.0000 0 0.0000 0 -0.0000

0 0.0000 0 0.0000 0 0.0000 0

0.0002 0 0.0000 0 0.0000 0 0.0000

0 0.0002 0 0.0000 0 0.0000 0

0.0000 0 0.0002 0 0.0000 0 -0.0000

0 0.0000 0 0.0002 0 0.0000 0

0.0000 0 0.0000 0 0.0002 0 0.0000

0 0.0000 0 0.0000 0 0.0002 0

0.0000 0 -0.0000 0 0.0000 0 0.0002

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 0.0000 0 0.0000 0 0.0000

0 0.0000 0 0.0000 0 0.0000 0

-0.0001 0 0.0000 0 0.0000 0 0.0000

0 -0.0001 0 0.0000 0 0.0000 0

0.0000 0 -0.0001 0 0.0000 0 -0.0000

0 0.0000 0 -0.0001 0 0.0000 0

0.0000 0 0.0000 0 -0.0001 0 0.0000

0 0.0000 0 0.0000 0 -0.0001 0

0.0000 0 -0.0000 0 0.0000 0 -0.0001

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 0.0000 0 0.0000

0 -0.0000 0 0.0000 0 0.0000 0

列 22 至 24

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 -0.0000 0

0.0002 0 -0.0000

0 0.0002 0

-0.0000 0 0.0002

0 0.0000 0

0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

-0.0001 0 0.0000

0 -0.0001 0

0.0000 0 -0.0001

ans =

1.0e-05 \*

列 1 至 7

-0.4543 0 -0.0019 0 -0.0003 0 -0.0000

0 -0.4543 0 -0.0019 0 -0.0003 0

-0.0019 0 -0.4502 0 -0.0009 0 -0.0002

0 -0.0019 0 -0.4502 0 -0.0009 0

-0.0003 0 -0.0009 0 -0.4459 0 -0.0009

0 -0.0003 0 -0.0009 0 -0.4459 0

-0.0000 0 -0.0002 0 -0.0009 0 -0.4553

0 -0.0000 0 -0.0002 0 -0.0009 0

-0.0000 0 -0.0018 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0018 0 -0.0000 0

-0.0014 0 -0.0000 0 -0.0013 0 -0.0000

0 -0.0014 0 -0.0000 0 -0.0013 0

0.0011 0 0.0000 0 0.0000 0 0.0000

0 0.0011 0 0.0000 0 0.0000 0

0.0000 0 0.0011 0 0.0000 0 0.0000

0 0.0000 0 0.0011 0 0.0000 0

0.0000 0 0.0000 0 0.0011 0 0.0000

0 0.0000 0 0.0000 0 0.0011 0

0.0000 0 0.0000 0 0.0000 0 0.0011

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 0.0000 0 0.0000 0 0.0000

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 0.0000 0 0.0000 0 0.0000

0 0.0000 0 0.0000 0 0.0000 0

列 8 至 14

0 -0.0000 0 -0.0014 0 -0.0015 0

-0.0000 0 -0.0000 0 -0.0014 0 -0.0015

0 -0.0018 0 -0.0000 0 -0.0000 0

-0.0002 0 -0.0018 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0013 0 -0.0000 0

-0.0009 0 -0.0000 0 -0.0013 0 -0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

-0.4553 0 -0.0000 0 -0.0000 0 -0.0000

0 -0.4514 0 -0.0000 0 -0.0000 0

-0.0000 0 -0.4514 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.4490 0 -0.0000 0

-0.0000 0 -0.0000 0 -0.4490 0 -0.0000

0 0.0000 0 0.0000 0 -0.0000 0

0.0000 0 0.0000 0 0.0000 0 -0.0000

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 0.0000 0 0.0000 0 0.0000

0 0.0000 0 0.0000 0 -0.0000 0

0.0000 0 0.0000 0 0.0000 0 -0.0000

0 0.0000 0 0.0000 0 -0.0000 0

0.0011 0 0.0000 0 0.0000 0 -0.0000

0 0.0011 0 0.0000 0 -0.0000 0

0.0000 0 0.0011 0 0.0000 0 -0.0000

0 0.0000 0 0.0011 0 0.0000 0

0.0000 0 0.0000 0 0.0011 0 0.0000

列 15 至 21

-0.0000 0 -0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

-0.0015 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0015 0 0.0000 0 -0.0000 0

-0.0000 0 -0.0015 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0015 0 -0.0000 0

-0.0000 0 0.0000 0 -0.0016 0 -0.0000

0 -0.0000 0 0.0000 0 -0.0016 0

-0.0000 0 -0.0000 0 -0.0000 0 -0.0015

0 -0.0000 0 -0.0000 0 -0.0000 0

-0.0000 0 -0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 -0.0000 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0000 0 -0.0000 0

0.0000 0 0.0000 0 -0.0000 0 -0.0000

0 0.0000 0 0.0000 0 -0.0000 0

0.0000 0 0.0000 0 0.0000 0 0.0000

0 0.0000 0 0.0000 0 0.0000 0

列 22 至 24

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 -0.0000 0

-0.0000 0 -0.0000

0 0.0000 0

-0.0015 0 0.0000

0 -0.0015 0

0.0000 0 -0.0015

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

-0.0000 0 0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

ans =

1.0e-11 \*

-0.0863

-0.0863

-0.0862

-0.0862

-0.0859

-0.0859

-0.0857

-0.0857

-0.0854

-0.0854

-0.0854

-0.0854

0.7060

0.7060

0.7071

0.7071

0.7079

0.7079

0.7107

0.7107

0.7109

0.7109

0.7161

0.7161

ans =

1.0e-10 \*

0.0035

0.0035

0.0035

0.0035

0.0037

0.0037

0.0039

0.0039

0.0039

0.0039

0.0041

0.0041

0.1878

0.1878

0.1890

0.1890

0.1901

0.1901

0.1916

0.1916

0.1918

0.1918

0.1945

0.1945

ans =

1.0e-08 \*

-0.0001

-0.0001

-0.0001

-0.0001

-0.0001

-0.0001

-0.0001

-0.0001

-0.0001

-0.0001

-0.0001

-0.0001

0.5447

0.5447

0.5481

0.5481

0.5488

0.5488

0.5521

0.5521

0.5553

0.5553

0.5556

0.5556

ans =

1.0e-07 \*

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

-0.0000

0.0099

0.0099

0.0100

0.0100

0.0100

0.0100

0.0100

0.0100

0.0100

0.0100

0.0100

0.0100

0.0990

0.0990

0.0997

0.0997

0.0998

0.0998

0.1004

0.1004

0.1011

0.1011

0.1011

0.1011

历时 1677.050423 秒。

>>

## k=3，τ=0.03，可行，矩阵有约束

>> LMI

tau\_u =

0.0300

K =

3 0 0 0 0 0

0 3 0 0 0 0

0 0 3 0 0 0

0 0 0 3 0 0

0 0 0 0 3 0

0 0 0 0 0 3

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.022265

2 1.163461e-03

3 1.163461e-03

4 1.358423e-04

5 1.358423e-04

6 1.829163e-05

7 -5.278833e-06

Result: best value of t: -5.278833e-06

f-radius saturation: 0.000% of R = 1.00e+09

ans =

列 1 至 7

6.8870 0 -1.3810 0 0.4093 0 0.0362

0 6.8870 0 -1.3810 0 0.4093 0

-1.3810 0 5.2230 0 -1.2136 0 0.3735

0 -1.3810 0 5.2230 0 -1.2136 0

0.4093 0 -1.2136 0 5.4680 0 -1.2260

0 0.4093 0 -1.2136 0 5.4680 0

0.0362 0 0.3735 0 -1.2260 0 5.9300

0 0.0362 0 0.3735 0 -1.2260 0

-0.0472 0 -1.4158 0 -0.0726 0 0.0219

0 -0.0472 0 -1.4158 0 -0.0726 0

-1.0150 0 -0.0967 0 -1.0653 0 -0.0356

0 -1.0150 0 -0.0967 0 -1.0653 0

0.7832 0 0.0493 0 -0.0158 0 -0.0056

0 0.7832 0 0.0493 0 -0.0158 0

-0.2850 0 0.5250 0 0.0360 0 -0.0072

0 -0.2850 0 0.5250 0 0.0360 0

-0.0206 0 -0.1639 0 0.4606 0 -0.1548

0 -0.0206 0 -0.1639 0 0.4606 0

-0.0055 0 -0.0123 0 0.0464 0 0.7751

0 -0.0055 0 -0.0123 0 0.0464 0

-0.0226 0 -0.2926 0 -0.0219 0 0.0046

0 -0.0226 0 -0.2926 0 -0.0219 0

-0.2010 0 -0.0329 0 -0.2242 0 -0.0154

0 -0.2010 0 -0.0329 0 -0.2242 0

列 8 至 14

0 -0.0472 0 -1.0150 0 0.7832 0

0.0362 0 -0.0472 0 -1.0150 0 0.7832

0 -1.4158 0 -0.0967 0 0.0493 0

0.3735 0 -1.4158 0 -0.0967 0 0.0493

0 -0.0726 0 -1.0653 0 -0.0158 0

-1.2260 0 -0.0726 0 -1.0653 0 -0.0158

0 0.0219 0 -0.0356 0 -0.0056 0

5.9300 0 0.0219 0 -0.0356 0 -0.0056

0 3.9038 0 -0.0278 0 0.0013 0

0.0219 0 3.9038 0 -0.0278 0 0.0013

0 -0.0278 0 3.1457 0 0.0422 0

-0.0356 0 -0.0278 0 3.1457 0 0.0422

0 0.0013 0 0.0422 0 2.7755 0

-0.0056 0 0.0013 0 0.0422 0 2.7755

0 0.0366 0 -0.0173 0 -0.1832 0

-0.0072 0 0.0366 0 -0.0173 0 -0.1832

0 -0.0107 0 0.0235 0 0.0456 0

-0.1548 0 -0.0107 0 0.0235 0 0.0456

0 -0.0018 0 0.0001 0 0.0149 0

0.7751 0 -0.0018 0 0.0001 0 0.0149

0 0.5001 0 -0.0111 0 -0.0049 0

0.0046 0 0.5001 0 -0.0111 0 -0.0049

0 -0.0081 0 0.3719 0 -0.1443 0

-0.0154 0 -0.0081 0 0.3719 0 -0.1443

列 15 至 21

-0.2850 0 -0.0206 0 -0.0055 0 -0.0226

0 -0.2850 0 -0.0206 0 -0.0055 0

0.5250 0 -0.1639 0 -0.0123 0 -0.2926

0 0.5250 0 -0.1639 0 -0.0123 0

0.0360 0 0.4606 0 0.0464 0 -0.0219

0 0.0360 0 0.4606 0 0.0464 0

-0.0072 0 -0.1548 0 0.7751 0 0.0046

0 -0.0072 0 -0.1548 0 0.7751 0

0.0366 0 -0.0107 0 -0.0018 0 0.5001

0 0.0366 0 -0.0107 0 -0.0018 0

-0.0173 0 0.0235 0 0.0001 0 -0.0111

0 -0.0173 0 0.0235 0 0.0001 0

-0.1832 0 0.0456 0 0.0149 0 -0.0049

0 -0.1832 0 0.0456 0 0.0149 0

1.9009 0 -0.1922 0 0.0578 0 -0.2281

0 1.9009 0 -0.1922 0 0.0578 0

-0.1922 0 1.4197 0 -0.1811 0 -0.0994

0 -0.1922 0 1.4197 0 -0.1811 0

0.0578 0 -0.1811 0 2.5475 0 0.0080

0 0.0578 0 -0.1811 0 2.5475 0

-0.2281 0 -0.0994 0 0.0080 0 1.5837

0 -0.2281 0 -0.0994 0 0.0080 0

-0.1135 0 -0.1071 0 -0.0138 0 -0.0452

0 -0.1135 0 -0.1071 0 -0.0138 0

列 22 至 24

0 -0.2010 0

-0.0226 0 -0.2010

0 -0.0329 0

-0.2926 0 -0.0329

0 -0.2242 0

-0.0219 0 -0.2242

0 -0.0154 0

0.0046 0 -0.0154

0 -0.0081 0

0.5001 0 -0.0081

0 0.3719 0

-0.0111 0 0.3719

0 -0.1443 0

-0.0049 0 -0.1443

0 -0.1135 0

-0.2281 0 -0.1135

0 -0.1071 0

-0.0994 0 -0.1071

0 -0.0138 0

0.0080 0 -0.0138

0 -0.0452 0

1.5837 0 -0.0452

0 1.1963 0

-0.0452 0 1.1963

ans =

列 1 至 7

2.7149 0 -0.3062 0 0.0844 0 0.0028

0 2.7149 0 -0.3062 0 0.0844 0

-0.3062 0 2.3713 0 -0.2626 0 0.0768

0 -0.3062 0 2.3713 0 -0.2626 0

0.0844 0 -0.2626 0 2.4405 0 -0.2595

0 0.0844 0 -0.2626 0 2.4405 0

0.0028 0 0.0768 0 -0.2595 0 2.5212

0 0.0028 0 0.0768 0 -0.2595 0

-0.0102 0 -0.3031 0 -0.0107 0 0.0018

0 -0.0102 0 -0.3031 0 -0.0107 0

-0.2231 0 -0.0166 0 -0.2330 0 -0.0071

0 -0.2231 0 -0.0166 0 -0.2330 0

-1.1911 0 0.2994 0 -0.0448 0 0.0056

0 -1.1911 0 0.2994 0 -0.0448 0

0.1339 0 -0.9669 0 0.2197 0 -0.0409

0 0.1339 0 -0.9669 0 0.2197 0

-0.0556 0 0.1041 0 -1.0340 0 0.1159

0 -0.0556 0 0.1041 0 -1.0340 0

0.0054 0 -0.0413 0 0.2309 0 -1.1055

0 0.0054 0 -0.0413 0 0.2309 0

-0.0266 0 0.1183 0 0.0145 0 -0.0070

0 -0.0266 0 0.1183 0 0.0145 0

0.0638 0 -0.0024 0 0.0917 0 -0.0091

0 0.0638 0 -0.0024 0 0.0917 0

列 8 至 14

0 -0.0102 0 -0.2231 0 -1.1911 0

0.0028 0 -0.0102 0 -0.2231 0 -1.1911

0 -0.3031 0 -0.0166 0 0.2994 0

0.0768 0 -0.3031 0 -0.0166 0 0.2994

0 -0.0107 0 -0.2330 0 -0.0448 0

-0.2595 0 -0.0107 0 -0.2330 0 -0.0448

0 0.0018 0 -0.0071 0 0.0056 0

2.5212 0 0.0018 0 -0.0071 0 0.0056

0 2.1102 0 -0.0045 0 -0.0158 0

0.0018 0 2.1102 0 -0.0045 0 -0.0158

0 -0.0045 0 1.9579 0 0.1951 0

-0.0071 0 -0.0045 0 1.9579 0 0.1951

0 -0.0158 0 0.1951 0 6.8947 0

0.0056 0 -0.0158 0 0.1951 0 6.8947

0 0.2687 0 0.0091 0 -1.1423 0

-0.0409 0 0.2687 0 0.0091 0 -1.1423

0 0.0226 0 0.2236 0 0.2822 0

0.1159 0 0.0226 0 0.2236 0 0.2822

0 -0.0090 0 -0.0043 0 -0.0478 0

-1.1055 0 -0.0090 0 -0.0043 0 -0.0478

0 -0.8278 0 0.0067 0 0.0957 0

-0.0070 0 -0.8278 0 0.0067 0 0.0957

0 0.0077 0 -0.7377 0 -0.6470 0

-0.0091 0 0.0077 0 -0.7377 0 -0.6470

列 15 至 21

0.1339 0 -0.0556 0 0.0054 0 -0.0266

0 0.1339 0 -0.0556 0 0.0054 0

-0.9669 0 0.1041 0 -0.0413 0 0.1183

0 -0.9669 0 0.1041 0 -0.0413 0

0.2197 0 -1.0340 0 0.2309 0 0.0145

0 0.2197 0 -1.0340 0 0.2309 0

-0.0409 0 0.1159 0 -1.1055 0 -0.0070

0 -0.0409 0 0.1159 0 -1.1055 0

0.2687 0 0.0226 0 -0.0090 0 -0.8278

0 0.2687 0 0.0226 0 -0.0090 0

0.0091 0 0.2236 0 -0.0043 0 0.0067

0 0.0091 0 0.2236 0 -0.0043 0

-1.1423 0 0.2822 0 -0.0478 0 0.0957

0 -1.1423 0 0.2822 0 -0.0478 0

5.5216 0 -0.9340 0 0.2689 0 -1.1420

0 5.5216 0 -0.9340 0 0.2689 0

-0.9340 0 5.8027 0 -0.9520 0 -0.2502

0 -0.9340 0 5.8027 0 -0.9520 0

0.2689 0 -0.9520 0 6.4083 0 0.0707

0 0.2689 0 -0.9520 0 6.4083 0

-1.1420 0 -0.2502 0 0.0707 0 4.5351

0 -1.1420 0 -0.2502 0 0.0707 0

-0.1968 0 -0.9367 0 0.0000 0 -0.1247

0 -0.1968 0 -0.9367 0 0.0000 0

列 22 至 24

0 0.0638 0

-0.0266 0 0.0638

0 -0.0024 0

0.1183 0 -0.0024

0 0.0917 0

0.0145 0 0.0917

0 -0.0091 0

-0.0070 0 -0.0091

0 0.0077 0

-0.8278 0 0.0077

0 -0.7377 0

0.0067 0 -0.7377

0 -0.6470 0

0.0957 0 -0.6470

0 -0.1968 0

-1.1420 0 -0.1968

0 -0.9367 0

-0.2502 0 -0.9367

0 0.0000 0

0.0707 0 0.0000

0 -0.1247 0

4.5351 0 -0.1247

0 3.8308 0

-0.1247 0 3.8308

ans =

列 1 至 7

37.3824 0 -0.0116 0 -0.0119 0 -0.0092

0 37.3824 0 -0.0116 0 -0.0119 0

-0.0116 0 37.4090 0 0.0503 0 -0.0282

0 -0.0116 0 37.4090 0 0.0503 0

-0.0119 0 0.0503 0 37.1736 0 0.0260

0 -0.0119 0 0.0503 0 37.1736 0

-0.0092 0 -0.0282 0 0.0260 0 37.2368

0 -0.0092 0 -0.0282 0 0.0260 0

0.0365 0 0.0551 0 0.0351 0 -0.0028

0 0.0365 0 0.0551 0 0.0351 0

0.0288 0 0.0669 0 0.0461 0 0.0202

0 0.0288 0 0.0669 0 0.0461 0

6.6358 0 -0.8393 0 0.0665 0 0.0058

0 6.6358 0 -0.8393 0 0.0665 0

-1.1939 0 5.3822 0 -0.6306 0 0.1083

0 -1.1939 0 5.3822 0 -0.6306 0

0.0508 0 -0.9363 0 4.9083 0 -0.9126

0 0.0508 0 -0.9363 0 4.9083 0

0.0089 0 0.1015 0 -0.6331 0 5.6971

0 0.0089 0 0.1015 0 -0.6331 0

-0.0600 0 -1.2369 0 -0.0863 0 0.0266

0 -0.0600 0 -1.2369 0 -0.0863 0

-0.8767 0 -0.1078 0 -0.9967 0 -0.0575

0 -0.8767 0 -0.1078 0 -0.9967 0

列 8 至 14

0 0.0365 0 0.0288 0 6.6358 0

-0.0092 0 0.0365 0 0.0288 0 6.6358

0 0.0551 0 0.0669 0 -0.8393 0

-0.0282 0 0.0551 0 0.0669 0 -0.8393

0 0.0351 0 0.0461 0 0.0665 0

0.0260 0 0.0351 0 0.0461 0 0.0665

0 -0.0028 0 0.0202 0 0.0058 0

37.2368 0 -0.0028 0 0.0202 0 0.0058

0 37.2039 0 0.0188 0 -0.0706 0

-0.0028 0 37.2039 0 0.0188 0 -0.0706

0 0.0188 0 37.2713 0 -0.6244 0

0.0202 0 0.0188 0 37.2713 0 -0.6244

0 -0.0706 0 -0.6244 0 48.3003 0

0.0058 0 -0.0706 0 -0.6244 0 48.3003

0 -0.8813 0 -0.1382 0 -1.7798 0

0.1083 0 -0.8813 0 -0.1382 0 -1.7798

0 -0.0795 0 -0.6340 0 0.0356 0

-0.9126 0 -0.0795 0 -0.6340 0 0.0356

0 0.0104 0 -0.0504 0 0.0395 0

5.6971 0 0.0104 0 -0.0504 0 0.0395

0 3.9184 0 -0.0221 0 -0.1599 0

0.0266 0 3.9184 0 -0.0221 0 -0.1599

0 -0.0218 0 3.3087 0 -1.3458 0

-0.0575 0 -0.0218 0 3.3087 0 -1.3458

列 15 至 21

-1.1939 0 0.0508 0 0.0089 0 -0.0600

0 -1.1939 0 0.0508 0 0.0089 0

5.3822 0 -0.9363 0 0.1015 0 -1.2369

0 5.3822 0 -0.9363 0 0.1015 0

-0.6306 0 4.9083 0 -0.6331 0 -0.0863

0 -0.6306 0 4.9083 0 -0.6331 0

0.1083 0 -0.9126 0 5.6971 0 0.0266

0 0.1083 0 -0.9126 0 5.6971 0

-0.8813 0 -0.0795 0 0.0104 0 3.9184

0 -0.8813 0 -0.0795 0 0.0104 0

-0.1382 0 -0.6340 0 -0.0504 0 -0.0221

0 -0.1382 0 -0.6340 0 -0.0504 0

-1.7798 0 0.0356 0 0.0395 0 -0.1599

0 -1.7798 0 0.0356 0 0.0395 0

45.6707 0 -1.4272 0 0.1417 0 -1.9298

0 45.6707 0 -1.4272 0 0.1417 0

-1.4272 0 43.5026 0 -1.3395 0 -0.2488

0 -1.4272 0 43.5026 0 -1.3395 0

0.1417 0 -1.3395 0 45.8692 0 0.0089

0 0.1417 0 -1.3395 0 45.8692 0

-1.9298 0 -0.2488 0 0.0089 0 41.9151

0 -1.9298 0 -0.2488 0 0.0089 0

-0.3201 0 -1.4029 0 -0.0996 0 -0.0817

0 -0.3201 0 -1.4029 0 -0.0996 0

列 22 至 24

0 -0.8767 0

-0.0600 0 -0.8767

0 -0.1078 0

-1.2369 0 -0.1078

0 -0.9967 0

-0.0863 0 -0.9967

0 -0.0575 0

0.0266 0 -0.0575

0 -0.0218 0

3.9184 0 -0.0218

0 3.3087 0

-0.0221 0 3.3087

0 -1.3458 0

-0.1599 0 -1.3458

0 -0.3201 0

-1.9298 0 -0.3201

0 -1.4029 0

-0.2488 0 -1.4029

0 -0.0996 0

0.0089 0 -0.0996

0 -0.0817 0

41.9151 0 -0.0817

0 40.5839 0

-0.0817 0 40.5839

ans =

列 1 至 7

-21.3611 0 0.4581 0 -0.0005 0 -0.0096

0 -21.3611 0 0.4581 0 -0.0005 0

0.3426 0 -20.8094 0 0.3950 0 -0.0283

0 0.3426 0 -20.8094 0 0.3950 0

0.0075 0 0.2628 0 -20.6646 0 0.2367

0 0.0075 0 0.2628 0 -20.6646 0

-0.0084 0 -0.0318 0 0.3586 0 -21.0299

0 -0.0084 0 -0.0318 0 0.3586 0

0.0652 0 0.3998 0 0.0513 0 0.0029

0 0.0652 0 0.3998 0 0.0513 0

0.2688 0 0.0985 0 0.3273 0 0.0331

0 0.2688 0 0.0985 0 0.3273 0

1.9882 0 -0.0596 0 0.0987 0 0.0233

0 1.9882 0 -0.0596 0 0.0987 0

-0.2039 0 1.9552 0 -0.1447 0 0.1590

0 -0.2039 0 1.9552 0 -0.1447 0

0.1476 0 -0.3450 0 2.8770 0 -0.3314

0 0.1476 0 -0.3450 0 2.8770 0

0.0275 0 0.1495 0 -0.1652 0 2.3876

0 0.0275 0 0.1495 0 -0.1652 0

-0.0484 0 -0.3593 0 -0.0574 0 0.0397

0 -0.0484 0 -0.3593 0 -0.0574 0

-0.2254 0 -0.0893 0 -0.2594 0 -0.0574

0 -0.2254 0 -0.0893 0 -0.2594 0

列 8 至 14

0 0.0544 0 0.3841 0 -0.5464 0

-0.0096 0 0.0544 0 0.3841 0 -0.5464

0 0.5422 0 0.1007 0 0.4208 0

-0.0283 0 0.5422 0 0.1007 0 0.4208

0 0.0579 0 0.4325 0 0.1654 0

0.2367 0 0.0579 0 0.4325 0 0.1654

0 -0.0103 0 0.0366 0 0.0013 0

-21.0299 0 -0.0103 0 0.0366 0 0.0013

0 -20.2990 0 0.0203 0 0.0298 0

0.0029 0 -20.2990 0 0.0203 0 0.0298

0 0.0222 0 -19.9899 0 0.3060 0

0.0331 0 0.0222 0 -19.9899 0 0.3060

0 -0.0841 0 -0.1113 0 -26.0230 0

0.0233 0 -0.0841 0 -0.1113 0 -26.0230

0 -0.1469 0 -0.1001 0 2.3307 0

0.1590 0 -0.1469 0 -0.1001 0 2.3307

0 -0.0363 0 -0.1040 0 0.3695 0

-0.3314 0 -0.0363 0 -0.1040 0 0.3695

0 0.0135 0 -0.0606 0 0.0560 0

2.3876 0 0.0135 0 -0.0606 0 0.0560

0 2.4763 0 -0.0317 0 -0.0148 0

0.0397 0 2.4763 0 -0.0317 0 -0.0148

0 -0.0318 0 2.3831 0 1.5890 0

-0.0574 0 -0.0318 0 2.3831 0 1.5890

列 15 至 21

-0.0029 0 0.1120 0 0.0034 0 0.0440

0 -0.0029 0 0.1120 0 0.0034 0

-0.2730 0 -0.0956 0 0.1186 0 0.0662

0 -0.2730 0 -0.0956 0 0.1186 0

0.1712 0 0.3255 0 0.1625 0 -0.0246

0 0.1712 0 0.3255 0 0.1625 0

0.1200 0 -0.1164 0 -0.1041 0 0.0182

0 0.1200 0 -0.1164 0 -0.1041 0

0.3840 0 -0.0484 0 0.0164 0 0.3410

0 0.3840 0 -0.0484 0 0.0164 0

-0.0563 0 0.4325 0 0.0043 0 0.0032

0 -0.0563 0 0.4325 0 0.0043 0

0.5174 0 0.1334 0 0.0661 0 -0.0950

0 0.5174 0 0.1334 0 0.0661 0

-24.3795 0 -0.0320 0 0.2582 0 0.3759

0 -24.3795 0 -0.0320 0 0.2582 0

1.2658 0 -22.5631 0 1.2608 0 -0.1281

0 1.2658 0 -22.5631 0 1.2608 0

0.2714 0 0.0169 0 -24.3548 0 0.0296

0 0.2714 0 0.0169 0 -24.3548 0

2.0452 0 -0.0697 0 0.0185 0 -22.0804

0 2.0452 0 -0.0697 0 0.0185 0

-0.1512 0 2.0226 0 -0.0226 0 -0.0688

0 -0.1512 0 2.0226 0 -0.0226 0

列 22 至 24

0 0.0396 0

0.0440 0 0.0396

0 0.0333 0

0.0662 0 0.0333

0 0.0609 0

-0.0246 0 0.0609

0 0.0124 0

0.0182 0 0.0124

0 0.0024 0

0.3410 0 0.0024

0 0.4614 0

0.0032 0 0.4614

0 0.2390 0

-0.0950 0 0.2390

0 -0.1265 0

0.3759 0 -0.1265

0 0.2732 0

-0.1281 0 0.2732

0 -0.0927 0

0.0296 0 -0.0927

0 -0.0448 0

-22.0804 0 -0.0448

0 -21.4408 0

-0.0688 0 -21.4408

ans =

0.0010

0.0010

0.0013

0.0013

0.0015

0.0015

0.0018

0.0018

0.0021

0.0021

0.0024

0.0024

0.0027

0.0027

0.0032

0.0032

0.0048

0.0048

0.0056

0.0056

0.0069

0.0069

0.0087

0.0087

ans =

0.0015

0.0015

0.0017

0.0017

0.0020

0.0020

0.0021

0.0021

0.0024

0.0024

0.0027

0.0027

0.0031

0.0031

0.0042

0.0042

0.0056

0.0056

0.0059

0.0059

0.0072

0.0072

0.0086

0.0086

ans =

0.0337

0.0337

0.0342

0.0342

0.0345

0.0345

0.0347

0.0347

0.0353

0.0353

0.0357

0.0357

0.0412

0.0412

0.0431

0.0431

0.0459

0.0459

0.0484

0.0484

0.0498

0.0498

0.0531

0.0531

ans =

0.0098

0.0098

0.0109

0.0109

0.0118

0.0118

0.0122

0.0122

0.0135

0.0135

0.0144

0.0144

0.0221

0.0221

0.0233

0.0233

0.0247

0.0247

0.0257

0.0257

0.0270

0.0270

0.0283

0.0283

0.0566

0.0566

0.0566

0.0566

0.0567

0.0567

0.0568

0.0568

0.0568

0.0568

0.0569

0.0569

0.0605

0.0605

0.0634

0.0634

0.0675

0.0675

0.0716

0.0716

0.0730

0.0730

0.0789

0.0789

历时 408.819932 秒。

## k=5，τ=0.03，三项，矩阵没有约束，可行，这个运行好快

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 4.155407e-03

2 4.155407e-03

3 -4.193603e-05

Result: best value of t: -4.193603e-05

f-radius saturation: 0.000% of R = 1.00e+09

ans =

列 1 至 7

114.0677 0 -30.3536 0 8.9727 0 -0.1458

0 114.0677 0 -30.3536 0 8.9727 0

-30.3536 0 71.3671 0 -20.1094 0 5.6091

0 -30.3536 0 71.3671 0 -20.1094 0

8.9727 0 -20.1094 0 63.3723 0 -21.7680

0 8.9727 0 -20.1094 0 63.3723 0

-0.1458 0 5.6091 0 -21.7680 0 98.8586

0 -0.1458 0 5.6091 0 -21.7680 0

2.4731 0 -27.8524 0 -1.0902 0 0.3006

0 2.4731 0 -27.8524 0 -1.0902 0

-20.3478 0 0.4806 0 -18.3137 0 1.4794

0 -20.3478 0 0.4806 0 -18.3137 0

7.5789 0 -0.0905 0 0.0286 0 0.0039

0 7.5789 0 -0.0905 0 0.0286 0

-2.7732 0 4.6981 0 -0.0229 0 0.0031

0 -2.7732 0 4.6981 0 -0.0229 0

0.0499 0 -1.5657 0 4.0523 0 -1.5826

0 0.0499 0 -1.5657 0 4.0523 0

0.0048 0 0.0118 0 -0.0978 0 7.4659

0 0.0048 0 0.0118 0 -0.0978 0

0.1105 0 -2.6996 0 -0.0413 0 0.0087

0 0.1105 0 -2.6996 0 -0.0413 0

-1.9646 0 0.0217 0 -1.9560 0 0.0597

0 -1.9646 0 0.0217 0 -1.9560 0

列 8 至 14

0 2.4731 0 -20.3478 0 7.5789 0

-0.1458 0 2.4731 0 -20.3478 0 7.5789

0 -27.8524 0 0.4806 0 -0.0905 0

5.6091 0 -27.8524 0 0.4806 0 -0.0905

0 -1.0902 0 -18.3137 0 0.0286 0

-21.7680 0 -1.0902 0 -18.3137 0 0.0286

0 0.3006 0 1.4794 0 0.0039 0

98.8586 0 0.3006 0 1.4794 0 0.0039

0 54.0159 0 0.0539 0 0.0370 0

0.3006 0 54.0159 0 0.0539 0 0.0370

0 0.0539 0 35.3438 0 -0.0818 0

1.4794 0 0.0539 0 35.3438 0 -0.0818

0 0.0370 0 -0.0818 0 36.3695 0

0.0039 0 0.0370 0 -0.0818 0 36.3695

0 -0.0276 0 -0.0212 0 -6.8092 0

0.0031 0 -0.0276 0 -0.0212 0 -6.8092

0 -0.0320 0 0.0294 0 0.0524 0

-1.5826 0 -0.0320 0 0.0294 0 0.0524

0 0.0012 0 0.0248 0 -0.0399 0

7.4659 0 0.0012 0 0.0248 0 -0.0399

0 4.5633 0 -0.0010 0 -0.0248 0

0.0087 0 4.5633 0 -0.0010 0 -0.0248

0 -0.0017 0 3.2539 0 -5.7076 0

0.0597 0 -0.0017 0 3.2539 0 -5.7076

列 15 至 21

-2.7732 0 0.0499 0 0.0048 0 0.1105

0 -2.7732 0 0.0499 0 0.0048 0

4.6981 0 -1.5657 0 0.0118 0 -2.6996

0 4.6981 0 -1.5657 0 0.0118 0

-0.0229 0 4.0523 0 -0.0978 0 -0.0413

0 -0.0229 0 4.0523 0 -0.0978 0

0.0031 0 -1.5826 0 7.4659 0 0.0087

0 0.0031 0 -1.5826 0 7.4659 0

-0.0276 0 -0.0320 0 0.0012 0 4.5633

0 -0.0276 0 -0.0320 0 0.0012 0

-0.0212 0 0.0294 0 0.0248 0 -0.0010

0 -0.0212 0 0.0294 0 0.0248 0

-6.8092 0 0.0524 0 -0.0399 0 -0.0248

0 -6.8092 0 0.0524 0 -0.0399 0

23.5873 0 -4.4682 0 0.0545 0 -5.4284

0 23.5873 0 -4.4682 0 0.0545 0

-4.4682 0 19.5546 0 -5.0664 0 -0.4022

0 -4.4682 0 19.5546 0 -5.0664 0

0.0545 0 -5.0664 0 36.0015 0 0.0212

0 0.0545 0 -5.0664 0 36.0015 0

-5.4284 0 -0.4022 0 0.0212 0 22.9493

0 -5.4284 0 -0.4022 0 0.0212 0

-0.4777 0 -3.0605 0 -0.0211 0 0.0738

0 -0.4777 0 -3.0605 0 -0.0211 0

列 22 至 24

0 -1.9646 0

0.1105 0 -1.9646

0 0.0217 0

-2.6996 0 0.0217

0 -1.9560 0

-0.0413 0 -1.9560

0 0.0597 0

0.0087 0 0.0597

0 -0.0017 0

4.5633 0 -0.0017

0 3.2539 0

-0.0010 0 3.2539

0 -5.7076 0

-0.0248 0 -5.7076

0 -0.4777 0

-5.4284 0 -0.4777

0 -3.0605 0

-0.4022 0 -3.0605

0 -0.0211 0

0.0212 0 -0.0211

0 0.0738 0

22.9493 0 0.0738

0 16.5986 0

0.0738 0 16.5986

ans =

列 1 至 7

6.4514 0 -1.7642 0 0.7392 0 -0.0156

0 6.4514 0 -1.7642 0 0.7392 0

-1.7642 0 5.0076 0 -1.8338 0 0.6284

0 -1.7642 0 5.0076 0 -1.8338 0

0.7392 0 -1.8338 0 6.0895 0 -1.8426

0 0.7392 0 -1.8338 0 6.0895 0

-0.0156 0 0.6284 0 -1.8426 0 5.4081

0 -0.0156 0 0.6284 0 -1.8426 0

0.0242 0 -1.6792 0 0.0025 0 0.0006

0 0.0242 0 -1.6792 0 0.0025 0

-1.3738 0 0.0201 0 -1.3628 0 0.0162

0 -1.3738 0 0.0201 0 -1.3628 0

-26.5272 0 7.2944 0 -1.1135 0 -0.0321

0 -26.5272 0 7.2944 0 -1.1135 0

5.8491 0 -12.1711 0 1.8271 0 0.1519

0 5.8491 0 -12.1711 0 1.8271 0

-0.9032 0 0.5269 0 -2.6660 0 1.3438

0 -0.9032 0 0.5269 0 -2.6660 0

-0.0124 0 0.1976 0 2.3890 0 -23.7305

0 -0.0124 0 0.1976 0 2.3890 0

-0.7699 0 4.9884 0 0.4150 0 -0.1078

0 -0.7699 0 4.9884 0 0.4150 0

3.0519 0 0.0033 0 1.6017 0 -0.3813

0 3.0519 0 0.0033 0 1.6017 0

列 8 至 14

0 0.0242 0 -1.3738 0 -26.5272 0

-0.0156 0 0.0242 0 -1.3738 0 -26.5272

0 -1.6792 0 0.0201 0 7.2944 0

0.6284 0 -1.6792 0 0.0201 0 7.2944

0 0.0025 0 -1.3628 0 -1.1135 0

-1.8426 0 0.0025 0 -1.3628 0 -1.1135

0 0.0006 0 0.0162 0 -0.0321 0

5.4081 0 0.0006 0 0.0162 0 -0.0321

0 3.4037 0 -0.0018 0 -1.3005 0

0.0006 0 3.4037 0 -0.0018 0 -1.3005

0 -0.0018 0 2.7586 0 3.9642 0

0.0162 0 -0.0018 0 2.7586 0 3.9642

0 -1.3005 0 3.9642 0 142.0321 0

-0.0321 0 -1.3005 0 3.9642 0 142.0321

0 6.4678 0 -0.4037 0 -42.6191 0

0.1519 0 6.4678 0 -0.4037 0 -42.6191

0 0.4310 0 3.4174 0 17.3093 0

1.3438 0 0.4310 0 3.4174 0 17.3093

0 -0.1121 0 -0.7981 0 -0.7882 0

-23.7305 0 -0.1121 0 -0.7981 0 -0.7882

0 -10.9659 0 -0.0286 0 4.5075 0

-0.1078 0 -10.9659 0 -0.0286 0 4.5075

0 -0.0282 0 -4.7031 0 -32.9069 0

-0.3813 0 -0.0282 0 -4.7031 0 -32.9069

列 15 至 21

5.8491 0 -0.9032 0 -0.0124 0 -0.7699

0 5.8491 0 -0.9032 0 -0.0124 0

-12.1711 0 0.5269 0 0.1976 0 4.9884

0 -12.1711 0 0.5269 0 0.1976 0

1.8271 0 -2.6660 0 2.3890 0 0.4150

0 1.8271 0 -2.6660 0 2.3890 0

0.1519 0 1.3438 0 -23.7305 0 -0.1078

0 0.1519 0 1.3438 0 -23.7305 0

6.4678 0 0.4310 0 -0.1121 0 -10.9659

0 6.4678 0 0.4310 0 -0.1121 0

-0.4037 0 3.4174 0 -0.7981 0 -0.0286

0 -0.4037 0 3.4174 0 -0.7981 0

-42.6191 0 17.3093 0 -0.7882 0 4.5075

0 -42.6191 0 17.3093 0 -0.7882 0

102.7835 0 -43.6300 0 13.7444 0 -39.2880

0 102.7835 0 -43.6300 0 13.7444 0

-43.6300 0 129.7720 0 -45.2567 0 -3.7948

0 -43.6300 0 129.7720 0 -45.2567 0

13.7444 0 -45.2567 0 122.0934 0 0.3804

0 13.7444 0 -45.2567 0 122.0934 0

-39.2880 0 -3.7948 0 0.3804 0 72.1379

0 -39.2880 0 -3.7948 0 0.3804 0

-0.7408 0 -31.5555 0 2.4504 0 -0.0398

0 -0.7408 0 -31.5555 0 2.4504 0

列 22 至 24

0 3.0519 0

-0.7699 0 3.0519

0 0.0033 0

4.9884 0 0.0033

0 1.6017 0

0.4150 0 1.6017

0 -0.3813 0

-0.1078 0 -0.3813

0 -0.0282 0

-10.9659 0 -0.0282

0 -4.7031 0

-0.0286 0 -4.7031

0 -32.9069 0

4.5075 0 -32.9069

0 -0.7408 0

-39.2880 0 -0.7408

0 -31.5555 0

-3.7948 0 -31.5555

0 2.4504 0

0.3804 0 2.4504

0 -0.0398 0

72.1379 0 -0.0398

0 55.9058 0

-0.0398 0 55.9058

ans =

1.0e+03 \*

列 1 至 7

1.5444 0 -0.0015 0 0.0003 0 -0.0000

0 1.5444 0 -0.0015 0 0.0003 0

-0.0015 0 1.5433 0 -0.0014 0 0.0002

0 -0.0015 0 1.5433 0 -0.0014 0

0.0003 0 -0.0014 0 1.5436 0 -0.0015

0 0.0003 0 -0.0014 0 1.5436 0

-0.0000 0 0.0002 0 -0.0015 0 1.5433

0 -0.0000 0 0.0002 0 -0.0015 0

0.0000 0 -0.0014 0 -0.0000 0 0.0000

0 0.0000 0 -0.0014 0 -0.0000 0

-0.0012 0 -0.0000 0 -0.0012 0 0.0000

0 -0.0012 0 -0.0000 0 -0.0012 0

0.0570 0 -0.0125 0 0.0030 0 -0.0001

0 0.0570 0 -0.0125 0 0.0030 0

-0.0170 0 0.0408 0 -0.0101 0 0.0020

0 -0.0170 0 0.0408 0 -0.0101 0

0.0033 0 -0.0136 0 0.0401 0 -0.0141

0 0.0033 0 -0.0136 0 0.0401 0

-0.0000 0 0.0021 0 -0.0112 0 0.0491

0 -0.0000 0 0.0021 0 -0.0112 0

0.0015 0 -0.0160 0 -0.0005 0 0.0001

0 0.0015 0 -0.0160 0 -0.0005 0

-0.0128 0 0.0005 0 -0.0126 0 0.0010

0 -0.0128 0 0.0005 0 -0.0126 0

列 8 至 14

0 0.0000 0 -0.0012 0 0.0570 0

-0.0000 0 0.0000 0 -0.0012 0 0.0570

0 -0.0014 0 -0.0000 0 -0.0125 0

0.0002 0 -0.0014 0 -0.0000 0 -0.0125

0 -0.0000 0 -0.0012 0 0.0030 0

-0.0015 0 -0.0000 0 -0.0012 0 0.0030

0 0.0000 0 0.0000 0 -0.0001 0

1.5433 0 0.0000 0 0.0000 0 -0.0001

0 1.5411 0 -0.0000 0 0.0006 0

0.0000 0 1.5411 0 -0.0000 0 0.0006

0 -0.0000 0 1.5407 0 -0.0095 0

0.0000 0 -0.0000 0 1.5407 0 -0.0095

0 0.0006 0 -0.0095 0 1.6438 0

-0.0001 0 0.0006 0 -0.0095 0 1.6438

0 -0.0112 0 -0.0002 0 -0.0295 0

0.0020 0 -0.0112 0 -0.0002 0 -0.0295

0 -0.0005 0 -0.0078 0 0.0019 0

-0.0141 0 -0.0005 0 -0.0078 0 0.0019

0 0.0001 0 0.0003 0 -0.0001 0

0.0491 0 0.0001 0 0.0003 0 -0.0001

0 0.0274 0 0.0000 0 0.0022 0

0.0001 0 0.0274 0 0.0000 0 0.0022

0 0.0000 0 0.0205 0 -0.0250 0

0.0010 0 0.0000 0 0.0205 0 -0.0250

列 15 至 21

-0.0170 0 0.0033 0 -0.0000 0 0.0015

0 -0.0170 0 0.0033 0 -0.0000 0

0.0408 0 -0.0136 0 0.0021 0 -0.0160

0 0.0408 0 -0.0136 0 0.0021 0

-0.0101 0 0.0401 0 -0.0112 0 -0.0005

0 -0.0101 0 0.0401 0 -0.0112 0

0.0020 0 -0.0141 0 0.0491 0 0.0001

0 0.0020 0 -0.0141 0 0.0491 0

-0.0112 0 -0.0005 0 0.0001 0 0.0274

0 -0.0112 0 -0.0005 0 0.0001 0

-0.0002 0 -0.0078 0 0.0003 0 0.0000

0 -0.0002 0 -0.0078 0 0.0003 0

-0.0295 0 0.0019 0 -0.0001 0 0.0022

0 -0.0295 0 0.0019 0 -0.0001 0

1.6042 0 -0.0263 0 0.0012 0 -0.0252

0 1.6042 0 -0.0263 0 0.0012 0

-0.0263 0 1.5449 0 -0.0289 0 -0.0026

0 -0.0263 0 1.5449 0 -0.0289 0

0.0012 0 -0.0289 0 1.6267 0 0.0002

0 0.0012 0 -0.0289 0 1.6267 0

-0.0252 0 -0.0026 0 0.0002 0 1.5631

0 -0.0252 0 -0.0026 0 0.0002 0

-0.0004 0 -0.0172 0 0.0020 0 0.0003

0 -0.0004 0 -0.0172 0 0.0020 0

列 22 至 24

0 -0.0128 0

0.0015 0 -0.0128

0 0.0005 0

-0.0160 0 0.0005

0 -0.0126 0

-0.0005 0 -0.0126

0 0.0010 0

0.0001 0 0.0010

0 0.0000 0

0.0274 0 0.0000

0 0.0205 0

0.0000 0 0.0205

0 -0.0250 0

0.0022 0 -0.0250

0 -0.0004 0

-0.0252 0 -0.0004

0 -0.0172 0

-0.0026 0 -0.0172

0 0.0020 0

0.0002 0 0.0020

0 0.0003 0

1.5631 0 0.0003

0 1.5306 0

0.0003 0 1.5306

ans =

列 1 至 7

-957.1654 0 -0.3172 0 0.3801 0 -0.0222

0 -957.1654 0 -0.3172 0 0.3801 0

-0.1420 0 -957.7433 0 -0.0793 0 0.3254

0 -0.1420 0 -957.7433 0 -0.0793 0

0.4116 0 -0.1217 0 -957.4081 0 -0.1663

0 0.4116 0 -0.1217 0 -957.4081 0

-0.0237 0 0.3164 0 -0.1155 0 -957.0847

0 -0.0237 0 0.3164 0 -0.1155 0

0.0457 0 -0.0987 0 -0.0273 0 0.0204

0 0.0457 0 -0.0987 0 -0.0273 0

-0.0166 0 -0.0119 0 0.0812 0 0.0090

0 -0.0166 0 -0.0119 0 0.0812 0

26.6075 0 -7.4077 0 3.5772 0 -0.0789

0 26.6075 0 -7.4077 0 3.5772 0

-8.9915 0 12.5124 0 -4.2295 0 2.4092

0 -8.9915 0 12.5124 0 -4.2295 0

3.4931 0 -4.9152 0 9.5796 0 -5.6075

0 3.4931 0 -4.9152 0 9.5796 0

-0.0876 0 2.5633 0 -5.1785 0 24.2301

0 -0.0876 0 2.5633 0 -5.1785 0

1.3847 0 -8.0089 0 -0.3371 0 0.1679

0 1.3847 0 -8.0089 0 -0.3371 0

-5.6886 0 0.4352 0 -4.2038 0 0.7633

0 -5.6886 0 0.4352 0 -4.2038 0

列 8 至 14

0 0.0578 0 -0.0387 0 23.2807 0

-0.0222 0 0.0578 0 -0.0387 0 23.2807

0 -0.2278 0 0.0285 0 -5.6428 0

0.3254 0 -0.2278 0 0.0285 0 -5.6428

0 -0.0156 0 -0.0622 0 3.4281 0

-0.1663 0 -0.0156 0 -0.0622 0 3.4281

0 0.0010 0 0.0419 0 -0.2003 0

-957.0847 0 0.0010 0 0.0419 0 -0.2003

0 -957.0183 0 0.0000 0 0.5758 0

0.0204 0 -957.0183 0 0.0000 0 0.5758

0 0.0002 0 -957.2779 0 -3.3865 0

0.0090 0 0.0002 0 -957.2779 0 -3.3865

0 0.8129 0 -4.5356 0 -969.9474 0

-0.0789 0 0.8129 0 -4.5356 0 -969.9474

0 -6.1192 0 0.3189 0 5.9488 0

2.4092 0 -6.1192 0 0.3189 0 5.9488

0 -0.2630 0 -3.2005 0 2.8567 0

-5.6075 0 -0.2630 0 -3.2005 0 2.8567

0 0.0455 0 0.5734 0 -0.5571 0

24.2301 0 0.0455 0 0.5734 0 -0.5571

0 13.4064 0 0.0235 0 -0.9228 0

0.1679 0 13.4064 0 0.0235 0 -0.9228

0 0.0227 0 6.9866 0 6.2345 0

0.7633 0 0.0227 0 6.9866 0 6.2345

列 15 至 21

-9.9321 0 3.9848 0 -0.1779 0 1.6106

0 -9.9321 0 3.9848 0 -0.1779 0

11.8209 0 -6.8736 0 2.5497 0 -8.6329

0 11.8209 0 -6.8736 0 2.5497 0

-3.6000 0 13.8955 0 -4.2812 0 -0.6087

0 -3.6000 0 13.8955 0 -4.2812 0

2.5071 0 -7.5267 0 21.2722 0 0.1460

0 2.5071 0 -7.5267 0 21.2722 0

-4.8555 0 -0.6012 0 0.1854 0 12.8130

0 -4.8555 0 -0.6012 0 0.1854 0

-0.3056 0 -2.0773 0 0.2241 0 0.0622

0 -0.3056 0 -2.0773 0 0.2241 0

-11.9868 0 7.6918 0 -0.4742 0 4.5604

0 -11.9868 0 7.6918 0 -0.4742 0

-974.4889 0 -8.4984 0 4.5580 0 -6.8479

0 -974.4889 0 -8.4984 0 4.5580 0

8.3178 0 -949.7228 0 7.5736 0 0.7027

0 8.3178 0 -949.7228 0 7.5736 0

4.6041 0 -11.4056 0 -959.8755 0 0.1058

0 4.6041 0 -11.4056 0 -959.8755 0

6.6091 0 0.2938 0 0.5638 0 -945.0447

0 6.6091 0 0.2938 0 0.5638 0

-0.6755 0 9.6689 0 -1.0162 0 0.4870

0 -0.6755 0 9.6689 0 -1.0162 0

列 22 至 24

0 -6.2378 0

1.6106 0 -6.2378

0 0.6019 0

-8.6329 0 0.6019

0 -6.2998 0

-0.6087 0 -6.2998

0 1.0633 0

0.1460 0 1.0633

0 0.0522 0

12.8130 0 0.0522

0 7.7320 0

0.0622 0 7.7320

0 -7.9714 0

4.5604 0 -7.9714

0 4.2490 0

-6.8479 0 4.2490

0 -5.8669 0

0.7027 0 -5.8669

0 3.7789 0

0.1058 0 3.7789

0 0.4315 0

-945.0447 0 0.4315

0 -944.4679 0

0.4870 0 -944.4679

ans =

0.0103

0.0103

0.0166

0.0166

0.0175

0.0175

0.0201

0.0201

0.0268

0.0268

0.0345

0.0345

0.0365

0.0365

0.0401

0.0401

0.0587

0.0587

0.0789

0.0789

0.1082

0.1082

0.1441

0.1441

ans =

-0.0002

-0.0002

0.0004

0.0004

0.0014

0.0014

0.0022

0.0022

0.0032

0.0032

0.0074

0.0074

0.0210

0.0210

0.0502

0.0502

0.0865

0.0865

0.1085

0.1085

0.1513

0.1513

0.2218

0.2218

ans =

1.4978

1.4978

1.5078

1.5078

1.5159

1.5159

1.5204

1.5204

1.5210

1.5210

1.5279

1.5279

1.5433

1.5433

1.5631

1.5631

1.5826

1.5826

1.6252

1.6252

1.6625

1.6625

1.7021

1.7021

ans =

0.5234

0.5234

0.5369

0.5369

0.5467

0.5467

0.5482

0.5482

0.5564

0.5564

0.5643

0.5643

0.5888

0.5888

0.6143

0.6143

0.6365

0.6365

0.6742

0.6742

0.7224

0.7224

0.7698

0.7698

2.4514

2.4514

2.4722

2.4722

2.4869

2.4869

2.4913

2.4913

2.4930

2.4930

2.4931

2.4931

2.4986

2.4986

2.5097

2.5097

2.5259

2.5259

2.5866

2.5866

2.6046

2.6046

2.6440

2.6440

历时 175.135231 秒。

>>

## k=5，τ=0.03，三项，矩阵前三个有约束，可行，结果可以的

程序：

% LMI example

clear;clc

tic

n = 6;

tau\_u = 0.03;

K = 5\*eye(6); % 5\*eye(6)

A\_F = [ 0 0 0 0 0 0

1 0 0 0 0 0

0 1 0 1 0 0

0 0 0 0 0 0

0 1 0 0 0 0

1 0 1 0 0 0]; % 跟随者邻接矩阵

A\_LF = [ 1 0 0 1

0 1 0 0

0 0 1 0

0 0 1 1

1 0 0 0

0 0 0 0]; % 领导者和跟随者的耦合邻接矩阵

A = [A\_F,A\_LF];

B = diag(sum(A')); % 跟随者能接受到的领导者信息总和

d = sum(sum(A));

L = -A\_F;

num\_follower = 6;

L1 = L + B;

L2 = -A\_LF;

count=1;

L\_ce = zeros(num\_follower,num\_follower,d);

B\_cell = cell(d,1);

L2\_ce = zeros(num\_follower,4,d);

A\_cell = kron([zeros(num\_follower),eye(num\_follower);zeros(num\_follower),zeros(num\_follower)],eye(2));

for i = 1:num\_follower

for j = 1:num\_follower+4

if A(i,j)==1

L\_ce(i,i,count)=1;

if j<=num\_follower

L\_ce(i,j,count)=-1;

end

if j>num\_follower

L2\_ce(i,j-num\_follower,count)=-1;

end

B\_cell{count}=kron(...

[zeros(num\_follower),zeros(num\_follower);L\_ce(:,:,count),K\*L\_ce(:,:,count)]...

,eye(2));

count = count+1;

end

end

end

%% 初始化

setlmis([])

[P, ~, sP] = lmivar(1, [4\*n 1]); % P是对称矩阵，阶数为2\*n，满块矩阵

Q = lmivar(1, [4\*n 1]);

R = lmivar(1, [4\*n 1]);

S = lmivar(2, [4\*n 4\*n]); % S是矩阵，阶数为2\*n，满块矩阵

lmiterm([1 1 1 P], 1, A\_cell, 's')

lmiterm([1 1 1 Q], 1, 1)

lmiterm([1 1 1 R], tau\_u^2\*A\_cell.', A\_cell)

lmiterm([1 1 1 R], -1, 1)

lmiterm([1 1 2 S], 1, 1)

for i =1:d

lmiterm([1 1 2+i P], -1, B\_cell{i})

lmiterm([1 1 2+i R], -tau\_u^2\*A\_cell.', B\_cell{i})

lmiterm([1 1 2+i R], 1/d, 1)

lmiterm([1 1 2+i S], -1/d, 1)

end

lmiterm([1 2 2 Q], -1, 1)

lmiterm([1 2 2 R], -1, 1)

for i = 1:d

lmiterm([1 2 2+i R], 1/d, 1)

lmiterm([1 2 2+i -S], -1/d, 1)

end

for i = 1:d

lmiterm([1 2+i 2+i R], -1/d, 1, 's')

lmiterm([1 2+i 2+i S], 1/d, 1, 's')

end

for i = 1:d

for j = i:d

lmiterm([1 2+i 2+j R], tau\_u^2\*B\_cell{i}.', B\_cell{j})

end

end

lmiterm([-2,1,1,P],1,1)

lmiterm([2,1,1,0],0)

lmiterm([-3,1,1,Q],1,1)

lmiterm([3,1,1,0],0)

lmiterm([-4,1,1,R],1,1)

lmiterm([5,1,1,0],0)

%

% lmiterm([-5,1,1,R],1,1)

% lmiterm([-5,2,2,R],1,1)

% lmiterm([-5,2,1,S],1,1)

% lmiterm([5,1,1,0],0)

%% 求解

lmis = getlmis;

[tmin, xfeas] = feasp(lmis);%,[0,0,0,0,0],-10^(-10)

%% 结果验证

PP = dec2mat(lmis, xfeas, P);PP\*1000

QQ = dec2mat(lmis, xfeas, Q);QQ\*1000

RR = dec2mat(lmis, xfeas, R);RR\*1000

SS = dec2mat(lmis, xfeas, S);SS\*1000

eig(PP)

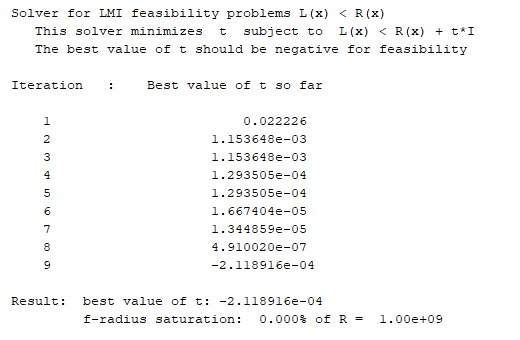
eig(QQ)

eig(RR)

zuhe=[RR,SS.';SS,RR];

eig(zuhe)

toc



Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.022226

2 1.153648e-03

3 1.153648e-03

4 1.293505e-04

5 1.293505e-04

6 1.667404e-05

7 1.344859e-05

8 4.910020e-07

9 -2.118916e-04

Result: best value of t: -2.118916e-04

f-radius saturation: 0.000% of R = 1.00e+09

ans =

1.0e+03 \*

列 1 至 7

1.7280 0 -0.3747 0 0.0981 0 0.0097

0 1.7280 0 -0.3747 0 0.0981 0

-0.3747 0 1.2718 0 -0.3229 0 0.0957

0 -0.3747 0 1.2718 0 -0.3229 0

0.0981 0 -0.3229 0 1.3234 0 -0.3251

0 0.0981 0 -0.3229 0 1.3234 0

0.0097 0 0.0957 0 -0.3251 0 1.4755

0 0.0097 0 0.0957 0 -0.3251 0

-0.0180 0 -0.3826 0 -0.0200 0 0.0063

0 -0.0180 0 -0.3826 0 -0.0200 0

-0.2711 0 -0.0298 0 -0.2852 0 -0.0120

0 -0.2711 0 -0.0298 0 -0.2852 0

0.1216 0 0.0082 0 -0.0013 0 -0.0005

0 0.1216 0 0.0082 0 -0.0013 0

-0.0422 0 0.0833 0 0.0064 0 -0.0012

0 -0.0422 0 0.0833 0 0.0064 0

-0.0024 0 -0.0230 0 0.0706 0 -0.0227

0 -0.0024 0 -0.0230 0 0.0706 0

-0.0006 0 -0.0016 0 0.0067 0 0.1191

0 -0.0006 0 -0.0016 0 0.0067 0

-0.0017 0 -0.0399 0 -0.0012 0 0.0007

0 -0.0017 0 -0.0399 0 -0.0012 0

-0.0281 0 -0.0021 0 -0.0307 0 -0.0012

0 -0.0281 0 -0.0021 0 -0.0307 0

列 8 至 14

0 -0.0180 0 -0.2711 0 0.1216 0

0.0097 0 -0.0180 0 -0.2711 0 0.1216

0 -0.3826 0 -0.0298 0 0.0082 0

0.0957 0 -0.3826 0 -0.0298 0 0.0082

0 -0.0200 0 -0.2852 0 -0.0013 0

-0.3251 0 -0.0200 0 -0.2852 0 -0.0013

0 0.0063 0 -0.0120 0 -0.0005 0

1.4755 0 0.0063 0 -0.0120 0 -0.0005

0 0.9168 0 -0.0019 0 0.0014 0

0.0063 0 0.9168 0 -0.0019 0 0.0014

0 -0.0019 0 0.7057 0 0.0071 0

-0.0120 0 -0.0019 0 0.7057 0 0.0071

0 0.0014 0 0.0071 0 0.6018 0

-0.0005 0 0.0014 0 0.0071 0 0.6018

0 0.0070 0 0.0001 0 -0.0413 0

-0.0012 0 0.0070 0 0.0001 0 -0.0413

0 -0.0004 0 0.0038 0 0.0101 0

-0.0227 0 -0.0004 0 0.0038 0 0.0101

0 -0.0002 0 0.0010 0 0.0037 0

0.1191 0 -0.0002 0 0.0010 0 0.0037

0 0.0797 0 0.0001 0 -0.0018 0

0.0007 0 0.0797 0 0.0001 0 -0.0018

0 0.0002 0 0.0611 0 -0.0339 0

-0.0012 0 0.0002 0 0.0611 0 -0.0339

列 15 至 21

-0.0422 0 -0.0024 0 -0.0006 0 -0.0017

0 -0.0422 0 -0.0024 0 -0.0006 0

0.0833 0 -0.0230 0 -0.0016 0 -0.0399

0 0.0833 0 -0.0230 0 -0.0016 0

0.0064 0 0.0706 0 0.0067 0 -0.0012

0 0.0064 0 0.0706 0 0.0067 0

-0.0012 0 -0.0227 0 0.1191 0 0.0007

0 -0.0012 0 -0.0227 0 0.1191 0

0.0070 0 -0.0004 0 -0.0002 0 0.0797

0 0.0070 0 -0.0004 0 -0.0002 0

0.0001 0 0.0038 0 0.0010 0 0.0001

0 0.0001 0 0.0038 0 0.0010 0

-0.0413 0 0.0101 0 0.0037 0 -0.0018

0 -0.0413 0 0.0101 0 0.0037 0

0.4027 0 -0.0457 0 0.0159 0 -0.0465

0 0.4027 0 -0.0457 0 0.0159 0

-0.0457 0 0.2840 0 -0.0441 0 -0.0201

0 -0.0457 0 0.2840 0 -0.0441 0

0.0159 0 -0.0441 0 0.5467 0 0.0013

0 0.0159 0 -0.0441 0 0.5467 0

-0.0465 0 -0.0201 0 0.0013 0 0.3244

0 -0.0465 0 -0.0201 0 0.0013 0

-0.0239 0 -0.0140 0 -0.0041 0 -0.0095

0 -0.0239 0 -0.0140 0 -0.0041 0

列 22 至 24

0 -0.0281 0

-0.0017 0 -0.0281

0 -0.0021 0

-0.0399 0 -0.0021

0 -0.0307 0

-0.0012 0 -0.0307

0 -0.0012 0

0.0007 0 -0.0012

0 0.0002 0

0.0797 0 0.0002

0 0.0611 0

0.0001 0 0.0611

0 -0.0339 0

-0.0018 0 -0.0339

0 -0.0239 0

-0.0465 0 -0.0239

0 -0.0140 0

-0.0201 0 -0.0140

0 -0.0041 0

0.0013 0 -0.0041

0 -0.0095 0

0.3244 0 -0.0095

0 0.2364 0

-0.0095 0 0.2364

ans =

1.0e+03 \*

列 1 至 7

0.6134 0 -0.0866 0 0.0215 0 0.0040

0 0.6134 0 -0.0866 0 0.0215 0

-0.0866 0 0.5069 0 -0.0741 0 0.0207

0 -0.0866 0 0.5069 0 -0.0741 0

0.0215 0 -0.0741 0 0.5229 0 -0.0758

0 0.0215 0 -0.0741 0 0.5229 0

0.0040 0 0.0207 0 -0.0758 0 0.5564

0 0.0040 0 0.0207 0 -0.0758 0

-0.0046 0 -0.0920 0 -0.0042 0 0.0021

0 -0.0046 0 -0.0920 0 -0.0042 0

-0.0635 0 -0.0062 0 -0.0694 0 -0.0029

0 -0.0635 0 -0.0062 0 -0.0694 0

-0.4566 0 0.1034 0 -0.0200 0 -0.0020

0 -0.4566 0 0.1034 0 -0.0200 0

0.0634 0 -0.3504 0 0.0835 0 -0.0175

0 0.0634 0 -0.3504 0 0.0835 0

-0.0190 0 0.0495 0 -0.3663 0 0.0544

0 -0.0190 0 0.0495 0 -0.3663 0

-0.0014 0 -0.0181 0 0.0873 0 -0.4149

0 -0.0014 0 -0.0181 0 0.0873 0

-0.0002 0 0.0750 0 0.0111 0 -0.0047

0 -0.0002 0 0.0750 0 0.0111 0

0.0397 0 0.0112 0 0.0534 0 0.0020

0 0.0397 0 0.0112 0 0.0534 0

列 8 至 14

0 -0.0046 0 -0.0635 0 -0.4566 0

0.0040 0 -0.0046 0 -0.0635 0 -0.4566

0 -0.0920 0 -0.0062 0 0.1034 0

0.0207 0 -0.0920 0 -0.0062 0 0.1034

0 -0.0042 0 -0.0694 0 -0.0200 0

-0.0758 0 -0.0042 0 -0.0694 0 -0.0200

0 0.0021 0 -0.0029 0 -0.0020 0

0.5564 0 0.0021 0 -0.0029 0 -0.0020

0 0.4260 0 0.0008 0 -0.0054 0

0.0021 0 0.4260 0 0.0008 0 -0.0054

0 0.0008 0 0.3766 0 0.0649 0

-0.0029 0 0.0008 0 0.3766 0 0.0649

0 -0.0054 0 0.0649 0 2.6699 0

-0.0020 0 -0.0054 0 0.0649 0 2.6699

0 0.1052 0 0.0062 0 -0.4436 0

-0.0175 0 0.1052 0 0.0062 0 -0.4436

0 0.0138 0 0.0861 0 0.1247 0

0.0544 0 0.0138 0 0.0861 0 0.1247

0 -0.0058 0 -0.0011 0 -0.0245 0

-0.4149 0 -0.0058 0 -0.0011 0 -0.0245

0 -0.2747 0 0.0012 0 0.0473 0

-0.0047 0 -0.2747 0 0.0012 0 0.0473

0 0.0017 0 -0.2243 0 -0.2255 0

0.0020 0 0.0017 0 -0.2243 0 -0.2255

列 15 至 21

0.0634 0 -0.0190 0 -0.0014 0 -0.0002

0 0.0634 0 -0.0190 0 -0.0014 0

-0.3504 0 0.0495 0 -0.0181 0 0.0750

0 -0.3504 0 0.0495 0 -0.0181 0

0.0835 0 -0.3663 0 0.0873 0 0.0111

0 0.0835 0 -0.3663 0 0.0873 0

-0.0175 0 0.0544 0 -0.4149 0 -0.0047

0 -0.0175 0 0.0544 0 -0.4149 0

0.1052 0 0.0138 0 -0.0058 0 -0.2747

0 0.1052 0 0.0138 0 -0.0058 0

0.0062 0 0.0861 0 -0.0011 0 0.0012

0 0.0062 0 0.0861 0 -0.0011 0

-0.4436 0 0.1247 0 -0.0245 0 0.0473

0 -0.4436 0 0.1247 0 -0.0245 0

2.1333 0 -0.3767 0 0.1265 0 -0.4260

0 2.1333 0 -0.3767 0 0.1265 0

-0.3767 0 2.2035 0 -0.3857 0 -0.1075

0 -0.3767 0 2.2035 0 -0.3857 0

0.1265 0 -0.3857 0 2.4887 0 0.0298

0 0.1265 0 -0.3857 0 2.4887 0

-0.4260 0 -0.1075 0 0.0298 0 1.7058

0 -0.4260 0 -0.1075 0 0.0298 0

-0.0716 0 -0.3530 0 0.0064 0 -0.0540

0 -0.0716 0 -0.3530 0 0.0064 0

列 22 至 24

0 0.0397 0

-0.0002 0 0.0397

0 0.0112 0

0.0750 0 0.0112

0 0.0534 0

0.0111 0 0.0534

0 0.0020 0

-0.0047 0 0.0020

0 0.0017 0

-0.2747 0 0.0017

0 -0.2243 0

0.0012 0 -0.2243

0 -0.2255 0

0.0473 0 -0.2255

0 -0.0716 0

-0.4260 0 -0.0716

0 -0.3530 0

-0.1075 0 -0.3530

0 0.0064 0

0.0298 0 0.0064

0 -0.0540 0

1.7058 0 -0.0540

0 1.4222 0

-0.0540 0 1.4222

ans =

1.0e+04 \*

列 1 至 7

1.2369 0 -0.0015 0 0.0007 0 0.0004

0 1.2369 0 -0.0015 0 0.0007 0

-0.0015 0 1.2366 0 0.0001 0 0.0000

0 -0.0015 0 1.2366 0 0.0001 0

0.0007 0 0.0001 0 1.2339 0 -0.0017

0 0.0007 0 0.0001 0 1.2339 0

0.0004 0 0.0000 0 -0.0017 0 1.2333

0 0.0004 0 0.0000 0 -0.0017 0

0.0010 0 0.0003 0 0.0015 0 0.0001

0 0.0010 0 0.0003 0 0.0015 0

-0.0002 0 0.0026 0 0.0008 0 0.0008

0 -0.0002 0 0.0026 0 0.0008 0

0.1763 0 -0.0222 0 0.0029 0 0.0003

0 0.1763 0 -0.0222 0 0.0029 0

-0.0376 0 0.1425 0 -0.0170 0 0.0033

0 -0.0376 0 0.1425 0 -0.0170 0

0.0007 0 -0.0321 0 0.1324 0 -0.0305

0 0.0007 0 -0.0321 0 0.1324 0

0.0004 0 0.0036 0 -0.0186 0 0.1504

0 0.0004 0 0.0036 0 -0.0186 0

-0.0025 0 -0.0387 0 -0.0027 0 0.0006

0 -0.0025 0 -0.0387 0 -0.0027 0

-0.0285 0 -0.0041 0 -0.0334 0 -0.0021

0 -0.0285 0 -0.0041 0 -0.0334 0

列 8 至 14

0 0.0010 0 -0.0002 0 0.1763 0

0.0004 0 0.0010 0 -0.0002 0 0.1763

0 0.0003 0 0.0026 0 -0.0222 0

0.0000 0 0.0003 0 0.0026 0 -0.0222

0 0.0015 0 0.0008 0 0.0029 0

-0.0017 0 0.0015 0 0.0008 0 0.0029

0 0.0001 0 0.0008 0 0.0003 0

1.2333 0 0.0001 0 0.0008 0 0.0003

0 1.2318 0 0.0015 0 -0.0017 0

0.0001 0 1.2318 0 0.0015 0 -0.0017

0 0.0015 0 1.2342 0 -0.0164 0

0.0008 0 0.0015 0 1.2342 0 -0.0164

0 -0.0017 0 -0.0164 0 1.7091 0

0.0003 0 -0.0017 0 -0.0164 0 1.7091

0 -0.0221 0 -0.0033 0 -0.0805 0

0.0033 0 -0.0221 0 -0.0033 0 -0.0805

0 -0.0015 0 -0.0146 0 0.0013 0

-0.0305 0 -0.0015 0 -0.0146 0 0.0013

0 0.0004 0 -0.0014 0 0.0012 0

0.1504 0 0.0004 0 -0.0014 0 0.0012

0 0.0984 0 -0.0007 0 -0.0060 0

0.0006 0 0.0984 0 -0.0007 0 -0.0060

0 -0.0004 0 0.0810 0 -0.0601 0

-0.0021 0 -0.0004 0 0.0810 0 -0.0601

列 15 至 21

-0.0376 0 0.0007 0 0.0004 0 -0.0025

0 -0.0376 0 0.0007 0 0.0004 0

0.1425 0 -0.0321 0 0.0036 0 -0.0387

0 0.1425 0 -0.0321 0 0.0036 0

-0.0170 0 0.1324 0 -0.0186 0 -0.0027

0 -0.0170 0 0.1324 0 -0.0186 0

0.0033 0 -0.0305 0 0.1504 0 0.0006

0 0.0033 0 -0.0305 0 0.1504 0

-0.0221 0 -0.0015 0 0.0004 0 0.0984

0 -0.0221 0 -0.0015 0 0.0004 0

-0.0033 0 -0.0146 0 -0.0014 0 -0.0007

0 -0.0033 0 -0.0146 0 -0.0014 0

-0.0805 0 0.0013 0 0.0012 0 -0.0060

0 -0.0805 0 0.0013 0 0.0012 0

1.5988 0 -0.0700 0 0.0079 0 -0.0805

0 1.5988 0 -0.0700 0 0.0079 0

-0.0700 0 1.4710 0 -0.0683 0 -0.0144

0 -0.0700 0 1.4710 0 -0.0683 0

0.0079 0 -0.0683 0 1.6069 0 0.0004

0 0.0079 0 -0.0683 0 1.6069 0

-0.0805 0 -0.0144 0 0.0004 0 1.4198

0 -0.0805 0 -0.0144 0 0.0004 0

-0.0131 0 -0.0521 0 -0.0033 0 -0.0029

0 -0.0131 0 -0.0521 0 -0.0033 0

列 22 至 24

0 -0.0285 0

-0.0025 0 -0.0285

0 -0.0041 0

-0.0387 0 -0.0041

0 -0.0334 0

-0.0027 0 -0.0334

0 -0.0021 0

0.0006 0 -0.0021

0 -0.0004 0

0.0984 0 -0.0004

0 0.0810 0

-0.0007 0 0.0810

0 -0.0601 0

-0.0060 0 -0.0601

0 -0.0131 0

-0.0805 0 -0.0131

0 -0.0521 0

-0.0144 0 -0.0521

0 -0.0033 0

0.0004 0 -0.0033

0 -0.0029 0

1.4198 0 -0.0029

0 1.3494 0

-0.0029 0 1.3494

ans =

1.0e+03 \*

列 1 至 7

-6.8829 0 0.0707 0 0.0105 0 0.0029

0 -6.8829 0 0.0707 0 0.0105 0

0.0470 0 -6.8020 0 0.0735 0 -0.0015

0 0.0470 0 -6.8020 0 0.0735 0

0.0087 0 0.0428 0 -6.7808 0 0.0272

0 0.0087 0 0.0428 0 -6.7808 0

0.0036 0 -0.0014 0 0.0518 0 -6.8447

0 0.0036 0 -0.0014 0 0.0518 0

0.0172 0 0.0647 0 0.0198 0 0.0016

0 0.0172 0 0.0647 0 0.0198 0

0.0436 0 0.0346 0 0.0606 0 0.0114

0 0.0436 0 0.0346 0 0.0606 0

0.8460 0 -0.0105 0 0.0282 0 0.0071

0 0.8460 0 -0.0105 0 0.0282 0

-0.1071 0 0.7474 0 -0.0171 0 0.0361

0 -0.1071 0 0.7474 0 -0.0171 0

0.0209 0 -0.1235 0 0.9365 0 -0.1034

0 0.0209 0 -0.1235 0 0.9365 0

0.0088 0 0.0393 0 -0.0233 0 0.9437

0 0.0088 0 0.0393 0 -0.0233 0

-0.0245 0 -0.1763 0 -0.0257 0 0.0128

0 -0.0245 0 -0.1763 0 -0.0257 0

-0.1085 0 -0.0384 0 -0.1357 0 -0.0186

0 -0.1085 0 -0.0384 0 -0.1357 0

列 8 至 14

0 0.0157 0 0.0649 0 -0.5274 0

0.0029 0 0.0157 0 0.0649 0 -0.5274

0 0.0962 0 0.0376 0 0.1206 0

-0.0015 0 0.0962 0 0.0376 0 0.1206

0 0.0238 0 0.0837 0 0.0515 0

0.0272 0 0.0238 0 0.0837 0 0.0515

0 -0.0007 0 0.0121 0 -0.0003 0

-6.8447 0 -0.0007 0 0.0121 0 -0.0003

0 -6.7196 0 0.0166 0 0.0118 0

0.0016 0 -6.7196 0 0.0166 0 0.0118

0 0.0174 0 -6.6502 0 0.0947 0

0.0114 0 0.0174 0 -6.6502 0 0.0947

0 -0.0261 0 -0.0286 0 -9.5518 0

0.0071 0 -0.0261 0 -0.0286 0 -9.5518

0 -0.0496 0 -0.0338 0 1.0398 0

0.0361 0 -0.0496 0 -0.0338 0 1.0398

0 -0.0143 0 -0.0336 0 0.1804 0

-0.1034 0 -0.0143 0 -0.0336 0 0.1804

0 0.0040 0 -0.0175 0 0.0186 0

0.9437 0 0.0040 0 -0.0175 0 0.0186

0 0.9232 0 -0.0034 0 -0.0271 0

0.0128 0 0.9232 0 -0.0034 0 -0.0271

0 -0.0018 0 0.8409 0 0.7075 0

-0.0186 0 -0.0018 0 0.8409 0 0.7075

列 15 至 21

-0.0209 0 0.0312 0 0.0005 0 0.0068

0 -0.0209 0 0.0312 0 0.0005 0

-0.4593 0 -0.0468 0 0.0440 0 0.0084

0 -0.4593 0 -0.0468 0 0.0440 0

0.0575 0 -0.3033 0 0.0465 0 0.0014

0 0.0575 0 -0.3033 0 0.0465 0

0.0413 0 -0.0491 0 -0.4501 0 0.0004

0 0.0413 0 -0.0491 0 -0.4501 0

0.1205 0 0.0035 0 0.0049 0 -0.3263

0 0.1205 0 0.0035 0 0.0049 0

-0.0035 0 0.1459 0 -0.0002 0 -0.0064

0 -0.0035 0 0.1459 0 -0.0002 0

0.1820 0 0.0780 0 0.0242 0 -0.0394

0 0.1820 0 0.0780 0 0.0242 0

-8.8545 0 -0.0957 0 0.1714 0 0.1340

0 -8.8545 0 -0.0957 0 0.1714 0

0.6228 0 -7.9173 0 0.5950 0 -0.0144

0 0.6228 0 -7.9173 0 0.5950 0

0.1710 0 -0.0588 0 -8.8736 0 0.0104

0 0.1710 0 -0.0588 0 -8.8736 0

0.9032 0 0.0155 0 0.0173 0 -7.7906

0 0.9032 0 0.0155 0 0.0173 0

-0.0674 0 0.9741 0 -0.0424 0 -0.0260

0 -0.0674 0 0.9741 0 -0.0424 0

列 22 至 24

0 -0.0055 0

0.0068 0 -0.0055

0 0.0079 0

0.0084 0 0.0079

0 -0.0001 0

0.0014 0 -0.0001

0 0.0013 0

0.0004 0 0.0013

0 -0.0023 0

-0.3263 0 -0.0023

0 -0.2839 0

-0.0064 0 -0.2839

0 0.0785 0

-0.0394 0 0.0785

0 -0.0230 0

0.1340 0 -0.0230

0 0.0555 0

-0.0144 0 0.0555

0 -0.0401 0

0.0104 0 -0.0401

0 -0.0060 0

-7.7906 0 -0.0060

0 -7.4738 0

-0.0260 0 -7.4738

ans =

0.2033

0.2033

0.2584

0.2584

0.3137

0.3137

0.3966

0.3966

0.4427

0.4427

0.5426

0.5426

0.6052

0.6052

0.7058

0.7058

1.1329

1.1329

1.3441

1.3441

1.6989

1.6989

2.1729

2.1729

ans =

0.2784

0.2784

0.3281

0.3281

0.4064

0.4064

0.4448

0.4448

0.5105

0.5105

0.5979

0.5979

1.1179

1.1179

1.5525

1.5525

2.0932

2.0932

2.2245

2.2245

2.7603

2.7603

3.3111

3.3111

ans =

11.6211

11.6211

11.7426

11.7426

11.7841

11.7841

11.8260

11.8260

11.9428

11.9428

12.0641

12.0641

13.4095

13.4095

14.2442

14.2442

15.1588

15.1588

16.4095

16.4095

17.0609

17.0609

18.3536

18.3536

ans =

3.9660

3.9660

4.2193

4.2193

4.3779

4.3779

4.4462

4.4462

4.8201

4.8201

5.0756

5.0756

6.6952

6.6952

7.1025

7.1025

7.5362

7.5362

8.0195

8.0195

8.6098

8.6098

9.1474

9.1474

18.8551

18.8551

18.8959

18.8959

18.9060

18.9060

18.9446

18.9446

18.9619

18.9619

18.9760

18.9760

20.2546

20.2546

21.5858

21.5858

23.0114

23.0114

25.0733

25.0733

25.6870

25.6870

28.0672

28.0672

历时 542.016219 秒。

>>

## k=0.3，τ=0.03，可行

>> LMI

tau\_u =

0.0300

K =

0.3000 0 0 0 0 0

0 0.3000 0 0 0 0

0 0 0.3000 0 0 0

0 0 0 0.3000 0 0

0 0 0 0 0.3000 0

0 0 0 0 0 0.3000

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.026955

2 1.154534e-03

3 1.154534e-03

4 1.823228e-04

5 1.823228e-04

6 2.574178e-05

7 2.574178e-05

8 4.905642e-06

9 4.905642e-06

10 2.780790e-06

11 2.780790e-06

12 2.780790e-06

13 5.913477e-07

14 -1.949876e-07

Result: best value of t: -1.949876e-07

f-radius saturation: 0.000% of R = 1.00e+09

ans =

列 1 至 7

11.4179 0 -1.6275 0 0.7461 0 0.1172

0 11.4179 0 -1.6275 0 0.7461 0

-1.6275 0 7.0671 0 -1.9043 0 1.2468

0 -1.6275 0 7.0671 0 -1.9043 0

0.7461 0 -1.9043 0 5.6327 0 -1.9462

0 0.7461 0 -1.9043 0 5.6327 0

0.1172 0 1.2468 0 -1.9462 0 8.0805

0 0.1172 0 1.2468 0 -1.9462 0

0.0348 0 -1.0191 0 -0.3960 0 0.0815

0 0.0348 0 -1.0191 0 -0.3960 0

-0.6518 0 -0.5060 0 -0.1660 0 -0.2397

0 -0.6518 0 -0.5060 0 -0.1660 0

0.1683 0 1.0731 0 0.1474 0 -0.1090

0 0.1683 0 1.0731 0 0.1474 0

-1.4653 0 0.0806 0 0.7849 0 -0.0896

0 -1.4653 0 0.0806 0 0.7849 0

-0.1949 0 -0.8105 0 0.2955 0 -0.7218

0 -0.1949 0 -0.8105 0 0.2955 0

-0.0165 0 -0.0893 0 0.6257 0 0.3600

0 -0.0165 0 -0.0893 0 0.6257 0

0.3016 0 -1.0656 0 -0.1012 0 0.2305

0 0.3016 0 -1.0656 0 -0.1012 0

-0.4986 0 0.0651 0 -0.8021 0 -0.1062

0 -0.4986 0 0.0651 0 -0.8021 0

列 8 至 14

0 0.0348 0 -0.6518 0 0.1683 0

0.1172 0 0.0348 0 -0.6518 0 0.1683

0 -1.0191 0 -0.5060 0 1.0731 0

1.2468 0 -1.0191 0 -0.5060 0 1.0731

0 -0.3960 0 -0.1660 0 0.1474 0

-1.9462 0 -0.3960 0 -0.1660 0 0.1474

0 0.0815 0 -0.2397 0 -0.1090 0

8.0805 0 0.0815 0 -0.2397 0 -0.1090

0 2.4755 0 -0.6241 0 -0.1051 0

0.0815 0 2.4755 0 -0.6241 0 -0.1051

0 -0.6241 0 1.7512 0 0.4135 0

-0.2397 0 -0.6241 0 1.7512 0 0.4135

0 -0.1051 0 0.4135 0 5.4492 0

-0.1090 0 -0.1051 0 0.4135 0 5.4492

0 0.8846 0 0.0433 0 -0.1115 0

-0.0896 0 0.8846 0 0.0433 0 -0.1115

0 0.1208 0 0.5480 0 0.2406 0

-0.7218 0 0.1208 0 0.5480 0 0.2406

0 -0.2131 0 0.1967 0 0.1200 0

0.3600 0 -0.2131 0 0.1967 0 0.1200

0 0.2665 0 -0.0343 0 -0.0128 0

0.2305 0 0.2665 0 -0.0343 0 -0.0128

0 -0.0279 0 0.2021 0 -0.0961 0

-0.1062 0 -0.0279 0 0.2021 0 -0.0961

列 15 至 21

-1.4653 0 -0.1949 0 -0.0165 0 0.3016

0 -1.4653 0 -0.1949 0 -0.0165 0

0.0806 0 -0.8105 0 -0.0893 0 -1.0656

0 0.0806 0 -0.8105 0 -0.0893 0

0.7849 0 0.2955 0 0.6257 0 -0.1012

0 0.7849 0 0.2955 0 0.6257 0

-0.0896 0 -0.7218 0 0.3600 0 0.2305

0 -0.0896 0 -0.7218 0 0.3600 0

0.8846 0 0.1208 0 -0.2131 0 0.2665

0 0.8846 0 0.1208 0 -0.2131 0

0.0433 0 0.5480 0 0.1967 0 -0.0343

0 0.0433 0 0.5480 0 0.1967 0

-0.1115 0 0.2406 0 0.1200 0 -0.0128

0 -0.1115 0 0.2406 0 0.1200 0

3.0687 0 -0.4245 0 0.3758 0 -0.1623

0 3.0687 0 -0.4245 0 0.3758 0

-0.4245 0 1.8326 0 -0.4112 0 -0.2265

0 -0.4245 0 1.8326 0 -0.4112 0

0.3758 0 -0.4112 0 3.9094 0 0.0051

0 0.3758 0 -0.4112 0 3.9094 0

-0.1623 0 -0.2265 0 0.0051 0 1.2331

0 -0.1623 0 -0.2265 0 0.0051 0

-0.2772 0 0.1200 0 -0.0680 0 -0.3519

0 -0.2772 0 0.1200 0 -0.0680 0

列 22 至 24

0 -0.4986 0

0.3016 0 -0.4986

0 0.0651 0

-1.0656 0 0.0651

0 -0.8021 0

-0.1012 0 -0.8021

0 -0.1062 0

0.2305 0 -0.1062

0 -0.0279 0

0.2665 0 -0.0279

0 0.2021 0

-0.0343 0 0.2021

0 -0.0961 0

-0.0128 0 -0.0961

0 -0.2772 0

-0.1623 0 -0.2772

0 0.1200 0

-0.2265 0 0.1200

0 -0.0680 0

0.0051 0 -0.0680

0 -0.3519 0

1.2331 0 -0.3519

0 0.8984 0

-0.3519 0 0.8984

ans =

列 1 至 7

4.2292 0 -0.5996 0 0.2971 0 0.0361

0 4.2292 0 -0.5996 0 0.2971 0

-0.5996 0 3.2737 0 -0.7611 0 0.4875

0 -0.5996 0 3.2737 0 -0.7611 0

0.2971 0 -0.7611 0 3.0714 0 -0.7514

0 0.2971 0 -0.7611 0 3.0714 0

0.0361 0 0.4875 0 -0.7514 0 3.2721

0 0.0361 0 0.4875 0 -0.7514 0

-0.0160 0 -0.5799 0 -0.1074 0 0.0236

0 -0.0160 0 -0.5799 0 -0.1074 0

-0.2605 0 -0.1998 0 -0.3050 0 -0.1051

0 -0.2605 0 -0.1998 0 -0.3050 0

-1.4114 0 1.0700 0 -0.1091 0 0.0115

0 -1.4114 0 1.0700 0 -0.1091 0

-0.6502 0 -0.8613 0 0.9642 0 -0.2387

0 -0.6502 0 -0.8613 0 0.9642 0

-0.2068 0 -0.2352 0 -0.7288 0 -0.1864

0 -0.2068 0 -0.2352 0 -0.7288 0

-0.0102 0 -0.2151 0 0.8375 0 -0.9702

0 -0.0102 0 -0.2151 0 0.8375 0

0.1378 0 -0.4817 0 0.0234 0 0.1053

0 0.1378 0 -0.4817 0 0.0234 0

-0.2299 0 0.0587 0 -0.4839 0 -0.0571

0 -0.2299 0 0.0587 0 -0.4839 0

列 8 至 14

0 -0.0160 0 -0.2605 0 -1.4114 0

0.0361 0 -0.0160 0 -0.2605 0 -1.4114

0 -0.5799 0 -0.1998 0 1.0700 0

0.4875 0 -0.5799 0 -0.1998 0 1.0700

0 -0.1074 0 -0.3050 0 -0.1091 0

-0.7514 0 -0.1074 0 -0.3050 0 -0.1091

0 0.0236 0 -0.1051 0 0.0115 0

3.2721 0 0.0236 0 -0.1051 0 0.0115

0 1.4899 0 -0.2736 0 -0.1726 0

0.0236 0 1.4899 0 -0.2736 0 -0.1726

0 -0.2736 0 1.1931 0 0.4439 0

-0.1051 0 -0.2736 0 1.1931 0 0.4439

0 -0.1726 0 0.4439 0 2.5911 0

0.0115 0 -0.1726 0 0.4439 0 2.5911

0 0.7635 0 0.0411 0 -0.1576 0

-0.2387 0 0.7635 0 0.0411 0 -0.1576

0 0.1723 0 0.5483 0 0.2500 0

-0.1864 0 0.1723 0 0.5483 0 0.2500

0 -0.1535 0 0.0944 0 -0.0154 0

-0.9702 0 -0.1535 0 0.0944 0 -0.0154

0 -0.1943 0 0.0731 0 0.0315 0

0.1053 0 -0.1943 0 0.0731 0 0.0315

0 0.0853 0 -0.1208 0 0.0082 0

-0.0571 0 0.0853 0 -0.1208 0 0.0082

列 15 至 21

-0.6502 0 -0.2068 0 -0.0102 0 0.1378

0 -0.6502 0 -0.2068 0 -0.0102 0

-0.8613 0 -0.2352 0 -0.2151 0 -0.4817

0 -0.8613 0 -0.2352 0 -0.2151 0

0.9642 0 -0.7288 0 0.8375 0 0.0234

0 0.9642 0 -0.7288 0 0.8375 0

-0.2387 0 -0.1864 0 -0.9702 0 0.1053

0 -0.2387 0 -0.1864 0 -0.9702 0

0.7635 0 0.1723 0 -0.1535 0 -0.1943

0 0.7635 0 0.1723 0 -0.1535 0

0.0411 0 0.5483 0 0.0944 0 0.0731

0 0.0411 0 0.5483 0 0.0944 0

-0.1576 0 0.2500 0 -0.0154 0 0.0315

0 -0.1576 0 0.2500 0 -0.0154 0

1.8535 0 -0.2949 0 0.2671 0 -0.0840

0 1.8535 0 -0.2949 0 0.2671 0

-0.2949 0 1.3804 0 -0.3102 0 -0.1558

0 -0.2949 0 1.3804 0 -0.3102 0

0.2671 0 -0.3102 0 2.1477 0 0.0109

0 0.2671 0 -0.3102 0 2.1477 0

-0.0840 0 -0.1558 0 0.0109 0 0.7612

0 -0.0840 0 -0.1558 0 0.0109 0

-0.1513 0 0.0319 0 -0.0405 0 -0.2567

0 -0.1513 0 0.0319 0 -0.0405 0

列 22 至 24

0 -0.2299 0

0.1378 0 -0.2299

0 0.0587 0

-0.4817 0 0.0587

0 -0.4839 0

0.0234 0 -0.4839

0 -0.0571 0

0.1053 0 -0.0571

0 0.0853 0

-0.1943 0 0.0853

0 -0.1208 0

0.0731 0 -0.1208

0 0.0082 0

0.0315 0 0.0082

0 -0.1513 0

-0.0840 0 -0.1513

0 0.0319 0

-0.1558 0 0.0319

0 -0.0405 0

0.0109 0 -0.0405

0 -0.2567 0

0.7612 0 -0.2567

0 0.6181 0

-0.2567 0 0.6181

ans =

列 1 至 7

70.1624 0 -3.4724 0 -0.1850 0 0.1461

0 70.1624 0 -3.4724 0 -0.1850 0

-3.4724 0 58.1359 0 -2.7882 0 0.4565

0 -3.4724 0 58.1359 0 -2.7882 0

-0.1850 0 -2.7882 0 52.5880 0 -2.3647

0 -0.1850 0 -2.7882 0 52.5880 0

0.1461 0 0.4565 0 -2.3647 0 59.4228

0 0.1461 0 0.4565 0 -2.3647 0

0.1211 0 -2.3852 0 -1.0506 0 0.0931

0 0.1211 0 -2.3852 0 -1.0506 0

-1.3232 0 -0.8509 0 -1.9547 0 -0.1359

0 -1.3232 0 -0.8509 0 -1.9547 0

12.6204 0 -1.4101 0 0.5272 0 -0.0041

0 12.6204 0 -1.4101 0 0.5272 0

-1.2113 0 7.8882 0 -0.8856 0 0.5261

0 -1.2113 0 7.8882 0 -0.8856 0

-0.1688 0 -1.5984 0 5.6929 0 -1.1650

0 -0.1688 0 -1.5984 0 5.6929 0

0.1275 0 0.5942 0 -1.2458 0 8.4291

0 0.1275 0 0.5942 0 -1.2458 0

-0.7250 0 -2.1244 0 -1.0458 0 -0.1293

0 -0.7250 0 -2.1244 0 -1.0458 0

-1.1275 0 -1.4569 0 -1.4468 0 -0.4136

0 -1.1275 0 -1.4569 0 -1.4468 0

列 8 至 14

0 0.1211 0 -1.3232 0 12.6204 0

0.1461 0 0.1211 0 -1.3232 0 12.6204

0 -2.3852 0 -0.8509 0 -1.4101 0

0.4565 0 -2.3852 0 -0.8509 0 -1.4101

0 -1.0506 0 -1.9547 0 0.5272 0

-2.3647 0 -1.0506 0 -1.9547 0 0.5272

0 0.0931 0 -0.1359 0 -0.0041 0

59.4228 0 0.0931 0 -0.1359 0 -0.0041

0 47.4440 0 -1.7469 0 0.4901 0

0.0931 0 47.4440 0 -1.7469 0 0.4901

0 -1.7469 0 45.8057 0 -0.1196 0

-0.1359 0 -1.7469 0 45.8057 0 -0.1196

0 0.4901 0 -0.1196 0 47.6383 0

-0.0041 0 0.4901 0 -0.1196 0 47.6383

0 0.7347 0 0.8893 0 -0.5208 0

0.5261 0 0.7347 0 0.8893 0 -0.5208

0 0.5893 0 0.9373 0 0.1639 0

-1.1650 0 0.5893 0 0.9373 0 0.1639

0 0.2248 0 0.1907 0 -0.0354 0

8.4291 0 0.2248 0 0.1907 0 -0.0354

0 3.5740 0 -0.2005 0 0.4870 0

-0.1293 0 3.5740 0 -0.2005 0 0.4870

0 -0.2525 0 3.0136 0 0.1483 0

-0.4136 0 -0.2525 0 3.0136 0 0.1483

列 15 至 21

-1.2113 0 -0.1688 0 0.1275 0 -0.7250

0 -1.2113 0 -0.1688 0 0.1275 0

7.8882 0 -1.5984 0 0.5942 0 -2.1244

0 7.8882 0 -1.5984 0 0.5942 0

-0.8856 0 5.6929 0 -1.2458 0 -1.0458

0 -0.8856 0 5.6929 0 -1.2458 0

0.5261 0 -1.1650 0 8.4291 0 -0.1293

0 0.5261 0 -1.1650 0 8.4291 0

0.7347 0 0.5893 0 0.2248 0 3.5740

0 0.7347 0 0.5893 0 0.2248 0

0.8893 0 0.9373 0 0.1907 0 -0.2005

0 0.8893 0 0.9373 0 0.1907 0

-0.5208 0 0.1639 0 -0.0354 0 0.4870

0 -0.5208 0 0.1639 0 -0.0354 0

44.2935 0 -1.6787 0 0.1689 0 -1.0658

0 44.2935 0 -1.6787 0 0.1689 0

-1.6787 0 43.1120 0 -0.6736 0 -1.8125

0 -1.6787 0 43.1120 0 -0.6736 0

0.1689 0 -0.6736 0 46.1575 0 -0.0044

0 0.1689 0 -0.6736 0 46.1575 0

-1.0658 0 -1.8125 0 -0.0044 0 40.9552

0 -1.0658 0 -1.8125 0 -0.0044 0

-0.8840 0 -1.2405 0 0.1541 0 -2.6410

0 -0.8840 0 -1.2405 0 0.1541 0

列 22 至 24

0 -1.1275 0

-0.7250 0 -1.1275

0 -1.4569 0

-2.1244 0 -1.4569

0 -1.4468 0

-1.0458 0 -1.4468

0 -0.4136 0

-0.1293 0 -0.4136

0 -0.2525 0

3.5740 0 -0.2525

0 3.0136 0

-0.2005 0 3.0136

0 0.1483 0

0.4870 0 0.1483

0 -0.8840 0

-1.0658 0 -0.8840

0 -1.2405 0

-1.8125 0 -1.2405

0 0.1541 0

-0.0044 0 0.1541

0 -2.6410 0

40.9552 0 -2.6410

0 40.0006 0

-2.6410 0 40.0006

ans =

列 1 至 7

-37.6264 0 1.5464 0 -0.6720 0 -0.1107

0 -37.6264 0 1.5464 0 -0.6720 0

4.2933 0 -31.6413 0 0.9629 0 0.7200

0 4.2933 0 -31.6413 0 0.9629 0

0.8093 0 1.2341 0 -27.8578 0 1.1399

0 0.8093 0 1.2341 0 -27.8578 0

0.5299 0 0.8596 0 0.5320 0 -30.9168

0 0.5299 0 0.8596 0 0.5320 0

0.7081 0 1.8371 0 0.0358 0 0.4518

0 0.7081 0 1.8371 0 0.0358 0

1.4367 0 0.4766 0 1.9871 0 0.1053

0 1.4367 0 0.4766 0 1.9871 0

-5.5799 0 -0.6061 0 -0.4425 0 -0.0880

0 -5.5799 0 -0.6061 0 -0.4425 0

0.8554 0 -4.5530 0 -0.4320 0 -0.2828

0 0.8554 0 -4.5530 0 -0.4320 0

0.2943 0 0.1295 0 -2.8955 0 0.3007

0 0.2943 0 0.1295 0 -2.8955 0

0.0865 0 -0.0124 0 -0.3192 0 -3.7044

0 0.0865 0 -0.0124 0 -0.3192 0

0.8509 0 1.0916 0 0.3955 0 0.0581

0 0.8509 0 1.0916 0 0.3955 0

0.7144 0 0.6224 0 1.1366 0 0.3524

0 0.7144 0 0.6224 0 1.1366 0

列 8 至 14

0 -0.8950 0 0.0213 0 5.9243 0

-0.1107 0 -0.8950 0 0.0213 0 5.9243

0 1.2609 0 -0.4488 0 -0.1346 0

0.7200 0 1.2609 0 -0.4488 0 -0.1346

0 0.2265 0 1.9182 0 0.6381 0

1.1399 0 0.2265 0 1.9182 0 0.6381

0 -0.1598 0 -0.3605 0 0.0168 0

-30.9168 0 -0.1598 0 -0.3605 0 0.0168

0 -25.4964 0 0.3040 0 0.2649 0

0.4518 0 -25.4964 0 0.3040 0 0.2649

0 0.2151 0 -24.9939 0 0.1023 0

0.1053 0 0.2151 0 -24.9939 0 0.1023

0 -0.3106 0 -0.5514 0 -23.3060 0

-0.0880 0 -0.3106 0 -0.5514 0 -23.3060

0 -0.4438 0 -0.3018 0 0.0175 0

-0.2828 0 -0.4438 0 -0.3018 0 0.0175

0 -0.0507 0 -0.0101 0 -0.0490 0

0.3007 0 -0.0507 0 -0.0101 0 -0.0490

0 -0.0364 0 -0.1924 0 -0.0352 0

-3.7044 0 -0.0364 0 -0.1924 0 -0.0352

0 -2.0915 0 0.2441 0 -0.1123 0

0.0581 0 -2.0915 0 0.2441 0 -0.1123

0 0.1871 0 -1.9664 0 -0.0292 0

0.3524 0 0.1871 0 -1.9664 0 -0.0292

列 15 至 21

1.9631 0 0.5789 0 0.2183 0 -0.8901

0 1.9631 0 0.5789 0 0.2183 0

5.8123 0 0.3742 0 1.1608 0 1.1416

0 5.8123 0 0.3742 0 1.1608 0

-1.3228 0 5.5879 0 -0.9745 0 0.0261

0 -1.3228 0 5.5879 0 -0.9745 0

1.2953 0 -0.0298 0 6.4212 0 -0.1101

0 1.2953 0 -0.0298 0 6.4212 0

-0.7098 0 -1.0934 0 0.2900 0 4.5305

0 -0.7098 0 -1.0934 0 0.2900 0

-0.9705 0 -0.1547 0 -0.2189 0 -0.4571

0 -0.9705 0 -0.1547 0 -0.2189 0

0.6718 0 -0.0292 0 0.0384 0 -0.5628

0 0.6718 0 -0.0292 0 0.0384 0

-22.8629 0 0.6049 0 0.2237 0 0.4966

0 -22.8629 0 0.6049 0 0.2237 0

0.0415 0 -22.6842 0 -0.0732 0 0.5093

0 0.0415 0 -22.6842 0 -0.0732 0

0.3492 0 0.1828 0 -23.2926 0 -0.0312

0 0.3492 0 0.1828 0 -23.2926 0

-0.0593 0 0.1293 0 0.0431 0 -22.1361

0 -0.0593 0 0.1293 0 0.0431 0

-0.0960 0 0.1939 0 -0.0549 0 1.0044

0 -0.0960 0 0.1939 0 -0.0549 0

列 22 至 24

0 0.0123 0

-0.8901 0 0.0123

0 -0.1872 0

1.1416 0 -0.1872

0 1.4610 0

0.0261 0 1.4610

0 -0.2085 0

-0.1101 0 -0.2085

0 -0.5658 0

4.5305 0 -0.5658

0 4.3272 0

-0.4571 0 4.3272

0 -0.1391 0

-0.5628 0 -0.1391

0 0.2145 0

0.4966 0 0.2145

0 0.6621 0

0.5093 0 0.6621

0 -0.1116 0

-0.0312 0 -0.1116

0 0.9366 0

-22.1361 0 0.9366

0 -21.9262 0

1.0044 0 -21.9262

ans =

0.0004

0.0004

0.0006

0.0006

0.0011

0.0011

0.0017

0.0017

0.0020

0.0020

0.0034

0.0034

0.0036

0.0036

0.0048

0.0048

0.0055

0.0055

0.0069

0.0069

0.0101

0.0101

0.0126

0.0126

ans =

0.0002

0.0002

0.0003

0.0003

0.0006

0.0006

0.0009

0.0009

0.0011

0.0011

0.0014

0.0014

0.0017

0.0017

0.0020

0.0020

0.0030

0.0030

0.0035

0.0035

0.0050

0.0050

0.0061

0.0061

ans =

0.0352

0.0352

0.0393

0.0393

0.0413

0.0413

0.0415

0.0415

0.0421

0.0421

0.0422

0.0422

0.0458

0.0458

0.0502

0.0502

0.0544

0.0544

0.0614

0.0614

0.0654

0.0654

0.0770

0.0770

ans =

0.0127

0.0127

0.0139

0.0139

0.0146

0.0146

0.0154

0.0154

0.0160

0.0160

0.0162

0.0162

0.0219

0.0219

0.0258

0.0258

0.0285

0.0285

0.0318

0.0318

0.0375

0.0375

0.0408

0.0408

0.0569

0.0569

0.0626

0.0626

0.0657

0.0657

0.0671

0.0671

0.0682

0.0682

0.0685

0.0685

0.0704

0.0704

0.0746

0.0746

0.0818

0.0818

0.0921

0.0921

0.0943

0.0943

0.1144

0.1144

历时 821.858119 秒。

>>

## k=5，τ=0.5，三项，不可行

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.077607

2 6.042538e-03

3 6.042538e-03

4 4.616205e-04

5 4.616205e-04

6 3.322636e-05

7 3.322636e-05

8 2.252297e-06

9 2.027028e-06

10 1.654596e-06

11 1.303133e-06

12 1.089774e-06

13 8.476144e-07

\*\*\* new lower bound: -7.883356e-08

14 4.885822e-07

\*\*\* new lower bound: -4.345486e-08

15 2.855200e-07

\*\*\* new lower bound: -2.735118e-08

16 1.581391e-07

\*\*\* new lower bound: -1.841226e-08

17 8.732714e-08

\*\*\* new lower bound: -1.285495e-08

18 4.767851e-08

\*\*\* new lower bound: -9.155301e-09

19 2.548247e-08

\*\*\* new lower bound: -6.599676e-09

20 1.313805e-08

\*\*\* new lower bound: -4.796490e-09

21 7.404723e-09

\*\*\* new lower bound: -3.506926e-09

22 3.659303e-09

\*\*\* new lower bound: -2.572349e-09

23 1.923257e-09

\*\*\* new lower bound: -1.893112e-09

24 9.895036e-10

\*\*\* new lower bound: -1.395928e-09

25 9.895036e-10

\*\*\* new lower bound: -2.064203e-11

26 4.843839e-10

27 2.160755e-10

28 9.031630e-11

29 3.830398e-11

Result: best value of t: 3.830398e-11

f-radius saturation: 0.000% of R = 1.00e+09

Marginal infeasibility: these LMI constraints may be

feasible but are not strictly feasible

ans =

1.0e-07 \*

列 1 至 7

0.2257 0 0.0029 0 0.0001 0 0.0000

0 0.2257 0 0.0029 0 0.0001 0

0.0029 0 0.2344 0 0.0017 0 0.0001

0 0.0029 0 0.2344 0 0.0017 0

0.0001 0 0.0017 0 0.2431 0 0.0017

0 0.0001 0 0.0017 0 0.2431 0

0.0000 0 0.0001 0 0.0017 0 0.2254

0 0.0000 0 0.0001 0 0.0017 0

-0.0000 0 0.0028 0 -0.0000 0 0.0000

0 -0.0000 0 0.0028 0 -0.0000 0

0.0022 0 -0.0000 0 0.0021 0 -0.0000

0 0.0022 0 -0.0000 0 0.0021 0

-0.2217 0 0.0001 0 -0.0002 0 0.0000

0 -0.2217 0 0.0001 0 -0.0002 0

-0.0015 0 -0.2322 0 0.0004 0 -0.0001

0 -0.0015 0 -0.2322 0 0.0004 0

-0.0002 0 -0.0005 0 -0.2527 0 -0.0005

0 -0.0002 0 -0.0005 0 -0.2527 0

0.0000 0 -0.0001 0 0.0004 0 -0.2213

0 0.0000 0 -0.0001 0 0.0004 0

-0.0000 0 -0.0014 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0014 0 -0.0000 0

-0.0010 0 -0.0000 0 -0.0009 0 -0.0000

0 -0.0010 0 -0.0000 0 -0.0009 0

列 8 至 14

0 -0.0000 0 0.0022 0 -0.2217 0

0.0000 0 -0.0000 0 0.0022 0 -0.2217

0 0.0028 0 -0.0000 0 0.0001 0

0.0001 0 0.0028 0 -0.0000 0 0.0001

0 -0.0000 0 0.0021 0 -0.0002 0

0.0017 0 -0.0000 0 0.0021 0 -0.0002

0 0.0000 0 -0.0000 0 0.0000 0

0.2254 0 0.0000 0 -0.0000 0 0.0000

0 0.2341 0 0.0000 0 0.0000 0

0.0000 0 0.2341 0 0.0000 0 0.0000

0 0.0000 0 0.2407 0 0.0002 0

-0.0000 0 0.0000 0 0.2407 0 0.0002

0 0.0000 0 0.0002 0 -0.0030 0

0.0000 0 0.0000 0 0.0002 0 -0.0030

0 0.0001 0 -0.0000 0 -0.0005 0

-0.0001 0 0.0001 0 -0.0000 0 -0.0005

0 -0.0000 0 0.0002 0 -0.0000 0

-0.0005 0 -0.0000 0 0.0002 0 -0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

-0.2213 0 0.0000 0 -0.0000 0 -0.0000

0 -0.2314 0 0.0000 0 0.0000 0

-0.0000 0 -0.2314 0 0.0000 0 0.0000

0 0.0000 0 -0.2420 0 -0.0004 0

-0.0000 0 0.0000 0 -0.2420 0 -0.0004

列 15 至 21

-0.0015 0 -0.0002 0 0.0000 0 -0.0000

0 -0.0015 0 -0.0002 0 0.0000 0

-0.2322 0 -0.0005 0 -0.0001 0 -0.0014

0 -0.2322 0 -0.0005 0 -0.0001 0

0.0004 0 -0.2527 0 0.0004 0 -0.0000

0 0.0004 0 -0.2527 0 0.0004 0

-0.0001 0 -0.0005 0 -0.2213 0 -0.0000

0 -0.0001 0 -0.0005 0 -0.2213 0

0.0001 0 -0.0000 0 0.0000 0 -0.2314

0 0.0001 0 -0.0000 0 0.0000 0

-0.0000 0 0.0002 0 -0.0000 0 0.0000

0 -0.0000 0 0.0002 0 -0.0000 0

-0.0005 0 -0.0000 0 -0.0000 0 0.0000

0 -0.0005 0 -0.0000 0 -0.0000 0

-0.0032 0 -0.0003 0 -0.0000 0 -0.0004

0 -0.0032 0 -0.0003 0 -0.0000 0

-0.0003 0 -0.0015 0 -0.0004 0 0.0000

0 -0.0003 0 -0.0015 0 -0.0004 0

-0.0000 0 -0.0004 0 -0.0029 0 -0.0000

0 -0.0000 0 -0.0004 0 -0.0029 0

-0.0004 0 0.0000 0 -0.0000 0 -0.0032

0 -0.0004 0 0.0000 0 -0.0000 0

0.0000 0 -0.0003 0 0.0000 0 -0.0000

0 0.0000 0 -0.0003 0 0.0000 0

列 22 至 24

0 -0.0010 0

-0.0000 0 -0.0010

0 -0.0000 0

-0.0014 0 -0.0000

0 -0.0009 0

-0.0000 0 -0.0009

0 -0.0000 0

-0.0000 0 -0.0000

0 0.0000 0

-0.2314 0 0.0000

0 -0.2420 0

0.0000 0 -0.2420

0 -0.0004 0

0.0000 0 -0.0004

0 0.0000 0

-0.0004 0 0.0000

0 -0.0003 0

0.0000 0 -0.0003

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.0032 0 -0.0000

0 -0.0027 0

-0.0000 0 -0.0027

ans =

1.0e-07 \*

列 1 至 7

0.0438 0 0.0014 0 -0.0001 0 -0.0000

0 0.0438 0 0.0014 0 -0.0001 0

0.0014 0 0.0269 0 0.0011 0 -0.0000

0 0.0014 0 0.0269 0 0.0011 0

-0.0001 0 0.0011 0 -0.0074 0 0.0011

0 -0.0001 0 0.0011 0 -0.0074 0

-0.0000 0 -0.0000 0 0.0011 0 0.0442

0 -0.0000 0 -0.0000 0 0.0011 0

0.0000 0 0.0014 0 0.0000 0 0.0000

0 0.0000 0 0.0014 0 0.0000 0

0.0012 0 0.0000 0 0.0012 0 -0.0000

0 0.0012 0 0.0000 0 0.0012 0

-0.0579 0 0.0002 0 0.0000 0 -0.0000

0 -0.0579 0 0.0002 0 0.0000 0

-0.0005 0 -0.0597 0 -0.0000 0 0.0000

0 -0.0005 0 -0.0597 0 -0.0000 0

0.0000 0 -0.0003 0 -0.0615 0 -0.0004

0 0.0000 0 -0.0003 0 -0.0615 0

-0.0000 0 0.0000 0 -0.0000 0 -0.0579

0 -0.0000 0 0.0000 0 -0.0000 0

-0.0000 0 -0.0005 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0005 0 -0.0000 0

-0.0004 0 -0.0000 0 -0.0003 0 -0.0000

0 -0.0004 0 -0.0000 0 -0.0003 0

列 8 至 14

0 0.0000 0 0.0012 0 -0.0579 0

-0.0000 0 0.0000 0 0.0012 0 -0.0579

0 0.0014 0 0.0000 0 0.0002 0

-0.0000 0 0.0014 0 0.0000 0 0.0002

0 0.0000 0 0.0012 0 0.0000 0

0.0011 0 0.0000 0 0.0012 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

0.0442 0 0.0000 0 -0.0000 0 -0.0000

0 0.0279 0 0.0000 0 -0.0000 0

0.0000 0 0.0279 0 0.0000 0 -0.0000

0 0.0000 0 0.0114 0 0.0001 0

-0.0000 0 0.0000 0 0.0114 0 0.0001

0 -0.0000 0 0.0001 0 -0.2517 0

-0.0000 0 -0.0000 0 0.0001 0 -0.2517

0 0.0002 0 -0.0000 0 -0.0004 0

0.0000 0 0.0002 0 -0.0000 0 -0.0004

0 -0.0000 0 0.0001 0 0.0000 0

-0.0004 0 -0.0000 0 0.0001 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

-0.0579 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0597 0 0.0000 0 -0.0000 0

-0.0000 0 -0.0597 0 0.0000 0 -0.0000

0 0.0000 0 -0.0609 0 -0.0004 0

-0.0000 0 0.0000 0 -0.0609 0 -0.0004

列 15 至 21

-0.0005 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0005 0 0.0000 0 -0.0000 0

-0.0597 0 -0.0003 0 0.0000 0 -0.0005

0 -0.0597 0 -0.0003 0 0.0000 0

-0.0000 0 -0.0615 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0615 0 -0.0000 0

0.0000 0 -0.0004 0 -0.0579 0 -0.0000

0 0.0000 0 -0.0004 0 -0.0579 0

0.0002 0 -0.0000 0 0.0000 0 -0.0597

0 0.0002 0 -0.0000 0 0.0000 0

-0.0000 0 0.0001 0 -0.0000 0 0.0000

0 -0.0000 0 0.0001 0 -0.0000 0

-0.0004 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0004 0 0.0000 0 -0.0000 0

-0.2397 0 -0.0004 0 0.0000 0 -0.0004

0 -0.2397 0 -0.0004 0 0.0000 0

-0.0004 0 -0.2231 0 -0.0004 0 -0.0000

0 -0.0004 0 -0.2231 0 -0.0004 0

0.0000 0 -0.0004 0 -0.2522 0 -0.0000

0 0.0000 0 -0.0004 0 -0.2522 0

-0.0004 0 -0.0000 0 -0.0000 0 -0.2407

0 -0.0004 0 -0.0000 0 -0.0000 0

-0.0000 0 -0.0004 0 0.0000 0 -0.0000

0 -0.0000 0 -0.0004 0 0.0000 0

列 22 至 24

0 -0.0004 0

-0.0000 0 -0.0004

0 -0.0000 0

-0.0005 0 -0.0000

0 -0.0003 0

-0.0000 0 -0.0003

0 -0.0000 0

-0.0000 0 -0.0000

0 0.0000 0

-0.0597 0 0.0000

0 -0.0609 0

0.0000 0 -0.0609

0 -0.0004 0

-0.0000 0 -0.0004

0 -0.0000 0

-0.0004 0 -0.0000

0 -0.0004 0

-0.0000 0 -0.0004

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.2407 0 -0.0000

0 -0.2318 0

-0.0000 0 -0.2318

ans =

1.0e-06 \*

列 1 至 7

0.3756 0 0.0008 0 0.0001 0 -0.0000

0 0.3756 0 0.0008 0 0.0001 0

0.0008 0 0.3722 0 0.0004 0 0.0001

0 0.0008 0 0.3722 0 0.0004 0

0.0001 0 0.0004 0 0.3718 0 0.0004

0 0.0001 0 0.0004 0 0.3718 0

-0.0000 0 0.0001 0 0.0004 0 0.3757

0 -0.0000 0 0.0001 0 0.0004 0

0.0000 0 0.0008 0 0.0000 0 0.0000

0 0.0000 0 0.0008 0 0.0000 0

0.0006 0 0.0000 0 0.0006 0 0.0000

0 0.0006 0 0.0000 0 0.0006 0

0.0063 0 0.0003 0 0.0000 0 0.0000

0 0.0063 0 0.0003 0 0.0000 0

0.0003 0 0.0068 0 0.0002 0 0.0000

0 0.0003 0 0.0068 0 0.0002 0

0.0000 0 0.0002 0 0.0068 0 0.0002

0 0.0000 0 0.0002 0 0.0068 0

0.0000 0 0.0000 0 0.0002 0 0.0063

0 0.0000 0 0.0000 0 0.0002 0

-0.0000 0 0.0003 0 -0.0000 0 0.0000

0 -0.0000 0 0.0003 0 -0.0000 0

0.0002 0 -0.0000 0 0.0002 0 -0.0000

0 0.0002 0 -0.0000 0 0.0002 0

列 8 至 14

0 0.0000 0 0.0006 0 0.0063 0

-0.0000 0 0.0000 0 0.0006 0 0.0063

0 0.0008 0 0.0000 0 0.0003 0

0.0001 0 0.0008 0 0.0000 0 0.0003

0 0.0000 0 0.0006 0 0.0000 0

0.0004 0 0.0000 0 0.0006 0 0.0000

0 0.0000 0 0.0000 0 0.0000 0

0.3757 0 0.0000 0 0.0000 0 0.0000

0 0.3723 0 -0.0000 0 -0.0000 0

0.0000 0 0.3723 0 -0.0000 0 -0.0000

0 -0.0000 0 0.3719 0 0.0002 0

0.0000 0 -0.0000 0 0.3719 0 0.0002

0 -0.0000 0 0.0002 0 -0.0102 0

0.0000 0 -0.0000 0 0.0002 0 -0.0102

0 0.0002 0 -0.0000 0 0.0000 0

0.0000 0 0.0002 0 -0.0000 0 0.0000

0 -0.0000 0 0.0002 0 -0.0000 0

0.0002 0 -0.0000 0 0.0002 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

0.0063 0 0.0000 0 -0.0000 0 0.0000

0 0.0068 0 0.0000 0 -0.0000 0

0.0000 0 0.0068 0 0.0000 0 -0.0000

0 0.0000 0 0.0070 0 0.0000 0

-0.0000 0 0.0000 0 0.0070 0 0.0000

列 15 至 21

0.0003 0 0.0000 0 0.0000 0 -0.0000

0 0.0003 0 0.0000 0 0.0000 0

0.0068 0 0.0002 0 0.0000 0 0.0003

0 0.0068 0 0.0002 0 0.0000 0

0.0002 0 0.0068 0 0.0002 0 -0.0000

0 0.0002 0 0.0068 0 0.0002 0

0.0000 0 0.0002 0 0.0063 0 0.0000

0 0.0000 0 0.0002 0 0.0063 0

0.0002 0 -0.0000 0 0.0000 0 0.0068

0 0.0002 0 -0.0000 0 0.0000 0

-0.0000 0 0.0002 0 -0.0000 0 0.0000

0 -0.0000 0 0.0002 0 -0.0000 0

0.0000 0 -0.0000 0 0.0000 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

-0.0119 0 0.0000 0 -0.0000 0 0.0000

0 -0.0119 0 0.0000 0 -0.0000 0

0.0000 0 -0.0142 0 0.0000 0 0.0000

0 0.0000 0 -0.0142 0 0.0000 0

-0.0000 0 0.0000 0 -0.0102 0 0.0000

0 -0.0000 0 0.0000 0 -0.0102 0

0.0000 0 0.0000 0 0.0000 0 -0.0118

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 0.0000 0 -0.0000 0 0.0000

0 0.0000 0 0.0000 0 -0.0000 0

列 22 至 24

0 0.0002 0

-0.0000 0 0.0002

0 -0.0000 0

0.0003 0 -0.0000

0 0.0002 0

-0.0000 0 0.0002

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

0.0068 0 0.0000

0 0.0070 0

0.0000 0 0.0070

0 0.0000 0

-0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0118 0 0.0000

0 -0.0130 0

0.0000 0 -0.0130

ans =

1.0e-06 \*

列 1 至 7

-0.2486 0 -0.0002 0 0.0000 0 0.0000

0 -0.2486 0 -0.0002 0 0.0000 0

-0.0002 0 -0.2417 0 -0.0002 0 0.0000

0 -0.0002 0 -0.2417 0 -0.0002 0

0.0000 0 -0.0002 0 -0.2346 0 -0.0002

0 0.0000 0 -0.0002 0 -0.2346 0

0.0000 0 0.0000 0 -0.0002 0 -0.2489

0 0.0000 0 0.0000 0 -0.0002 0

-0.0000 0 -0.0003 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0003 0 -0.0000 0

-0.0002 0 -0.0000 0 -0.0002 0 -0.0000

0 -0.0002 0 -0.0000 0 -0.0002 0

0.0032 0 0.0006 0 0.0000 0 0.0000

0 0.0032 0 0.0006 0 0.0000 0

-0.0001 0 0.0036 0 0.0003 0 0.0000

0 -0.0001 0 0.0036 0 0.0003 0

0.0000 0 -0.0001 0 0.0037 0 -0.0001

0 0.0000 0 -0.0001 0 0.0037 0

0.0000 0 0.0000 0 0.0003 0 0.0032

0 0.0000 0 0.0000 0 0.0003 0

0.0000 0 -0.0002 0 0.0000 0 -0.0000

0 0.0000 0 -0.0002 0 0.0000 0

-0.0001 0 0.0000 0 -0.0001 0 0.0000

0 -0.0001 0 0.0000 0 -0.0001 0

列 8 至 14

0 -0.0000 0 -0.0002 0 -0.0010 0

0.0000 0 -0.0000 0 -0.0002 0 -0.0010

0 -0.0002 0 -0.0000 0 -0.0007 0

0.0000 0 -0.0002 0 -0.0000 0 -0.0007

0 -0.0000 0 -0.0002 0 -0.0000 0

-0.0002 0 -0.0000 0 -0.0002 0 -0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

-0.2489 0 -0.0000 0 -0.0000 0 0.0000

0 -0.2420 0 0.0000 0 0.0000 0

-0.0000 0 -0.2420 0 0.0000 0 0.0000

0 0.0000 0 -0.2380 0 -0.0005 0

-0.0000 0 0.0000 0 -0.2380 0 -0.0005

0 -0.0000 0 0.0005 0 0.0005 0

0.0000 0 -0.0000 0 0.0005 0 0.0005

0 0.0006 0 -0.0000 0 0.0000 0

0.0000 0 0.0006 0 -0.0000 0 0.0000

0 -0.0000 0 0.0005 0 0.0000 0

-0.0001 0 -0.0000 0 0.0005 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

0.0032 0 0.0000 0 -0.0000 0 -0.0000

0 0.0036 0 0.0000 0 0.0000 0

-0.0000 0 0.0036 0 0.0000 0 0.0000

0 0.0000 0 0.0038 0 0.0000 0

0.0000 0 0.0000 0 0.0038 0 0.0000

列 15 至 21

-0.0001 0 -0.0000 0 0.0000 0 0.0000

0 -0.0001 0 -0.0000 0 0.0000 0

-0.0019 0 -0.0001 0 -0.0000 0 -0.0001

0 -0.0019 0 -0.0001 0 -0.0000 0

-0.0004 0 -0.0023 0 -0.0004 0 0.0000

0 -0.0004 0 -0.0023 0 -0.0004 0

-0.0000 0 -0.0001 0 -0.0009 0 -0.0000

0 -0.0000 0 -0.0001 0 -0.0009 0

-0.0007 0 0.0000 0 -0.0000 0 -0.0019

0 -0.0007 0 0.0000 0 -0.0000 0

0.0000 0 -0.0006 0 0.0000 0 -0.0000

0 0.0000 0 -0.0006 0 0.0000 0

0.0000 0 0.0000 0 -0.0000 0 0.0000

0 0.0000 0 0.0000 0 -0.0000 0

0.0005 0 0.0000 0 0.0000 0 0.0000

0 0.0005 0 0.0000 0 0.0000 0

0.0000 0 0.0005 0 0.0000 0 0.0000

0 0.0000 0 0.0005 0 0.0000 0

0.0000 0 0.0000 0 0.0005 0 -0.0000

0 0.0000 0 0.0000 0 0.0005 0

0.0000 0 0.0000 0 0.0000 0 0.0005

0 0.0000 0 0.0000 0 0.0000 0

0.0000 0 0.0000 0 0.0000 0 0.0000

0 0.0000 0 0.0000 0 0.0000 0

列 22 至 24

0 -0.0001 0

0.0000 0 -0.0001

0 0.0000 0

-0.0001 0 0.0000

0 -0.0001 0

0.0000 0 -0.0001

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.0019 0 -0.0000

0 -0.0024 0

-0.0000 0 -0.0024

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

-0.0000 0 0.0000

0 0.0000 0

0.0005 0 0.0000

0 0.0005 0

0.0000 0 0.0005

ans =

1.0e-10 \*

-0.1599

-0.1599

-0.1519

-0.1519

-0.1453

-0.1453

-0.1445

-0.1445

-0.1381

-0.1381

-0.1378

-0.1378

0.3602

0.3602

0.3602

0.3602

0.3736

0.3736

0.3788

0.3788

0.3898

0.3898

0.4019

0.4019

ans =

1.0e-10 \*

-0.2631

-0.2631

-0.2626

-0.2626

-0.2535

-0.2535

-0.2524

-0.2524

-0.2462

-0.2462

-0.2393

-0.2393

0.0087

0.0087

0.0258

0.0258

0.0386

0.0386

0.0415

0.0415

0.0550

0.0550

0.0552

0.0552

ans =

1.0e-09 \*

-0.0144

-0.0144

-0.0132

-0.0132

-0.0120

-0.0120

-0.0119

-0.0119

-0.0103

-0.0103

-0.0103

-0.0103

0.3711

0.3711

0.3716

0.3716

0.3725

0.3725

0.3731

0.3731

0.3758

0.3758

0.3760

0.3760

ans =

1.0e-09 \*

-0.0148

-0.0148

-0.0141

-0.0141

-0.0137

-0.0137

-0.0129

-0.0129

-0.0125

-0.0125

-0.0124

-0.0124

-0.0118

-0.0118

-0.0117

-0.0117

-0.0107

-0.0107

-0.0107

-0.0107

-0.0101

-0.0101

-0.0101

-0.0101

0.1272

0.1272

0.1273

0.1273

0.1303

0.1303

0.1315

0.1315

0.1344

0.1344

0.1378

0.1378

0.6062

0.6062

0.6101

0.6101

0.6130

0.6130

0.6152

0.6152

0.6244

0.6244

0.6246

0.6246

历时 1766.704874 秒。

>>

## k？

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.074811

2 5.703292e-03

3 5.703292e-03

4 6.944574e-04

5 6.944574e-04

6 7.423145e-05

7 7.423145e-05

8 7.878885e-06

9 7.878885e-06

10 7.555678e-07

11 6.176755e-07

12 5.173105e-07

13 3.948542e-07

14 3.256409e-07

15 2.502320e-07

\*\*\* new lower bound: -1.637002e-08

16 1.403504e-07

\*\*\* new lower bound: -9.051226e-09

17 8.072460e-08

\*\*\* new lower bound: -5.659054e-09

18 4.176597e-08

\*\*\* new lower bound: -3.764936e-09

19 2.315126e-08

\*\*\* new lower bound: -2.605170e-09

20 1.279375e-08

\*\*\* new lower bound: -1.839336e-09

21 6.992366e-09

\*\*\* new lower bound: -1.315660e-09

22 3.743390e-09

\*\*\* new lower bound: -9.498718e-10

23 2.073870e-09

\*\*\* new lower bound: -6.906539e-10

24 1.104741e-09

\*\*\* new lower bound: -5.045114e-10

25 5.971550e-10

\*\*\* new lower bound: -3.699748e-10

26 2.981684e-10

\*\*\* new lower bound: -2.720533e-10

27 1.578648e-10

\*\*\* new lower bound: -2.005335e-10

28 8.138160e-11

\*\*\* new lower bound: -1.480280e-10

29 8.138160e-11

\*\*\* new lower bound: -1.400001e-11

Result: best value of t: 8.138160e-11

f-radius saturation: 0.000% of R = 1.00e+09

Marginal infeasibility: these LMI constraints may be

feasible but are not strictly feasible

ans =

1.0e-06 \*

列 1 至 7

0.2220 0 -0.0184 0 0.0063 0 0.0009

0 0.2220 0 -0.0184 0 0.0063 0

-0.0184 0 0.1322 0 -0.0067 0 0.0054

0 -0.0184 0 0.1322 0 -0.0067 0

0.0063 0 -0.0067 0 0.0890 0 -0.0087

0 0.0063 0 -0.0067 0 0.0890 0

0.0009 0 0.0054 0 -0.0087 0 0.1804

0 0.0009 0 0.0054 0 -0.0087 0

0.0000 0 -0.0114 0 -0.0002 0 0.0003

0 0.0000 0 -0.0114 0 -0.0002 0

-0.0073 0 -0.0001 0 -0.0039 0 -0.0003

0 -0.0073 0 -0.0001 0 -0.0039 0

0.0098 0 0.0079 0 -0.0006 0 -0.0003

0 0.0098 0 0.0079 0 -0.0006 0

-0.0304 0 -0.0154 0 0.0033 0 -0.0013

0 -0.0304 0 -0.0154 0 0.0033 0

-0.0033 0 -0.0134 0 -0.0189 0 -0.0139

0 -0.0033 0 -0.0134 0 -0.0189 0

-0.0004 0 -0.0014 0 0.0058 0 0.0099

0 -0.0004 0 -0.0014 0 0.0058 0

-0.0038 0 -0.0245 0 -0.0015 0 -0.0002

0 -0.0038 0 -0.0245 0 -0.0015 0

-0.0191 0 -0.0033 0 -0.0155 0 -0.0016

0 -0.0191 0 -0.0033 0 -0.0155 0

列 8 至 14

0 0.0000 0 -0.0073 0 0.0098 0

0.0009 0 0.0000 0 -0.0073 0 0.0098

0 -0.0114 0 -0.0001 0 0.0079 0

0.0054 0 -0.0114 0 -0.0001 0 0.0079

0 -0.0002 0 -0.0039 0 -0.0006 0

-0.0087 0 -0.0002 0 -0.0039 0 -0.0006

0 0.0003 0 -0.0003 0 -0.0003 0

0.1804 0 0.0003 0 -0.0003 0 -0.0003

0 0.0995 0 0.0002 0 0.0015 0

0.0003 0 0.0995 0 0.0002 0 0.0015

0 0.0002 0 0.0832 0 0.0060 0

-0.0003 0 0.0002 0 0.0832 0 0.0060

0 0.0015 0 0.0060 0 -0.0269 0

-0.0003 0 0.0015 0 0.0060 0 -0.0269

0 0.0042 0 -0.0012 0 0.0042 0

-0.0013 0 0.0042 0 -0.0012 0 0.0042

0 -0.0013 0 0.0011 0 0.0003 0

-0.0139 0 -0.0013 0 0.0011 0 0.0003

0 -0.0002 0 0.0008 0 -0.0000 0

0.0099 0 -0.0002 0 0.0008 0 -0.0000

0 -0.0174 0 -0.0001 0 0.0006 0

-0.0002 0 -0.0174 0 -0.0001 0 0.0006

0 0.0001 0 -0.0268 0 0.0014 0

-0.0016 0 0.0001 0 -0.0268 0 0.0014

列 15 至 21

-0.0304 0 -0.0033 0 -0.0004 0 -0.0038

0 -0.0304 0 -0.0033 0 -0.0004 0

-0.0154 0 -0.0134 0 -0.0014 0 -0.0245

0 -0.0154 0 -0.0134 0 -0.0014 0

0.0033 0 -0.0189 0 0.0058 0 -0.0015

0 0.0033 0 -0.0189 0 0.0058 0

-0.0013 0 -0.0139 0 0.0099 0 -0.0002

0 -0.0013 0 -0.0139 0 0.0099 0

0.0042 0 -0.0013 0 -0.0002 0 -0.0174

0 0.0042 0 -0.0013 0 -0.0002 0

-0.0012 0 0.0011 0 0.0008 0 -0.0001

0 -0.0012 0 0.0011 0 0.0008 0

0.0042 0 0.0003 0 -0.0000 0 0.0006

0 0.0042 0 0.0003 0 -0.0000 0

-0.0200 0 0.0020 0 -0.0002 0 0.0075

0 -0.0200 0 0.0020 0 -0.0002 0

0.0020 0 -0.0100 0 0.0010 0 0.0006

0 0.0020 0 -0.0100 0 0.0010 0

-0.0002 0 0.0010 0 -0.0133 0 0.0000

0 -0.0002 0 0.0010 0 -0.0133 0

0.0075 0 0.0006 0 0.0000 0 -0.0034

0 0.0075 0 0.0006 0 0.0000 0

0.0010 0 0.0062 0 0.0001 0 0.0003

0 0.0010 0 0.0062 0 0.0001 0

列 22 至 24

0 -0.0191 0

-0.0038 0 -0.0191

0 -0.0033 0

-0.0245 0 -0.0033

0 -0.0155 0

-0.0015 0 -0.0155

0 -0.0016 0

-0.0002 0 -0.0016

0 0.0001 0

-0.0174 0 0.0001

0 -0.0268 0

-0.0001 0 -0.0268

0 0.0014 0

0.0006 0 0.0014

0 0.0010 0

0.0075 0 0.0010

0 0.0062 0

0.0006 0 0.0062

0 0.0001 0

0.0000 0 0.0001

0 0.0003 0

-0.0034 0 0.0003

0 -0.0012 0

0.0003 0 -0.0012

ans =

1.0e-07 \*

列 1 至 7

0.3363 0 0.1017 0 0.0169 0 0.0021

0 0.3363 0 0.1017 0 0.0169 0

0.1017 0 0.4196 0 0.0615 0 0.0344

0 0.1017 0 0.4196 0 0.0615 0

0.0169 0 0.0615 0 0.3318 0 0.0593

0 0.0169 0 0.0615 0 0.3318 0

0.0021 0 0.0344 0 0.0593 0 0.3583

0 0.0021 0 0.0344 0 0.0593 0

-0.0339 0 0.0974 0 0.0229 0 0.0040

0 -0.0339 0 0.0974 0 0.0229 0

0.0945 0 0.0284 0 0.0940 0 -0.0134

0 0.0945 0 0.0284 0 0.0940 0

0.0196 0 0.0448 0 -0.0021 0 -0.0001

0 0.0196 0 0.0448 0 -0.0021 0

-0.0720 0 -0.0217 0 0.0124 0 -0.0004

0 -0.0720 0 -0.0217 0 0.0124 0

-0.0076 0 -0.0330 0 -0.0492 0 -0.0321

0 -0.0076 0 -0.0330 0 -0.0492 0

-0.0004 0 0.0000 0 0.0246 0 0.0114

0 -0.0004 0 0.0000 0 0.0246 0

-0.0075 0 -0.0663 0 -0.0026 0 0.0001

0 -0.0075 0 -0.0663 0 -0.0026 0

-0.0458 0 -0.0045 0 -0.0430 0 -0.0042

0 -0.0458 0 -0.0045 0 -0.0430 0

列 8 至 14

0 -0.0339 0 0.0945 0 0.0196 0

0.0021 0 -0.0339 0 0.0945 0 0.0196

0 0.0974 0 0.0284 0 0.0448 0

0.0344 0 0.0974 0 0.0284 0 0.0448

0 0.0229 0 0.0940 0 -0.0021 0

0.0593 0 0.0229 0 0.0940 0 -0.0021

0 0.0040 0 -0.0134 0 -0.0001 0

0.3583 0 0.0040 0 -0.0134 0 -0.0001

0 0.4192 0 0.0029 0 -0.0044 0

0.0040 0 0.4192 0 0.0029 0 -0.0044

0 0.0029 0 0.4401 0 0.0287 0

-0.0134 0 0.0029 0 0.4401 0 0.0287

0 -0.0044 0 0.0287 0 -0.6175 0

-0.0001 0 -0.0044 0 0.0287 0 -0.6175

0 0.0139 0 -0.0034 0 0.0271 0

-0.0004 0 0.0139 0 -0.0034 0 0.0271

0 -0.0016 0 -0.0023 0 0.0031 0

-0.0321 0 -0.0016 0 -0.0023 0 0.0031

0 -0.0003 0 -0.0017 0 0.0002 0

0.0114 0 -0.0003 0 -0.0017 0 0.0002

0 -0.0485 0 -0.0013 0 0.0018 0

0.0001 0 -0.0485 0 -0.0013 0 0.0018

0 -0.0011 0 -0.0734 0 0.0164 0

-0.0042 0 -0.0011 0 -0.0734 0 0.0164

列 15 至 21

-0.0720 0 -0.0076 0 -0.0004 0 -0.0075

0 -0.0720 0 -0.0076 0 -0.0004 0

-0.0217 0 -0.0330 0 0.0000 0 -0.0663

0 -0.0217 0 -0.0330 0 0.0000 0

0.0124 0 -0.0492 0 0.0246 0 -0.0026

0 0.0124 0 -0.0492 0 0.0246 0

-0.0004 0 -0.0321 0 0.0114 0 0.0001

0 -0.0004 0 -0.0321 0 0.0114 0

0.0139 0 -0.0016 0 -0.0003 0 -0.0485

0 0.0139 0 -0.0016 0 -0.0003 0

-0.0034 0 -0.0023 0 -0.0017 0 -0.0013

0 -0.0034 0 -0.0023 0 -0.0017 0

0.0271 0 0.0031 0 0.0002 0 0.0018

0 0.0271 0 0.0031 0 0.0002 0

-0.6082 0 0.0120 0 0.0019 0 0.0274

0 -0.6082 0 0.0120 0 0.0019 0

0.0120 0 -0.6194 0 0.0112 0 0.0009

0 0.0120 0 -0.6194 0 0.0112 0

0.0019 0 0.0112 0 -0.6003 0 -0.0001

0 0.0019 0 0.0112 0 -0.6003 0

0.0274 0 0.0009 0 -0.0001 0 -0.5852

0 0.0274 0 0.0009 0 -0.0001 0

0.0020 0 0.0221 0 0.0008 0 0.0004

0 0.0020 0 0.0221 0 0.0008 0

列 22 至 24

0 -0.0458 0

-0.0075 0 -0.0458

0 -0.0045 0

-0.0663 0 -0.0045

0 -0.0430 0

-0.0026 0 -0.0430

0 -0.0042 0

0.0001 0 -0.0042

0 -0.0011 0

-0.0485 0 -0.0011

0 -0.0734 0

-0.0013 0 -0.0734

0 0.0164 0

0.0018 0 0.0164

0 0.0020 0

0.0274 0 0.0020

0 0.0221 0

0.0009 0 0.0221

0 0.0008 0

-0.0001 0 0.0008

0 0.0004 0

-0.5852 0 0.0004

0 -0.5850 0

0.0004 0 -0.5850

ans =

1.0e-05 \*

列 1 至 7

0.1957 0 0.0140 0 0.0020 0 0.0004

0 0.1957 0 0.0140 0 0.0020 0

0.0140 0 0.1571 0 0.0056 0 0.0016

0 0.0140 0 0.1571 0 0.0056 0

0.0020 0 0.0056 0 0.1095 0 0.0062

0 0.0020 0 0.0056 0 0.1095 0

0.0004 0 0.0016 0 0.0062 0 0.1840

0 0.0004 0 0.0016 0 0.0062 0

0.0008 0 0.0106 0 -0.0006 0 -0.0001

0 0.0008 0 0.0106 0 -0.0006 0

0.0092 0 -0.0006 0 0.0067 0 0.0004

0 0.0092 0 -0.0006 0 0.0067 0

0.0465 0 0.0000 0 0.0000 0 0.0000

0 0.0465 0 0.0000 0 0.0000 0

-0.0079 0 0.0234 0 -0.0004 0 0.0001

0 -0.0079 0 0.0234 0 -0.0004 0

-0.0004 0 -0.0029 0 0.0105 0 -0.0030

0 -0.0004 0 -0.0029 0 0.0105 0

0.0000 0 0.0001 0 0.0002 0 0.0365

0 0.0000 0 0.0001 0 0.0002 0

-0.0009 0 -0.0070 0 -0.0003 0 0.0000

0 -0.0009 0 -0.0070 0 -0.0003 0

-0.0042 0 -0.0007 0 -0.0041 0 -0.0003

0 -0.0042 0 -0.0007 0 -0.0041 0

列 8 至 14

0 0.0008 0 0.0092 0 0.0465 0

0.0004 0 0.0008 0 0.0092 0 0.0465

0 0.0106 0 -0.0006 0 0.0000 0

0.0016 0 0.0106 0 -0.0006 0 0.0000

0 -0.0006 0 0.0067 0 0.0000 0

0.0062 0 -0.0006 0 0.0067 0 0.0000

0 -0.0001 0 0.0004 0 0.0000 0

0.1840 0 -0.0001 0 0.0004 0 0.0000

0 0.1440 0 -0.0001 0 -0.0002 0

-0.0001 0 0.1440 0 -0.0001 0 -0.0002

0 -0.0001 0 0.1275 0 0.0002 0

0.0004 0 -0.0001 0 0.1275 0 0.0002

0 -0.0002 0 0.0002 0 0.0563 0

0.0000 0 -0.0002 0 0.0002 0 0.0563

0 -0.0020 0 -0.0005 0 0.0044 0

0.0001 0 -0.0020 0 -0.0005 0 0.0044

0 -0.0003 0 -0.0020 0 0.0003 0

-0.0030 0 -0.0003 0 -0.0020 0 0.0003

0 -0.0000 0 -0.0001 0 0.0001 0

0.0365 0 -0.0000 0 -0.0001 0 0.0001

0 0.0132 0 -0.0000 0 0.0002 0

0.0000 0 0.0132 0 -0.0000 0 0.0002

0 -0.0001 0 0.0077 0 0.0026 0

-0.0003 0 -0.0001 0 0.0077 0 0.0026

列 15 至 21

-0.0079 0 -0.0004 0 0.0000 0 -0.0009

0 -0.0079 0 -0.0004 0 0.0000 0

0.0234 0 -0.0029 0 0.0001 0 -0.0070

0 0.0234 0 -0.0029 0 0.0001 0

-0.0004 0 0.0105 0 0.0002 0 -0.0003

0 -0.0004 0 0.0105 0 0.0002 0

0.0001 0 -0.0030 0 0.0365 0 0.0000

0 0.0001 0 -0.0030 0 0.0365 0

-0.0020 0 -0.0003 0 -0.0000 0 0.0132

0 -0.0020 0 -0.0003 0 -0.0000 0

-0.0005 0 -0.0020 0 -0.0001 0 -0.0000

0 -0.0005 0 -0.0020 0 -0.0001 0

0.0044 0 0.0003 0 0.0001 0 0.0002

0 0.0044 0 0.0003 0 0.0001 0

0.0320 0 0.0011 0 0.0002 0 0.0023

0 0.0320 0 0.0011 0 0.0002 0

0.0011 0 0.0128 0 0.0019 0 -0.0005

0 0.0011 0 0.0128 0 0.0019 0

0.0002 0 0.0019 0 0.0516 0 -0.0001

0 0.0002 0 0.0019 0 0.0516 0

0.0023 0 -0.0005 0 -0.0001 0 0.0265

0 0.0023 0 -0.0005 0 -0.0001 0

-0.0006 0 0.0010 0 0.0001 0 -0.0000

0 -0.0006 0 0.0010 0 0.0001 0

列 22 至 24

0 -0.0042 0

-0.0009 0 -0.0042

0 -0.0007 0

-0.0070 0 -0.0007

0 -0.0041 0

-0.0003 0 -0.0041

0 -0.0003 0

0.0000 0 -0.0003

0 -0.0001 0

0.0132 0 -0.0001

0 0.0077 0

-0.0000 0 0.0077

0 0.0026 0

0.0002 0 0.0026

0 -0.0006 0

0.0023 0 -0.0006

0 0.0010 0

-0.0005 0 0.0010

0 0.0001 0

-0.0001 0 0.0001

0 -0.0000 0

0.0265 0 -0.0000

0 0.0178 0

-0.0000 0 0.0178

ans =

1.0e-05 \*

列 1 至 7

-0.1770 0 -0.0038 0 -0.0007 0 0.0001

0 -0.1770 0 -0.0038 0 -0.0007 0

-0.0112 0 -0.1366 0 -0.0003 0 0.0001

0 -0.0112 0 -0.1366 0 -0.0003 0

-0.0000 0 -0.0046 0 -0.0932 0 -0.0054

0 -0.0000 0 -0.0046 0 -0.0932 0

0.0000 0 -0.0003 0 -0.0005 0 -0.1681

0 0.0000 0 -0.0003 0 -0.0005 0

-0.0015 0 -0.0080 0 0.0012 0 0.0003

0 -0.0015 0 -0.0080 0 0.0012 0

-0.0066 0 0.0015 0 -0.0042 0 -0.0007

0 -0.0066 0 0.0015 0 -0.0042 0

-0.0174 0 -0.0010 0 0.0005 0 0.0001

0 -0.0174 0 -0.0010 0 0.0005 0

0.0039 0 -0.0095 0 0.0001 0 0.0003

0 0.0039 0 -0.0095 0 0.0001 0

0.0008 0 0.0014 0 -0.0031 0 0.0014

0 0.0008 0 0.0014 0 -0.0031 0

0.0001 0 0.0002 0 -0.0004 0 -0.0131

0 0.0001 0 0.0002 0 -0.0004 0

0.0006 0 0.0037 0 0.0001 0 0.0000

0 0.0006 0 0.0037 0 0.0001 0

0.0025 0 0.0003 0 0.0023 0 0.0002

0 0.0025 0 0.0003 0 0.0023 0

列 8 至 14

0 -0.0003 0 -0.0020 0 -0.0523 0

0.0001 0 -0.0003 0 -0.0020 0 -0.0523

0 -0.0018 0 0.0015 0 0.0023 0

0.0001 0 -0.0018 0 0.0015 0 0.0023

0 0.0012 0 0.0002 0 0.0008 0

-0.0054 0 0.0012 0 0.0002 0 0.0008

0 0.0000 0 -0.0001 0 0.0001 0

-0.1681 0 0.0000 0 -0.0001 0 0.0001

0 -0.1245 0 0.0000 0 0.0001 0

0.0003 0 -0.1245 0 0.0000 0 0.0001

0 0.0000 0 -0.1057 0 0.0015 0

-0.0007 0 0.0000 0 -0.1057 0 0.0015

0 0.0006 0 -0.0004 0 -0.0138 0

0.0001 0 0.0006 0 -0.0004 0 -0.0138

0 0.0011 0 0.0003 0 -0.0014 0

0.0003 0 0.0011 0 0.0003 0 -0.0014

0 0.0001 0 0.0016 0 -0.0001 0

0.0014 0 0.0001 0 0.0016 0 -0.0001

0 0.0000 0 0.0002 0 -0.0000 0

-0.0131 0 0.0000 0 0.0002 0 -0.0000

0 -0.0039 0 0.0001 0 -0.0002 0

0.0000 0 -0.0039 0 0.0001 0 -0.0002

0 0.0001 0 -0.0014 0 -0.0008 0

0.0002 0 0.0001 0 -0.0014 0 -0.0008

列 15 至 21

0.0077 0 0.0006 0 0.0001 0 0.0007

0 0.0077 0 0.0006 0 0.0001 0

-0.0263 0 0.0027 0 0.0005 0 0.0072

0 -0.0263 0 0.0027 0 0.0005 0

0.0009 0 -0.0101 0 0.0006 0 0.0005

0 0.0009 0 -0.0101 0 0.0006 0

0.0004 0 0.0030 0 -0.0413 0 -0.0000

0 0.0004 0 0.0030 0 -0.0413 0

0.0039 0 0.0005 0 0.0001 0 -0.0140

0 0.0039 0 0.0005 0 0.0001 0

0.0008 0 0.0029 0 0.0000 0 -0.0000

0 0.0008 0 0.0029 0 0.0000 0

-0.0017 0 -0.0000 0 -0.0000 0 -0.0001

0 -0.0017 0 -0.0000 0 -0.0000 0

-0.0080 0 -0.0003 0 -0.0000 0 -0.0008

0 -0.0080 0 -0.0003 0 -0.0000 0

-0.0004 0 -0.0028 0 -0.0006 0 0.0001

0 -0.0004 0 -0.0028 0 -0.0006 0

-0.0000 0 -0.0005 0 -0.0123 0 0.0000

0 -0.0000 0 -0.0005 0 -0.0123 0

-0.0007 0 0.0001 0 0.0000 0 -0.0061

0 -0.0007 0 0.0001 0 0.0000 0

0.0000 0 -0.0002 0 -0.0001 0 0.0000

0 0.0000 0 -0.0002 0 -0.0001 0

列 22 至 24

0 0.0040 0

0.0007 0 0.0040

0 0.0009 0

0.0072 0 0.0009

0 0.0046 0

0.0005 0 0.0046

0 0.0002 0

-0.0000 0 0.0002

0 0.0000 0

-0.0140 0 0.0000

0 -0.0071 0

-0.0000 0 -0.0071

0 -0.0007 0

-0.0001 0 -0.0007

0 0.0001 0

-0.0008 0 0.0001

0 -0.0003 0

0.0001 0 -0.0003

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0061 0 0.0000

0 -0.0040 0

0.0000 0 -0.0040

ans =

1.0e-09 \*

-0.0342

-0.0342

-0.0235

-0.0235

-0.0180

-0.0180

-0.0145

-0.0145

-0.0111

-0.0111

-0.0075

-0.0075

0.0910

0.0910

0.0947

0.0947

0.1012

0.1012

0.1390

0.1390

0.1834

0.1834

0.2310

0.2310

ans =

1.0e-10 \*

-0.6567

-0.6567

-0.6328

-0.6328

-0.6151

-0.6151

-0.5991

-0.5991

-0.5801

-0.5801

-0.5601

-0.5601

0.2045

0.2045

0.2587

0.2587

0.3752

0.3752

0.3867

0.3867

0.4869

0.4869

0.6215

0.6215

ans =

1.0e-08 \*

0.0105

0.0105

0.0166

0.0166

0.0213

0.0213

0.0282

0.0282

0.0424

0.0424

0.0456

0.0456

0.1080

0.1080

0.1291

0.1291

0.1413

0.1413

0.1637

0.1637

0.1939

0.1939

0.2142

0.2142

ans =

1.0e-08 \*

0.0001

0.0001

0.0050

0.0050

0.0097

0.0097

0.0104

0.0104

0.0115

0.0115

0.0139

0.0139

0.0181

0.0181

0.0191

0.0191

0.0198

0.0198

0.0226

0.0226

0.0258

0.0258

0.0281

0.0281

0.0310

0.0310

0.0377

0.0377

0.0393

0.0393

0.0441

0.0441

0.0575

0.0575

0.0635

0.0635

0.2017

0.2017

0.2349

0.2349

0.2660

0.2660

0.3034

0.3034

0.3667

0.3667

0.3995

0.3995

历时 1673.357514 秒。

>>

## k=0.3，τ=0.5，不可行

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.075256

2 5.783523e-03

3 5.783523e-03

4 7.297670e-04

5 7.297670e-04

6 8.070709e-05

7 8.070709e-05

8 8.691269e-06

9 8.691269e-06

10 8.352522e-07

11 7.799873e-07

12 6.429174e-07

13 5.113980e-07

14 4.166913e-07

15 3.319995e-07

\*\*\* new lower bound: -1.906851e-08

16 1.807052e-07

\*\*\* new lower bound: -1.011304e-08

17 1.021224e-07

\*\*\* new lower bound: -6.163341e-09

18 5.556166e-08

\*\*\* new lower bound: -4.030457e-09

19 2.885098e-08

\*\*\* new lower bound: -2.745856e-09

20 1.599332e-08

\*\*\* new lower bound: -1.921854e-09

21 8.817956e-09

\*\*\* new lower bound: -1.365260e-09

22 4.796105e-09

\*\*\* new lower bound: -9.802151e-10

23 2.546321e-09

\*\*\* new lower bound: -7.094904e-10

24 1.393783e-09

\*\*\* new lower bound: -5.168389e-10

25 7.280918e-10

\*\*\* new lower bound: -3.781162e-10

26 3.820351e-10

\*\*\* new lower bound: -2.776362e-10

27 1.986883e-10

\*\*\* new lower bound: -2.043826e-10

28 1.003895e-10

\*\*\* new lower bound: -1.507400e-10

29 1.003895e-10

\*\*\* new lower bound: -5.470474e-12

30 5.076314e-11

Result: best value of t: 5.076314e-11

f-radius saturation: 0.000% of R = 1.00e+09

Marginal infeasibility: these LMI constraints may be

feasible but are not strictly feasible

ans =

1.0e-06 \*

列 1 至 7

0.1422 0 -0.0103 0 0.0047 0 0.0011

0 0.1422 0 -0.0103 0 0.0047 0

-0.0103 0 0.0930 0 -0.0054 0 0.0044

0 -0.0103 0 0.0930 0 -0.0054 0

0.0047 0 -0.0054 0 0.0639 0 -0.0066

0 0.0047 0 -0.0054 0 0.0639 0

0.0011 0 0.0044 0 -0.0066 0 0.1185

0 0.0011 0 0.0044 0 -0.0066 0

-0.0009 0 -0.0085 0 -0.0005 0 0.0002

0 -0.0009 0 -0.0085 0 -0.0005 0

-0.0056 0 -0.0007 0 -0.0029 0 -0.0005

0 -0.0056 0 -0.0007 0 -0.0029 0

-0.0135 0 0.0105 0 -0.0003 0 -0.0005

0 -0.0135 0 0.0105 0 -0.0003 0

-0.0233 0 -0.0174 0 0.0048 0 -0.0016

0 -0.0233 0 -0.0174 0 0.0048 0

-0.0036 0 -0.0107 0 -0.0119 0 -0.0110

0 -0.0036 0 -0.0107 0 -0.0119 0

-0.0006 0 -0.0017 0 0.0071 0 -0.0049

0 -0.0006 0 -0.0017 0 0.0071 0

-0.0040 0 -0.0185 0 -0.0014 0 -0.0003

0 -0.0040 0 -0.0185 0 -0.0014 0

-0.0157 0 -0.0033 0 -0.0112 0 -0.0019

0 -0.0157 0 -0.0033 0 -0.0112 0

列 8 至 14

0 -0.0009 0 -0.0056 0 -0.0135 0

0.0011 0 -0.0009 0 -0.0056 0 -0.0135

0 -0.0085 0 -0.0007 0 0.0105 0

0.0044 0 -0.0085 0 -0.0007 0 0.0105

0 -0.0005 0 -0.0029 0 -0.0003 0

-0.0066 0 -0.0005 0 -0.0029 0 -0.0003

0 0.0002 0 -0.0005 0 -0.0005 0

0.1185 0 0.0002 0 -0.0005 0 -0.0005

0 0.0716 0 0.0003 0 0.0026 0

0.0002 0 0.0716 0 0.0003 0 0.0026

0 0.0003 0 0.0587 0 0.0080 0

-0.0005 0 0.0003 0 0.0587 0 0.0080

0 0.0026 0 0.0080 0 -0.0040 0

-0.0005 0 0.0026 0 0.0080 0 -0.0040

0 0.0074 0 -0.0006 0 0.0039 0

-0.0016 0 0.0074 0 -0.0006 0 0.0039

0 -0.0012 0 0.0032 0 0.0004 0

-0.0110 0 -0.0012 0 0.0032 0 0.0004

0 -0.0001 0 0.0013 0 0.0001 0

-0.0049 0 -0.0001 0 0.0013 0 0.0001

0 -0.0113 0 -0.0002 0 0.0005 0

-0.0003 0 -0.0113 0 -0.0002 0 0.0005

0 0.0001 0 -0.0164 0 0.0018 0

-0.0019 0 0.0001 0 -0.0164 0 0.0018

列 15 至 21

-0.0233 0 -0.0036 0 -0.0006 0 -0.0040

0 -0.0233 0 -0.0036 0 -0.0006 0

-0.0174 0 -0.0107 0 -0.0017 0 -0.0185

0 -0.0174 0 -0.0107 0 -0.0017 0

0.0048 0 -0.0119 0 0.0071 0 -0.0014

0 0.0048 0 -0.0119 0 0.0071 0

-0.0016 0 -0.0110 0 -0.0049 0 -0.0003

0 -0.0016 0 -0.0110 0 -0.0049 0

0.0074 0 -0.0012 0 -0.0001 0 -0.0113

0 0.0074 0 -0.0012 0 -0.0001 0

-0.0006 0 0.0032 0 0.0013 0 -0.0002

0 -0.0006 0 0.0032 0 0.0013 0

0.0039 0 0.0004 0 0.0001 0 0.0005

0 0.0039 0 0.0004 0 0.0001 0

-0.0054 0 0.0017 0 0.0001 0 0.0053

0 -0.0054 0 0.0017 0 0.0001 0

0.0017 0 -0.0046 0 0.0013 0 0.0006

0 0.0017 0 -0.0046 0 0.0013 0

0.0001 0 0.0013 0 0.0027 0 0.0000

0 0.0001 0 0.0013 0 0.0027 0

0.0053 0 0.0006 0 0.0000 0 0.0028

0 0.0053 0 0.0006 0 0.0000 0

0.0010 0 0.0043 0 0.0001 0 0.0003

0 0.0010 0 0.0043 0 0.0001 0

列 22 至 24

0 -0.0157 0

-0.0040 0 -0.0157

0 -0.0033 0

-0.0185 0 -0.0033

0 -0.0112 0

-0.0014 0 -0.0112

0 -0.0019 0

-0.0003 0 -0.0019

0 0.0001 0

-0.0113 0 0.0001

0 -0.0164 0

-0.0002 0 -0.0164

0 0.0018 0

0.0005 0 0.0018

0 0.0010 0

0.0053 0 0.0010

0 0.0043 0

0.0006 0 0.0043

0 0.0001 0

0.0000 0 0.0001

0 0.0003 0

0.0028 0 0.0003

0 0.0020 0

0.0003 0 0.0020

ans =

1.0e-07 \*

列 1 至 7

0.0255 0 0.0924 0 0.0078 0 0.0020

0 0.0255 0 0.0924 0 0.0078 0

0.0924 0 0.1633 0 0.0573 0 0.0252

0 0.0924 0 0.1633 0 0.0573 0

0.0078 0 0.0573 0 0.1565 0 0.0530

0 0.0078 0 0.0573 0 0.1565 0

0.0020 0 0.0252 0 0.0530 0 0.0813

0 0.0020 0 0.0252 0 0.0530 0

-0.0306 0 0.0806 0 0.0261 0 0.0051

0 -0.0306 0 0.0806 0 0.0261 0

0.0760 0 0.0321 0 0.0806 0 -0.0144

0 0.0760 0 0.0321 0 0.0806 0

-0.0035 0 0.0265 0 -0.0012 0 -0.0003

0 -0.0035 0 0.0265 0 -0.0012 0

-0.0355 0 -0.0168 0 0.0094 0 -0.0006

0 -0.0355 0 -0.0168 0 0.0094 0

-0.0049 0 -0.0199 0 -0.0227 0 -0.0186

0 -0.0049 0 -0.0199 0 -0.0227 0

-0.0005 0 -0.0007 0 0.0169 0 -0.0046

0 -0.0005 0 -0.0007 0 0.0169 0

-0.0048 0 -0.0383 0 -0.0026 0 -0.0000

0 -0.0048 0 -0.0383 0 -0.0026 0

-0.0252 0 -0.0048 0 -0.0286 0 -0.0030

0 -0.0252 0 -0.0048 0 -0.0286 0

列 8 至 14

0 -0.0306 0 0.0760 0 -0.0035 0

0.0020 0 -0.0306 0 0.0760 0 -0.0035

0 0.0806 0 0.0321 0 0.0265 0

0.0252 0 0.0806 0 0.0321 0 0.0265

0 0.0261 0 0.0806 0 -0.0012 0

0.0530 0 0.0261 0 0.0806 0 -0.0012

0 0.0051 0 -0.0144 0 -0.0003 0

0.0813 0 0.0051 0 -0.0144 0 -0.0003

0 0.2024 0 0.0036 0 -0.0006 0

0.0051 0 0.2024 0 0.0036 0 -0.0006

0 0.0036 0 0.2445 0 0.0189 0

-0.0144 0 0.0036 0 0.2445 0 0.0189

0 -0.0006 0 0.0189 0 -0.3938 0

-0.0003 0 -0.0006 0 0.0189 0 -0.3938

0 0.0121 0 -0.0027 0 0.0210 0

-0.0006 0 0.0121 0 -0.0027 0 0.0210

0 -0.0017 0 -0.0000 0 0.0032 0

-0.0186 0 -0.0017 0 -0.0000 0 0.0032

0 -0.0003 0 -0.0003 0 0.0003 0

-0.0046 0 -0.0003 0 -0.0003 0 0.0003

0 -0.0244 0 -0.0016 0 0.0021 0

-0.0000 0 -0.0244 0 -0.0016 0 0.0021

0 -0.0014 0 -0.0372 0 0.0144 0

-0.0030 0 -0.0014 0 -0.0372 0 0.0144

列 15 至 21

-0.0355 0 -0.0049 0 -0.0005 0 -0.0048

0 -0.0355 0 -0.0049 0 -0.0005 0

-0.0168 0 -0.0199 0 -0.0007 0 -0.0383

0 -0.0168 0 -0.0199 0 -0.0007 0

0.0094 0 -0.0227 0 0.0169 0 -0.0026

0 0.0094 0 -0.0227 0 0.0169 0

-0.0006 0 -0.0186 0 -0.0046 0 -0.0000

0 -0.0006 0 -0.0186 0 -0.0046 0

0.0121 0 -0.0017 0 -0.0003 0 -0.0244

0 0.0121 0 -0.0017 0 -0.0003 0

-0.0027 0 -0.0000 0 -0.0003 0 -0.0016

0 -0.0027 0 -0.0000 0 -0.0003 0

0.0210 0 0.0032 0 0.0003 0 0.0021

0 0.0210 0 0.0032 0 0.0003 0

-0.3898 0 0.0097 0 0.0017 0 0.0217

0 -0.3898 0 0.0097 0 0.0017 0

0.0097 0 -0.3992 0 0.0097 0 0.0003

0 0.0097 0 -0.3992 0 0.0097 0

0.0017 0 0.0097 0 -0.3820 0 -0.0001

0 0.0017 0 0.0097 0 -0.3820 0

0.0217 0 0.0003 0 -0.0001 0 -0.3726

0 0.0217 0 0.0003 0 -0.0001 0

0.0012 0 0.0180 0 0.0010 0 0.0003

0 0.0012 0 0.0180 0 0.0010 0

列 22 至 24

0 -0.0252 0

-0.0048 0 -0.0252

0 -0.0048 0

-0.0383 0 -0.0048

0 -0.0286 0

-0.0026 0 -0.0286

0 -0.0030 0

-0.0000 0 -0.0030

0 -0.0014 0

-0.0244 0 -0.0014

0 -0.0372 0

-0.0016 0 -0.0372

0 0.0144 0

0.0021 0 0.0144

0 0.0012 0

0.0217 0 0.0012

0 0.0180 0

0.0003 0 0.0180

0 0.0010 0

-0.0001 0 0.0010

0 0.0003 0

-0.3726 0 0.0003

0 -0.3721 0

0.0003 0 -0.3721

ans =

1.0e-05 \*

列 1 至 7

0.1491 0 0.0110 0 0.0019 0 0.0005

0 0.1491 0 0.0110 0 0.0019 0

0.0110 0 0.1206 0 0.0045 0 0.0017

0 0.0110 0 0.1206 0 0.0045 0

0.0019 0 0.0045 0 0.0801 0 0.0049

0 0.0019 0 0.0045 0 0.0801 0

0.0005 0 0.0017 0 0.0049 0 0.1370

0 0.0005 0 0.0017 0 0.0049 0

0.0006 0 0.0082 0 -0.0006 0 -0.0001

0 0.0006 0 0.0082 0 -0.0006 0

0.0074 0 -0.0006 0 0.0054 0 0.0004

0 0.0074 0 -0.0006 0 0.0054 0

0.0258 0 0.0003 0 0.0000 0 0.0000

0 0.0258 0 0.0003 0 0.0000 0

-0.0054 0 0.0144 0 -0.0002 0 0.0000

0 -0.0054 0 0.0144 0 -0.0002 0

-0.0004 0 -0.0022 0 0.0073 0 -0.0022

0 -0.0004 0 -0.0022 0 0.0073 0

0.0000 0 0.0001 0 0.0001 0 0.0205

0 0.0000 0 0.0001 0 0.0001 0

-0.0007 0 -0.0051 0 -0.0003 0 -0.0000

0 -0.0007 0 -0.0051 0 -0.0003 0

-0.0031 0 -0.0007 0 -0.0030 0 -0.0003

0 -0.0031 0 -0.0007 0 -0.0030 0

列 8 至 14

0 0.0006 0 0.0074 0 0.0258 0

0.0005 0 0.0006 0 0.0074 0 0.0258

0 0.0082 0 -0.0006 0 0.0003 0

0.0017 0 0.0082 0 -0.0006 0 0.0003

0 -0.0006 0 0.0054 0 0.0000 0

0.0049 0 -0.0006 0 0.0054 0 0.0000

0 -0.0001 0 0.0004 0 0.0000 0

0.1370 0 -0.0001 0 0.0004 0 0.0000

0 0.1081 0 -0.0001 0 -0.0002 0

-0.0001 0 0.1081 0 -0.0001 0 -0.0002

0 -0.0001 0 0.0945 0 0.0001 0

0.0004 0 -0.0001 0 0.0945 0 0.0001

0 -0.0002 0 0.0001 0 0.0416 0

0.0000 0 -0.0002 0 0.0001 0 0.0416

0 -0.0011 0 -0.0005 0 0.0051 0

0.0000 0 -0.0011 0 -0.0005 0 0.0051

0 -0.0003 0 -0.0012 0 0.0005 0

-0.0022 0 -0.0003 0 -0.0012 0 0.0005

0 -0.0000 0 -0.0001 0 0.0001 0

0.0205 0 -0.0000 0 -0.0001 0 0.0001

0 0.0088 0 -0.0001 0 0.0005 0

-0.0000 0 0.0088 0 -0.0001 0 0.0005

0 -0.0001 0 0.0053 0 0.0030 0

-0.0003 0 -0.0001 0 0.0053 0 0.0030

列 15 至 21

-0.0054 0 -0.0004 0 0.0000 0 -0.0007

0 -0.0054 0 -0.0004 0 0.0000 0

0.0144 0 -0.0022 0 0.0001 0 -0.0051

0 0.0144 0 -0.0022 0 0.0001 0

-0.0002 0 0.0073 0 0.0001 0 -0.0003

0 -0.0002 0 0.0073 0 0.0001 0

0.0000 0 -0.0022 0 0.0205 0 -0.0000

0 0.0000 0 -0.0022 0 0.0205 0

-0.0011 0 -0.0003 0 -0.0000 0 0.0088

0 -0.0011 0 -0.0003 0 -0.0000 0

-0.0005 0 -0.0012 0 -0.0001 0 -0.0001

0 -0.0005 0 -0.0012 0 -0.0001 0

0.0051 0 0.0005 0 0.0001 0 0.0005

0 0.0051 0 0.0005 0 0.0001 0

0.0267 0 0.0014 0 0.0002 0 0.0032

0 0.0267 0 0.0014 0 0.0002 0

0.0014 0 0.0115 0 0.0022 0 -0.0005

0 0.0014 0 0.0115 0 0.0022 0

0.0002 0 0.0022 0 0.0394 0 -0.0002

0 0.0002 0 0.0022 0 0.0394 0

0.0032 0 -0.0005 0 -0.0002 0 0.0238

0 0.0032 0 -0.0005 0 -0.0002 0

-0.0006 0 0.0015 0 0.0002 0 -0.0001

0 -0.0006 0 0.0015 0 0.0002 0

列 22 至 24

0 -0.0031 0

-0.0007 0 -0.0031

0 -0.0007 0

-0.0051 0 -0.0007

0 -0.0030 0

-0.0003 0 -0.0030

0 -0.0003 0

-0.0000 0 -0.0003

0 -0.0001 0

0.0088 0 -0.0001

0 0.0053 0

-0.0001 0 0.0053

0 0.0030 0

0.0005 0 0.0030

0 -0.0006 0

0.0032 0 -0.0006

0 0.0015 0

-0.0005 0 0.0015

0 0.0002 0

-0.0002 0 0.0002

0 -0.0001 0

0.0238 0 -0.0001

0 0.0166 0

-0.0001 0 0.0166

ans =

1.0e-05 \*

列 1 至 7

-0.1346 0 -0.0022 0 -0.0007 0 0.0001

0 -0.1346 0 -0.0022 0 -0.0007 0

-0.0098 0 -0.1061 0 -0.0002 0 0.0001

0 -0.0098 0 -0.1061 0 -0.0002 0

-0.0003 0 -0.0043 0 -0.0703 0 -0.0051

0 -0.0003 0 -0.0043 0 -0.0703 0

0.0000 0 -0.0002 0 -0.0000 0 -0.1260

0 0.0000 0 -0.0002 0 -0.0000 0

-0.0018 0 -0.0072 0 0.0013 0 0.0004

0 -0.0018 0 -0.0072 0 0.0013 0

-0.0062 0 0.0017 0 -0.0041 0 -0.0009

0 -0.0062 0 0.0017 0 -0.0041 0

-0.0065 0 -0.0009 0 0.0004 0 0.0001

0 -0.0065 0 -0.0009 0 0.0004 0

0.0029 0 -0.0040 0 -0.0001 0 0.0002

0 0.0029 0 -0.0040 0 -0.0001 0

0.0006 0 0.0011 0 -0.0013 0 0.0011

0 0.0006 0 0.0011 0 -0.0013 0

0.0001 0 0.0002 0 -0.0004 0 -0.0042

0 0.0001 0 0.0002 0 -0.0004 0

0.0004 0 0.0028 0 0.0001 0 0.0000

0 0.0004 0 0.0028 0 0.0001 0

0.0019 0 0.0002 0 0.0018 0 0.0002

0 0.0019 0 0.0002 0 0.0018 0

列 8 至 14

0 -0.0005 0 -0.0012 0 -0.0275 0

0.0001 0 -0.0005 0 -0.0012 0 -0.0275

0 -0.0015 0 0.0015 0 0.0014 0

0.0001 0 -0.0015 0 0.0015 0 0.0014

0 0.0013 0 0.0001 0 0.0006 0

-0.0051 0 0.0013 0 0.0001 0 0.0006

0 0.0001 0 -0.0002 0 0.0001 0

-0.1260 0 0.0001 0 -0.0002 0 0.0001

0 -0.0960 0 0.0001 0 0.0000 0

0.0004 0 -0.0960 0 0.0001 0 0.0000

0 0.0000 0 -0.0810 0 0.0011 0

-0.0009 0 0.0000 0 -0.0810 0 0.0011

0 0.0005 0 -0.0003 0 -0.0073 0

0.0001 0 0.0005 0 -0.0003 0 -0.0073

0 0.0004 0 0.0002 0 -0.0018 0

0.0002 0 0.0004 0 0.0002 0 -0.0018

0 0.0001 0 0.0009 0 -0.0003 0

0.0011 0 0.0001 0 0.0009 0 -0.0003

0 0.0000 0 0.0002 0 -0.0001 0

-0.0042 0 0.0000 0 0.0002 0 -0.0001

0 -0.0011 0 0.0001 0 -0.0004 0

0.0000 0 -0.0011 0 0.0001 0 -0.0004

0 0.0001 0 -0.0001 0 -0.0011 0

0.0002 0 0.0001 0 -0.0001 0 -0.0011

列 15 至 21

0.0053 0 0.0005 0 0.0001 0 0.0005

0 0.0053 0 0.0005 0 0.0001 0

-0.0157 0 0.0020 0 0.0004 0 0.0051

0 -0.0157 0 0.0020 0 0.0004 0

0.0006 0 -0.0072 0 0.0004 0 0.0004

0 0.0006 0 -0.0072 0 0.0004 0

0.0004 0 0.0023 0 -0.0215 0 -0.0000

0 0.0004 0 0.0023 0 -0.0215 0

0.0026 0 0.0004 0 0.0001 0 -0.0089

0 0.0026 0 0.0004 0 0.0001 0

0.0007 0 0.0020 0 0.0000 0 0.0000

0 0.0007 0 0.0020 0 0.0000 0

-0.0020 0 -0.0002 0 -0.0000 0 -0.0003

0 -0.0020 0 -0.0002 0 -0.0000 0

-0.0051 0 -0.0004 0 -0.0001 0 -0.0013

0 -0.0051 0 -0.0004 0 -0.0001 0

-0.0005 0 -0.0019 0 -0.0007 0 0.0000

0 -0.0005 0 -0.0019 0 -0.0007 0

-0.0001 0 -0.0007 0 -0.0071 0 0.0000

0 -0.0001 0 -0.0007 0 -0.0071 0

-0.0013 0 0.0000 0 0.0000 0 -0.0047

0 -0.0013 0 0.0000 0 0.0000 0

-0.0001 0 -0.0005 0 -0.0002 0 0.0000

0 -0.0001 0 -0.0005 0 -0.0002 0

列 22 至 24

0 0.0031 0

0.0005 0 0.0031

0 0.0008 0

0.0051 0 0.0008

0 0.0034 0

0.0004 0 0.0034

0 0.0002 0

-0.0000 0 0.0002

0 0.0001 0

-0.0089 0 0.0001

0 -0.0049 0

0.0000 0 -0.0049

0 -0.0010 0

-0.0003 0 -0.0010

0 -0.0000 0

-0.0013 0 -0.0000

0 -0.0006 0

0.0000 0 -0.0006

0 -0.0001 0

0.0000 0 -0.0001

0 0.0000 0

-0.0047 0 0.0000

0 -0.0033 0

0.0000 0 -0.0033

ans =

1.0e-09 \*

-0.0153

-0.0153

-0.0108

-0.0108

-0.0090

-0.0090

-0.0036

-0.0036

-0.0010

-0.0010

0.0026

0.0026

0.0638

0.0638

0.0677

0.0677

0.0726

0.0726

0.1013

0.1013

0.1223

0.1223

0.1508

0.1508

ans =

1.0e-10 \*

-0.4250

-0.4250

-0.4082

-0.4082

-0.3948

-0.3948

-0.3815

-0.3815

-0.3658

-0.3658

-0.3504

-0.3504

-0.0481

-0.0481

0.0406

0.0406

0.1374

0.1374

0.1462

0.1462

0.2475

0.2475

0.3661

0.3661

ans =

1.0e-08 \*

0.0093

0.0093

0.0157

0.0157

0.0188

0.0188

0.0257

0.0257

0.0355

0.0355

0.0393

0.0393

0.0786

0.0786

0.0956

0.0956

0.1057

0.1057

0.1238

0.1238

0.1416

0.1416

0.1592

0.1592

ans =

1.0e-08 \*

0.0007

0.0007

0.0032

0.0032

0.0075

0.0075

0.0081

0.0081

0.0091

0.0091

0.0118

0.0118

0.0139

0.0139

0.0150

0.0150

0.0179

0.0179

0.0190

0.0190

0.0204

0.0204

0.0229

0.0229

0.0253

0.0253

0.0320

0.0320

0.0333

0.0333

0.0375

0.0375

0.0449

0.0449

0.0503

0.0503

0.1489

0.1489

0.1767

0.1767

0.2011

0.2011

0.2317

0.2317

0.2690

0.2690

0.2971

0.2971

历时 1720.776262 秒。

>> K

K =

0.3000 0 0 0 0 0

0 0.3000 0 0 0 0

0 0 0.3000 0 0 0

0 0 0 0.3000 0 0

0 0 0 0 0.3000 0

0 0 0 0 0 0.3000

>>

## k=10，τ=0.5，不可行

>> LMI

tau\_u =

0.5000

K =

10 0 0 0 0 0

0 10 0 0 0 0

0 0 10 0 0 0

0 0 0 10 0 0

0 0 0 0 10 0

0 0 0 0 0 10

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.077883

2 6.087547e-03

3 6.087547e-03

4 4.669506e-04

5 4.669506e-04

6 3.364118e-05

7 3.364118e-05

8 2.281708e-06

9 1.947213e-06

10 1.679346e-06

11 1.389945e-06

12 1.160345e-06

13 9.733544e-07

14 7.936255e-07

\*\*\* new lower bound: -8.315274e-08

15 4.855101e-07

\*\*\* new lower bound: -4.598021e-08

16 2.838091e-07

\*\*\* new lower bound: -2.876656e-08

17 1.570994e-07

\*\*\* new lower bound: -1.929654e-08

18 8.659068e-08

\*\*\* new lower bound: -1.345806e-08

19 4.711205e-08

\*\*\* new lower bound: -9.587308e-09

20 2.503403e-08

\*\*\* new lower bound: -6.916374e-09

21 1.372172e-08

\*\*\* new lower bound: -5.031049e-09

22 7.184612e-09

\*\*\* new lower bound: -3.678224e-09

23 3.783466e-09

\*\*\* new lower bound: -2.699864e-09

24 1.979240e-09

\*\*\* new lower bound: -1.987116e-09

25 1.010215e-09

\*\*\* new lower bound: -1.465368e-09

26 1.010215e-09

\*\*\* new lower bound: -3.596597e-11

27 4.870788e-10

28 2.091987e-10

29 9.427503e-11

30 3.729394e-11

Result: best value of t: 3.729394e-11

f-radius saturation: 0.000% of R = 1.00e+09

Marginal infeasibility: these LMI constraints may be

feasible but are not strictly feasible

ans =

1.0e-07 \*

列 1 至 7

0.2478 0 0.0009 0 -0.0000 0 0.0000

0 0.2478 0 0.0009 0 -0.0000 0

0.0009 0 0.2615 0 0.0005 0 -0.0000

0 0.0009 0 0.2615 0 0.0005 0

-0.0000 0 0.0005 0 0.2854 0 0.0005

0 -0.0000 0 0.0005 0 0.2854 0

0.0000 0 -0.0000 0 0.0005 0 0.2475

0 0.0000 0 -0.0000 0 0.0005 0

-0.0000 0 0.0008 0 0.0000 0 0.0000

0 -0.0000 0 0.0008 0 0.0000 0

0.0007 0 -0.0000 0 0.0005 0 -0.0000

0 0.0007 0 -0.0000 0 0.0005 0

-0.2411 0 0.0011 0 -0.0002 0 0.0000

0 -0.2411 0 0.0011 0 -0.0002 0

0.0008 0 -0.2693 0 0.0011 0 -0.0001

0 0.0008 0 -0.2693 0 0.0011 0

-0.0002 0 0.0009 0 -0.3266 0 0.0008

0 -0.0002 0 0.0009 0 -0.3266 0

0.0000 0 -0.0001 0 0.0010 0 -0.2400

0 0.0000 0 -0.0001 0 0.0010 0

-0.0000 0 0.0008 0 -0.0000 0 0.0000

0 -0.0000 0 0.0008 0 -0.0000 0

0.0007 0 -0.0000 0 0.0009 0 -0.0000

0 0.0007 0 -0.0000 0 0.0009 0

列 8 至 14

0 -0.0000 0 0.0007 0 -0.2411 0

0.0000 0 -0.0000 0 0.0007 0 -0.2411

0 0.0008 0 -0.0000 0 0.0011 0

-0.0000 0 0.0008 0 -0.0000 0 0.0011

0 0.0000 0 0.0005 0 -0.0002 0

0.0005 0 0.0000 0 0.0005 0 -0.0002

0 0.0000 0 -0.0000 0 0.0000 0

0.2475 0 0.0000 0 -0.0000 0 0.0000

0 0.2611 0 -0.0000 0 -0.0000 0

0.0000 0 0.2611 0 -0.0000 0 -0.0000

0 -0.0000 0 0.2737 0 0.0009 0

-0.0000 0 -0.0000 0 0.2737 0 0.0009

0 -0.0000 0 0.0009 0 -0.0005 0

0.0000 0 -0.0000 0 0.0009 0 -0.0005

0 0.0012 0 -0.0000 0 -0.0003 0

-0.0001 0 0.0012 0 -0.0000 0 -0.0003

0 -0.0000 0 0.0011 0 0.0000 0

0.0008 0 -0.0000 0 0.0011 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

-0.2400 0 0.0000 0 -0.0000 0 -0.0000

0 -0.2675 0 0.0000 0 0.0000 0

0.0000 0 -0.2675 0 0.0000 0 0.0000

0 0.0000 0 -0.2958 0 -0.0003 0

-0.0000 0 0.0000 0 -0.2958 0 -0.0003

列 15 至 21

0.0008 0 -0.0002 0 0.0000 0 -0.0000

0 0.0008 0 -0.0002 0 0.0000 0

-0.2693 0 0.0009 0 -0.0001 0 0.0008

0 -0.2693 0 0.0009 0 -0.0001 0

0.0011 0 -0.3266 0 0.0010 0 -0.0000

0 0.0011 0 -0.3266 0 0.0010 0

-0.0001 0 0.0008 0 -0.2400 0 0.0000

0 -0.0001 0 0.0008 0 -0.2400 0

0.0012 0 -0.0000 0 0.0000 0 -0.2675

0 0.0012 0 -0.0000 0 0.0000 0

-0.0000 0 0.0011 0 -0.0000 0 0.0000

0 -0.0000 0 0.0011 0 -0.0000 0

-0.0003 0 0.0000 0 -0.0000 0 0.0000

0 -0.0003 0 0.0000 0 -0.0000 0

0.0018 0 -0.0002 0 0.0000 0 -0.0003

0 0.0018 0 -0.0002 0 0.0000 0

-0.0002 0 0.0073 0 -0.0002 0 0.0000

0 -0.0002 0 0.0073 0 -0.0002 0

0.0000 0 -0.0002 0 -0.0007 0 -0.0000

0 0.0000 0 -0.0002 0 -0.0007 0

-0.0003 0 0.0000 0 -0.0000 0 0.0015

0 -0.0003 0 0.0000 0 -0.0000 0

0.0000 0 -0.0002 0 0.0000 0 -0.0000

0 0.0000 0 -0.0002 0 0.0000 0

列 22 至 24

0 0.0007 0

-0.0000 0 0.0007

0 -0.0000 0

0.0008 0 -0.0000

0 0.0009 0

-0.0000 0 0.0009

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.2675 0 0.0000

0 -0.2958 0

0.0000 0 -0.2958

0 -0.0003 0

0.0000 0 -0.0003

0 0.0000 0

-0.0003 0 0.0000

0 -0.0002 0

0.0000 0 -0.0002

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

0.0015 0 -0.0000

0 0.0041 0

-0.0000 0 0.0041

ans =

1.0e-07 \*

列 1 至 7

0.0203 0 0.0018 0 -0.0002 0 0.0000

0 0.0203 0 0.0018 0 -0.0002 0

0.0018 0 -0.0218 0 0.0014 0 -0.0001

0 0.0018 0 -0.0218 0 0.0014 0

-0.0002 0 0.0014 0 -0.1076 0 0.0014

0 -0.0002 0 0.0014 0 -0.1076 0

0.0000 0 -0.0001 0 0.0014 0 0.0218

0 0.0000 0 -0.0001 0 0.0014 0

-0.0000 0 0.0019 0 -0.0000 0 0.0000

0 -0.0000 0 0.0019 0 -0.0000 0

0.0014 0 -0.0000 0 0.0016 0 -0.0000

0 0.0014 0 -0.0000 0 0.0016 0

-0.0673 0 -0.0000 0 0.0000 0 -0.0000

0 -0.0673 0 -0.0000 0 0.0000 0

-0.0001 0 -0.0691 0 -0.0001 0 0.0000

0 -0.0001 0 -0.0691 0 -0.0001 0

0.0000 0 -0.0001 0 -0.0722 0 -0.0001

0 0.0000 0 -0.0001 0 -0.0722 0

-0.0000 0 0.0000 0 -0.0002 0 -0.0673

0 -0.0000 0 0.0000 0 -0.0002 0

-0.0000 0 -0.0001 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0001 0 -0.0000 0

-0.0001 0 -0.0000 0 0.0000 0 0.0000

0 -0.0001 0 -0.0000 0 0.0000 0

列 8 至 14

0 -0.0000 0 0.0014 0 -0.0673 0

0.0000 0 -0.0000 0 0.0014 0 -0.0673

0 0.0019 0 -0.0000 0 -0.0000 0

-0.0001 0 0.0019 0 -0.0000 0 -0.0000

0 -0.0000 0 0.0016 0 0.0000 0

0.0014 0 -0.0000 0 0.0016 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

0.0218 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0194 0 0.0000 0 -0.0000 0

0.0000 0 -0.0194 0 0.0000 0 -0.0000

0 0.0000 0 -0.0618 0 -0.0001 0

-0.0000 0 0.0000 0 -0.0618 0 -0.0001

0 -0.0000 0 -0.0001 0 -0.1933 0

-0.0000 0 -0.0000 0 -0.0001 0 -0.1933

0 0.0000 0 -0.0000 0 -0.0011 0

0.0000 0 0.0000 0 -0.0000 0 -0.0011

0 -0.0000 0 -0.0000 0 0.0001 0

-0.0001 0 -0.0000 0 -0.0000 0 0.0001

0 0.0000 0 -0.0000 0 -0.0000 0

-0.0673 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0690 0 0.0000 0 0.0000 0

-0.0000 0 -0.0690 0 0.0000 0 0.0000

0 0.0000 0 -0.0706 0 -0.0009 0

0.0000 0 0.0000 0 -0.0706 0 -0.0009

列 15 至 21

-0.0001 0 0.0000 0 -0.0000 0 -0.0000

0 -0.0001 0 0.0000 0 -0.0000 0

-0.0691 0 -0.0001 0 0.0000 0 -0.0001

0 -0.0691 0 -0.0001 0 0.0000 0

-0.0001 0 -0.0722 0 -0.0002 0 -0.0000

0 -0.0001 0 -0.0722 0 -0.0002 0

0.0000 0 -0.0001 0 -0.0673 0 -0.0000

0 0.0000 0 -0.0001 0 -0.0673 0

0.0000 0 -0.0000 0 0.0000 0 -0.0690

0 0.0000 0 -0.0000 0 0.0000 0

-0.0000 0 -0.0000 0 -0.0000 0 0.0000

0 -0.0000 0 -0.0000 0 -0.0000 0

-0.0011 0 0.0001 0 -0.0000 0 0.0000

0 -0.0011 0 0.0001 0 -0.0000 0

-0.1762 0 -0.0009 0 0.0000 0 -0.0012

0 -0.1762 0 -0.0009 0 0.0000 0

-0.0009 0 -0.1429 0 -0.0009 0 0.0000

0 -0.0009 0 -0.1429 0 -0.0009 0

0.0000 0 -0.0009 0 -0.1945 0 -0.0000

0 0.0000 0 -0.0009 0 -0.1945 0

-0.0012 0 0.0000 0 -0.0000 0 -0.1782

0 -0.0012 0 0.0000 0 -0.0000 0

0.0000 0 -0.0012 0 0.0000 0 -0.0000

0 0.0000 0 -0.0012 0 0.0000 0

列 22 至 24

0 -0.0001 0

-0.0000 0 -0.0001

0 -0.0000 0

-0.0001 0 -0.0000

0 0.0000 0

-0.0000 0 0.0000

0 0.0000 0

-0.0000 0 0.0000

0 0.0000 0

-0.0690 0 0.0000

0 -0.0706 0

0.0000 0 -0.0706

0 -0.0009 0

0.0000 0 -0.0009

0 0.0000 0

-0.0012 0 0.0000

0 -0.0012 0

0.0000 0 -0.0012

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.1782 0 -0.0000

0 -0.1616 0

-0.0000 0 -0.1616

ans =

1.0e-06 \*

列 1 至 7

0.3419 0 0.0001 0 0.0001 0 -0.0000

0 0.3419 0 0.0001 0 0.0001 0

0.0001 0 0.3472 0 0.0000 0 0.0001

0 0.0001 0 0.3472 0 0.0000 0

0.0001 0 0.0000 0 0.3594 0 0.0000

0 0.0001 0 0.0000 0 0.3594 0

-0.0000 0 0.0001 0 0.0000 0 0.3419

0 -0.0000 0 0.0001 0 0.0000 0

0.0000 0 0.0001 0 0.0000 0 -0.0000

0 0.0000 0 0.0001 0 0.0000 0

0.0001 0 0.0000 0 0.0001 0 0.0000

0 0.0001 0 0.0000 0 0.0001 0

0.0065 0 0.0001 0 -0.0000 0 0.0000

0 0.0065 0 0.0001 0 -0.0000 0

0.0002 0 0.0066 0 0.0001 0 0.0000

0 0.0002 0 0.0066 0 0.0001 0

-0.0000 0 0.0001 0 0.0065 0 0.0001

0 -0.0000 0 0.0001 0 0.0065 0

0.0000 0 0.0000 0 0.0001 0 0.0065

0 0.0000 0 0.0000 0 0.0001 0

-0.0000 0 0.0002 0 -0.0000 0 0.0000

0 -0.0000 0 0.0002 0 -0.0000 0

0.0001 0 -0.0000 0 0.0001 0 -0.0000

0 0.0001 0 -0.0000 0 0.0001 0

列 8 至 14

0 0.0000 0 0.0001 0 0.0065 0

-0.0000 0 0.0000 0 0.0001 0 0.0065

0 0.0001 0 0.0000 0 0.0001 0

0.0001 0 0.0001 0 0.0000 0 0.0001

0 0.0000 0 0.0001 0 -0.0000 0

0.0000 0 0.0000 0 0.0001 0 -0.0000

0 -0.0000 0 0.0000 0 0.0000 0

0.3419 0 -0.0000 0 0.0000 0 0.0000

0 0.3472 0 -0.0000 0 -0.0000 0

-0.0000 0 0.3472 0 -0.0000 0 -0.0000

0 -0.0000 0 0.3532 0 0.0001 0

0.0000 0 -0.0000 0 0.3532 0 0.0001

0 -0.0000 0 0.0001 0 -0.0144 0

0.0000 0 -0.0000 0 0.0001 0 -0.0144

0 0.0001 0 -0.0000 0 0.0001 0

0.0000 0 0.0001 0 -0.0000 0 0.0001

0 -0.0000 0 0.0001 0 -0.0000 0

0.0001 0 -0.0000 0 0.0001 0 -0.0000

0 0.0000 0 -0.0000 0 0.0000 0

0.0065 0 0.0000 0 -0.0000 0 0.0000

0 0.0067 0 0.0000 0 -0.0000 0

0.0000 0 0.0067 0 0.0000 0 -0.0000

0 0.0000 0 0.0067 0 0.0001 0

-0.0000 0 0.0000 0 0.0067 0 0.0001

列 15 至 21

0.0002 0 -0.0000 0 0.0000 0 -0.0000

0 0.0002 0 -0.0000 0 0.0000 0

0.0066 0 0.0001 0 0.0000 0 0.0002

0 0.0066 0 0.0001 0 0.0000 0

0.0001 0 0.0065 0 0.0001 0 -0.0000

0 0.0001 0 0.0065 0 0.0001 0

0.0000 0 0.0001 0 0.0065 0 0.0000

0 0.0000 0 0.0001 0 0.0065 0

0.0001 0 -0.0000 0 0.0000 0 0.0067

0 0.0001 0 -0.0000 0 0.0000 0

-0.0000 0 0.0001 0 -0.0000 0 0.0000

0 -0.0000 0 0.0001 0 -0.0000 0

0.0001 0 -0.0000 0 0.0000 0 -0.0000

0 0.0001 0 -0.0000 0 0.0000 0

-0.0168 0 0.0001 0 -0.0000 0 0.0001

0 -0.0168 0 0.0001 0 -0.0000 0

0.0001 0 -0.0215 0 0.0001 0 -0.0000

0 0.0001 0 -0.0215 0 0.0001 0

-0.0000 0 0.0001 0 -0.0143 0 0.0000

0 -0.0000 0 0.0001 0 -0.0143 0

0.0001 0 -0.0000 0 0.0000 0 -0.0166

0 0.0001 0 -0.0000 0 0.0000 0

-0.0000 0 0.0001 0 -0.0000 0 0.0000

0 -0.0000 0 0.0001 0 -0.0000 0

列 22 至 24

0 0.0001 0

-0.0000 0 0.0001

0 -0.0000 0

0.0002 0 -0.0000

0 0.0001 0

-0.0000 0 0.0001

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

0.0067 0 0.0000

0 0.0067 0

0.0000 0 0.0067

0 0.0001 0

-0.0000 0 0.0001

0 -0.0000 0

0.0001 0 -0.0000

0 0.0001 0

-0.0000 0 0.0001

0 -0.0000 0

0.0000 0 -0.0000

0 0.0000 0

-0.0166 0 0.0000

0 -0.0190 0

0.0000 0 -0.0190

ans =

1.0e-06 \*

列 1 至 7

-0.2109 0 -0.0004 0 -0.0000 0 -0.0000

0 -0.2109 0 -0.0004 0 -0.0000 0

-0.0003 0 -0.2064 0 -0.0003 0 -0.0000

0 -0.0003 0 -0.2064 0 -0.0003 0

-0.0000 0 -0.0002 0 -0.1988 0 -0.0002

0 -0.0000 0 -0.0002 0 -0.1988 0

-0.0000 0 -0.0000 0 -0.0002 0 -0.2112

0 -0.0000 0 -0.0000 0 -0.0002 0

-0.0000 0 -0.0003 0 -0.0000 0 -0.0000

0 -0.0000 0 -0.0003 0 -0.0000 0

-0.0003 0 -0.0000 0 -0.0003 0 -0.0000

0 -0.0003 0 -0.0000 0 -0.0003 0

0.0043 0 0.0003 0 0.0000 0 -0.0000

0 0.0043 0 0.0003 0 0.0000 0

-0.0001 0 0.0045 0 0.0001 0 0.0000

0 -0.0001 0 0.0045 0 0.0001 0

0.0000 0 -0.0001 0 0.0047 0 -0.0001

0 0.0000 0 -0.0001 0 0.0047 0

-0.0000 0 0.0000 0 0.0001 0 0.0043

0 -0.0000 0 0.0000 0 0.0001 0

0.0000 0 -0.0001 0 0.0000 0 -0.0000

0 0.0000 0 -0.0001 0 0.0000 0

-0.0001 0 0.0000 0 -0.0001 0 0.0000

0 -0.0001 0 0.0000 0 -0.0001 0

列 8 至 14

0 -0.0000 0 -0.0003 0 -0.0016 0

-0.0000 0 -0.0000 0 -0.0003 0 -0.0016

0 -0.0004 0 -0.0000 0 -0.0004 0

-0.0000 0 -0.0004 0 -0.0000 0 -0.0004

0 -0.0000 0 -0.0004 0 -0.0000 0

-0.0002 0 -0.0000 0 -0.0004 0 -0.0000

0 -0.0000 0 -0.0000 0 0.0000 0

-0.2112 0 -0.0000 0 -0.0000 0 0.0000

0 -0.2070 0 0.0000 0 0.0000 0

-0.0000 0 -0.2070 0 0.0000 0 0.0000

0 0.0000 0 -0.2031 0 -0.0003 0

-0.0000 0 0.0000 0 -0.2031 0 -0.0003

0 -0.0000 0 0.0002 0 -0.0002 0

-0.0000 0 -0.0000 0 0.0002 0 -0.0002

0 0.0003 0 -0.0000 0 0.0000 0

0.0000 0 0.0003 0 -0.0000 0 0.0000

0 -0.0000 0 0.0002 0 0.0000 0

-0.0001 0 -0.0000 0 0.0002 0 0.0000

0 0.0000 0 -0.0000 0 -0.0000 0

0.0043 0 0.0000 0 -0.0000 0 -0.0000

0 0.0045 0 0.0000 0 0.0000 0

-0.0000 0 0.0045 0 0.0000 0 0.0000

0 0.0000 0 0.0047 0 0.0000 0

0.0000 0 0.0000 0 0.0047 0 0.0000

列 15 至 21

-0.0001 0 -0.0000 0 0.0000 0 0.0000

0 -0.0001 0 -0.0000 0 0.0000 0

-0.0022 0 -0.0000 0 -0.0000 0 -0.0001

0 -0.0022 0 -0.0000 0 -0.0000 0

-0.0002 0 -0.0026 0 -0.0002 0 0.0000

0 -0.0002 0 -0.0026 0 -0.0002 0

-0.0000 0 -0.0000 0 -0.0016 0 -0.0000

0 -0.0000 0 -0.0000 0 -0.0016 0

-0.0004 0 0.0000 0 -0.0000 0 -0.0022

0 -0.0004 0 0.0000 0 -0.0000 0

0.0000 0 -0.0003 0 0.0000 0 -0.0000

0 0.0000 0 -0.0003 0 0.0000 0

0.0000 0 0.0000 0 -0.0000 0 0.0000

0 0.0000 0 0.0000 0 -0.0000 0

-0.0002 0 -0.0000 0 0.0000 0 0.0000

0 -0.0002 0 -0.0000 0 0.0000 0

-0.0000 0 -0.0002 0 -0.0000 0 0.0000

0 -0.0000 0 -0.0002 0 -0.0000 0

0.0000 0 -0.0000 0 -0.0002 0 -0.0000

0 0.0000 0 -0.0000 0 -0.0002 0

0.0000 0 0.0000 0 -0.0000 0 -0.0002

0 0.0000 0 0.0000 0 -0.0000 0

0.0000 0 0.0000 0 0.0000 0 -0.0000

0 0.0000 0 0.0000 0 0.0000 0

列 22 至 24

0 -0.0001 0

0.0000 0 -0.0001

0 0.0000 0

-0.0001 0 0.0000

0 -0.0001 0

0.0000 0 -0.0001

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.0022 0 -0.0000

0 -0.0026 0

-0.0000 0 -0.0026

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

0.0000 0 0.0000

0 0.0000 0

-0.0000 0 0.0000

0 -0.0000 0

-0.0002 0 -0.0000

0 -0.0002 0

-0.0000 0 -0.0002

ans =

1.0e-10 \*

-0.2087

-0.2087

-0.1861

-0.1861

-0.1678

-0.1678

-0.1655

-0.1655

-0.1475

-0.1475

-0.1468

-0.1468

0.3936

0.3936

0.3948

0.3948

0.4285

0.4285

0.4307

0.4307

0.4640

0.4640

0.5013

0.5013

ans =

1.0e-10 \*

-0.2138

-0.2138

-0.2129

-0.2129

-0.2044

-0.2044

-0.2022

-0.2022

-0.1995

-0.1995

-0.1981

-0.1981

-0.0510

-0.0510

-0.0252

-0.0252

0.0038

0.0038

0.0072

0.0072

0.0399

0.0399

0.0411

0.0411

ans =

1.0e-09 \*

-0.0216

-0.0216

-0.0191

-0.0191

-0.0170

-0.0170

-0.0167

-0.0167

-0.0145

-0.0145

-0.0144

-0.0144

0.3420

0.3420

0.3421

0.3421

0.3472

0.3472

0.3475

0.3475

0.3533

0.3533

0.3595

0.3595

ans =

1.0e-09 \*

-0.0221

-0.0221

-0.0214

-0.0214

-0.0196

-0.0196

-0.0189

-0.0189

-0.0175

-0.0175

-0.0172

-0.0172

-0.0167

-0.0167

-0.0165

-0.0165

-0.0151

-0.0151

-0.0150

-0.0150

-0.0142

-0.0142

-0.0141

-0.0141

0.1312

0.1312

0.1315

0.1315

0.1406

0.1406

0.1413

0.1413

0.1505

0.1505

0.1610

0.1610

0.5525

0.5525

0.5532

0.5532

0.5535

0.5535

0.5546

0.5546

0.5563

0.5563

0.5584

0.5584

历时 1752.771729 秒。

>>

## k=1，τ=0.1，可行

>> LMI

tau\_u =

0.1000

K =

1 0 0 0 0 0

0 1 0 0 0 0

0 0 1 0 0 0

0 0 0 1 0 0

0 0 0 0 1 0

0 0 0 0 0 1

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.022271

2 1.162852e-03

3 1.162852e-03

4 1.400591e-04

5 1.400591e-04

6 2.236279e-05

7 1.055923e-05

8 -1.384721e-04

Result: best value of t: -1.384721e-04

f-radius saturation: 0.000% of R = 1.00e+09

ans =

1.0e+03 \*

列 1 至 7

1.0809 0 -0.1948 0 0.0632 0 0.0092

0 1.0809 0 -0.1948 0 0.0632 0

-0.1948 0 0.7911 0 -0.1926 0 0.0723

0 -0.1948 0 0.7911 0 -0.1926 0

0.0632 0 -0.1926 0 0.7829 0 -0.1978

0 0.0632 0 -0.1926 0 0.7829 0

0.0092 0 0.0723 0 -0.1978 0 0.9012

0 0.0092 0 0.0723 0 -0.1978 0

-0.0103 0 -0.2066 0 -0.0359 0 0.0085

0 -0.0103 0 -0.2066 0 -0.0359 0

-0.1404 0 -0.0433 0 -0.1355 0 -0.0141

0 -0.1404 0 -0.0433 0 -0.1355 0

0.1873 0 0.0163 0 0.0046 0 -0.0025

0 0.1873 0 0.0163 0 0.0046 0

-0.1097 0 0.1369 0 0.0148 0 0.0025

0 -0.1097 0 0.1369 0 0.0148 0

-0.0055 0 -0.0649 0 0.1471 0 -0.0633

0 -0.0055 0 -0.0649 0 0.1471 0

-0.0027 0 0.0016 0 0.0077 0 0.1780

0 -0.0027 0 0.0016 0 0.0077 0

-0.0041 0 -0.1045 0 -0.0057 0 0.0049

0 -0.0041 0 -0.1045 0 -0.0057 0

-0.0697 0 -0.0073 0 -0.0829 0 -0.0062

0 -0.0697 0 -0.0073 0 -0.0829 0

列 8 至 14

0 -0.0103 0 -0.1404 0 0.1873 0

0.0092 0 -0.0103 0 -0.1404 0 0.1873

0 -0.2066 0 -0.0433 0 0.0163 0

0.0723 0 -0.2066 0 -0.0433 0 0.0163

0 -0.0359 0 -0.1355 0 0.0046 0

-0.1978 0 -0.0359 0 -0.1355 0 0.0046

0 0.0085 0 -0.0141 0 -0.0025 0

0.9012 0 0.0085 0 -0.0141 0 -0.0025

0 0.5163 0 -0.0160 0 0.0070 0

0.0085 0 0.5163 0 -0.0160 0 0.0070

0 -0.0160 0 0.3896 0 0.0167 0

-0.0141 0 -0.0160 0 0.3896 0 0.0167

0 0.0070 0 0.0167 0 0.4987 0

-0.0025 0 0.0070 0 0.0167 0 0.4987

0 0.0251 0 0.0030 0 -0.0337 0

0.0025 0 0.0251 0 0.0030 0 -0.0337

0 0.0026 0 0.0140 0 0.0106 0

-0.0633 0 0.0026 0 0.0140 0 0.0106

0 -0.0011 0 0.0039 0 0.0028 0

0.1780 0 -0.0011 0 0.0039 0 0.0028

0 0.1240 0 0.0000 0 0.0005 0

0.0049 0 0.1240 0 0.0000 0 0.0005

0 0.0011 0 0.1023 0 -0.0228 0

-0.0062 0 0.0011 0 0.1023 0 -0.0228

列 15 至 21

-0.1097 0 -0.0055 0 -0.0027 0 -0.0041

0 -0.1097 0 -0.0055 0 -0.0027 0

0.1369 0 -0.0649 0 0.0016 0 -0.1045

0 0.1369 0 -0.0649 0 0.0016 0

0.0148 0 0.1471 0 0.0077 0 -0.0057

0 0.0148 0 0.1471 0 0.0077 0

0.0025 0 -0.0633 0 0.1780 0 0.0049

0 0.0025 0 -0.0633 0 0.1780 0

0.0251 0 0.0026 0 -0.0011 0 0.1240

0 0.0251 0 0.0026 0 -0.0011 0

0.0030 0 0.0140 0 0.0039 0 0.0000

0 0.0030 0 0.0140 0 0.0039 0

-0.0337 0 0.0106 0 0.0028 0 0.0005

0 -0.0337 0 0.0106 0 0.0028 0

0.3304 0 -0.0388 0 0.0168 0 -0.0386

0 0.3304 0 -0.0388 0 0.0168 0

-0.0388 0 0.2358 0 -0.0375 0 -0.0197

0 -0.0388 0 0.2358 0 -0.0375 0

0.0168 0 -0.0375 0 0.4417 0 0.0023

0 0.0168 0 -0.0375 0 0.4417 0

-0.0386 0 -0.0197 0 0.0023 0 0.2486

0 -0.0386 0 -0.0197 0 0.0023 0

-0.0232 0 -0.0138 0 -0.0046 0 -0.0122

0 -0.0232 0 -0.0138 0 -0.0046 0

列 22 至 24

0 -0.0697 0

-0.0041 0 -0.0697

0 -0.0073 0

-0.1045 0 -0.0073

0 -0.0829 0

-0.0057 0 -0.0829

0 -0.0062 0

0.0049 0 -0.0062

0 0.0011 0

0.1240 0 0.0011

0 0.1023 0

0.0000 0 0.1023

0 -0.0228 0

0.0005 0 -0.0228

0 -0.0232 0

-0.0386 0 -0.0232

0 -0.0138 0

-0.0197 0 -0.0138

0 -0.0046 0

0.0023 0 -0.0046

0 -0.0122 0

0.2486 0 -0.0122

0 0.1832 0

-0.0122 0 0.1832

ans =

列 1 至 7

502.5882 0 -94.1379 0 20.1710 0 2.6988

0 502.5882 0 -94.1379 0 20.1710 0

-94.1379 0 408.9908 0 -85.6061 0 29.0565

0 -94.1379 0 408.9908 0 -85.6061 0

20.1710 0 -85.6061 0 453.1892 0 -87.4568

0 20.1710 0 -85.6061 0 453.1892 0

2.6988 0 29.0565 0 -87.4568 0 437.1933

0 2.6988 0 29.0565 0 -87.4568 0

-9.9711 0 -101.8395 0 -8.8934 0 3.5721

0 -9.9711 0 -101.8395 0 -8.8934 0

-69.3228 0 -18.2555 0 -82.0410 0 -9.5030

0 -69.3228 0 -18.2555 0 -82.0410 0

-81.5360 0 52.6279 0 4.9502 0 -3.1363

0 -81.5360 0 52.6279 0 4.9502 0

-25.5752 0 -60.0058 0 42.3273 0 -0.6962

0 -25.5752 0 -60.0058 0 42.3273 0

-5.5182 0 -12.5418 0 -67.1450 0 -9.4833

0 -5.5182 0 -12.5418 0 -67.1450 0

-2.1715 0 0.0050 0 39.5772 0 -74.9622

0 -2.1715 0 0.0050 0 39.5772 0

-4.4463 0 -21.4659 0 4.0402 0 1.2597

0 -4.4463 0 -21.4659 0 4.0402 0

-15.3658 0 0.0697 0 -19.1571 0 -3.6765

0 -15.3658 0 0.0697 0 -19.1571 0

列 8 至 14

0 -9.9711 0 -69.3228 0 -81.5360 0

2.6988 0 -9.9711 0 -69.3228 0 -81.5360

0 -101.8395 0 -18.2555 0 52.6279 0

29.0565 0 -101.8395 0 -18.2555 0 52.6279

0 -8.8934 0 -82.0410 0 4.9502 0

-87.4568 0 -8.8934 0 -82.0410 0 4.9502

0 3.5721 0 -9.5030 0 -3.1363 0

437.1933 0 3.5721 0 -9.5030 0 -3.1363

0 311.5949 0 -3.9944 0 0.2393 0

3.5721 0 311.5949 0 -3.9944 0 0.2393

0 -3.9944 0 269.0362 0 42.4296 0

-9.5030 0 -3.9944 0 269.0362 0 42.4296

0 0.2393 0 42.4296 0 352.2893 0

-3.1363 0 0.2393 0 42.4296 0 352.2893

0 60.7766 0 6.7620 0 -56.1605 0

-0.6962 0 60.7766 0 6.7620 0 -56.1605

0 9.0937 0 50.3471 0 18.6753 0

-9.4833 0 9.0937 0 50.3471 0 18.6753

0 -5.2860 0 2.7935 0 -3.2647 0

-74.9622 0 -5.2860 0 2.7935 0 -3.2647

0 -48.8873 0 2.2890 0 18.5975 0

1.2597 0 -48.8873 0 2.2890 0 18.5975

0 4.1804 0 -38.7434 0 -21.1597 0

-3.6765 0 4.1804 0 -38.7434 0 -21.1597

列 15 至 21

-25.5752 0 -5.5182 0 -2.1715 0 -4.4463

0 -25.5752 0 -5.5182 0 -2.1715 0

-60.0058 0 -12.5418 0 0.0050 0 -21.4659

0 -60.0058 0 -12.5418 0 0.0050 0

42.3273 0 -67.1450 0 39.5772 0 4.0402

0 42.3273 0 -67.1450 0 39.5772 0

-0.6962 0 -9.4833 0 -74.9622 0 1.2597

0 -0.6962 0 -9.4833 0 -74.9622 0

60.7766 0 9.0937 0 -5.2860 0 -48.8873

0 60.7766 0 9.0937 0 -5.2860 0

6.7620 0 50.3471 0 2.7935 0 2.2890

0 6.7620 0 50.3471 0 2.7935 0

-56.1605 0 18.6753 0 -3.2647 0 18.5975

0 -56.1605 0 18.6753 0 -3.2647 0

263.1022 0 -47.7218 0 14.4443 0 -51.5855

0 263.1022 0 -47.7218 0 14.4443 0

-47.7218 0 259.9512 0 -51.7047 0 -23.4369

0 -47.7218 0 259.9512 0 -51.7047 0

14.4443 0 -51.7047 0 330.3470 0 7.0965

0 14.4443 0 -51.7047 0 330.3470 0

-51.5855 0 -23.4369 0 7.0965 0 200.2124

0 -51.5855 0 -23.4369 0 7.0965 0

-9.8754 0 -41.5284 0 5.3573 0 -13.6013

0 -9.8754 0 -41.5284 0 5.3573 0

列 22 至 24

0 -15.3658 0

-4.4463 0 -15.3658

0 0.0697 0

-21.4659 0 0.0697

0 -19.1571 0

4.0402 0 -19.1571

0 -3.6765 0

1.2597 0 -3.6765

0 4.1804 0

-48.8873 0 4.1804

0 -38.7434 0

2.2890 0 -38.7434

0 -21.1597 0

18.5975 0 -21.1597

0 -9.8754 0

-51.5855 0 -9.8754

0 -41.5284 0

-23.4369 0 -41.5284

0 5.3573 0

7.0965 0 5.3573

0 -13.6013 0

200.2124 0 -13.6013

0 156.3007 0

-13.6013 0 156.3007

ans =

1.0e+03 \*

列 1 至 7

4.1239 0 -0.1353 0 -0.0085 0 -0.0008

0 4.1239 0 -0.1353 0 -0.0085 0

-0.1353 0 3.9510 0 -0.1074 0 0.0056

0 -0.1353 0 3.9510 0 -0.1074 0

-0.0085 0 -0.1074 0 3.8208 0 -0.0990

0 -0.0085 0 -0.1074 0 3.8208 0

-0.0008 0 0.0056 0 -0.0990 0 3.9468

0 -0.0008 0 0.0056 0 -0.0990 0

-0.0096 0 -0.1303 0 -0.0241 0 0.0015

0 -0.0096 0 -0.1303 0 -0.0241 0

-0.0931 0 -0.0321 0 -0.1091 0 -0.0112

0 -0.0931 0 -0.0321 0 -0.1091 0

1.1395 0 -0.1544 0 0.0235 0 0.0012

0 1.1395 0 -0.1544 0 0.0235 0

-0.2140 0 0.9141 0 -0.1047 0 0.0285

0 -0.2140 0 0.9141 0 -0.1047 0

-0.0024 0 -0.1898 0 0.7872 0 -0.1741

0 -0.0024 0 -0.1898 0 0.7872 0

0.0009 0 0.0273 0 -0.1236 0 0.9125

0 0.0009 0 0.0273 0 -0.1236 0

-0.0276 0 -0.2292 0 -0.0339 0 0.0059

0 -0.0276 0 -0.2292 0 -0.0339 0

-0.1601 0 -0.0550 0 -0.2025 0 -0.0295

0 -0.1601 0 -0.0550 0 -0.2025 0

列 8 至 14

0 -0.0096 0 -0.0931 0 1.1395 0

-0.0008 0 -0.0096 0 -0.0931 0 1.1395

0 -0.1303 0 -0.0321 0 -0.1544 0

0.0056 0 -0.1303 0 -0.0321 0 -0.1544

0 -0.0241 0 -0.1091 0 0.0235 0

-0.0990 0 -0.0241 0 -0.1091 0 0.0235

0 0.0015 0 -0.0112 0 0.0012 0

3.9468 0 0.0015 0 -0.0112 0 0.0012

0 3.6712 0 -0.0157 0 0.0038 0

0.0015 0 3.6712 0 -0.0157 0 0.0038

0 -0.0157 0 3.5901 0 -0.0922 0

-0.0112 0 -0.0157 0 3.5901 0 -0.0922

0 0.0038 0 -0.0922 0 4.3763 0

0.0012 0 0.0038 0 -0.0922 0 4.3763

0 -0.1167 0 -0.0114 0 -0.1598 0

0.0285 0 -0.1167 0 -0.0114 0 -0.1598

0 -0.0130 0 -0.0631 0 -0.0058 0

-0.1741 0 -0.0130 0 -0.0631 0 -0.0058

0 0.0048 0 -0.0007 0 -0.0003 0

0.9125 0 0.0048 0 -0.0007 0 -0.0003

0 0.5615 0 -0.0114 0 -0.0027 0

0.0059 0 0.5615 0 -0.0114 0 -0.0027

0 -0.0101 0 0.4668 0 -0.1079 0

-0.0295 0 -0.0101 0 0.4668 0 -0.1079

列 15 至 21

-0.2140 0 -0.0024 0 0.0009 0 -0.0276

0 -0.2140 0 -0.0024 0 0.0009 0

0.9141 0 -0.1898 0 0.0273 0 -0.2292

0 0.9141 0 -0.1898 0 0.0273 0

-0.1047 0 0.7872 0 -0.1236 0 -0.0339

0 -0.1047 0 0.7872 0 -0.1236 0

0.0285 0 -0.1741 0 0.9125 0 0.0059

0 0.0285 0 -0.1741 0 0.9125 0

-0.1167 0 -0.0130 0 0.0048 0 0.5615

0 -0.1167 0 -0.0130 0 0.0048 0

-0.0114 0 -0.0631 0 -0.0007 0 -0.0114

0 -0.0114 0 -0.0631 0 -0.0007 0

-0.1598 0 -0.0058 0 -0.0003 0 -0.0027

0 -0.1598 0 -0.0058 0 -0.0003 0

4.0992 0 -0.1488 0 0.0083 0 -0.1611

0 4.0992 0 -0.1488 0 0.0083 0

-0.1488 0 3.8518 0 -0.1209 0 -0.0602

0 -0.1488 0 3.8518 0 -0.1209 0

0.0083 0 -0.1209 0 4.1662 0 -0.0009

0 0.0083 0 -0.1209 0 4.1662 0

-0.1611 0 -0.0602 0 -0.0009 0 3.7945

0 -0.1611 0 -0.0602 0 -0.0009 0

-0.0381 0 -0.1215 0 -0.0012 0 -0.0133

0 -0.0381 0 -0.1215 0 -0.0012 0

列 22 至 24

0 -0.1601 0

-0.0276 0 -0.1601

0 -0.0550 0

-0.2292 0 -0.0550

0 -0.2025 0

-0.0339 0 -0.2025

0 -0.0295 0

0.0059 0 -0.0295

0 -0.0101 0

0.5615 0 -0.0101

0 0.4668 0

-0.0114 0 0.4668

0 -0.1079 0

-0.0027 0 -0.1079

0 -0.0381 0

-0.1611 0 -0.0381

0 -0.1215 0

-0.0602 0 -0.1215

0 -0.0012 0

-0.0009 0 -0.0012

0 -0.0133 0

3.7945 0 -0.0133

0 3.6361 0

-0.0133 0 3.6361

ans =

1.0e+03 \*

列 1 至 7

-2.5007 0 0.1141 0 0.0068 0 0.0016

0 -2.5007 0 0.1141 0 0.0068 0

0.1456 0 -2.3529 0 0.0708 0 0.0145

0 0.1456 0 -2.3529 0 0.0708 0

0.0127 0 0.0721 0 -2.2283 0 0.0750

0 0.0127 0 0.0721 0 -2.2283 0

0.0013 0 0.0150 0 0.0637 0 -2.3304

0 0.0013 0 0.0150 0 0.0637 0

-0.0021 0 0.1199 0 0.0012 0 0.0043

0 -0.0021 0 0.1199 0 0.0012 0

0.0939 0 -0.0040 0 0.1200 0 -0.0062

0 0.0939 0 -0.0040 0 0.1200 0

-0.2650 0 -0.0076 0 0.0090 0 0.0023

0 -0.2650 0 -0.0076 0 0.0090 0

0.1100 0 -0.2103 0 -0.0357 0 0.0297

0 0.1100 0 -0.2103 0 -0.0357 0

0.0419 0 0.0440 0 -0.0689 0 0.0363

0 0.0419 0 0.0440 0 -0.0689 0

0.0014 0 0.0312 0 -0.0358 0 -0.1452

0 0.0014 0 0.0312 0 -0.0358 0

0.0171 0 0.0904 0 -0.0071 0 0.0082

0 0.0171 0 0.0904 0 -0.0071 0

0.0806 0 0.0022 0 0.1013 0 0.0043

0 0.0806 0 0.0022 0 0.1013 0

列 8 至 14

0 -0.0018 0 0.0791 0 0.0433 0

0.0016 0 -0.0018 0 0.0791 0 0.0433

0 0.1121 0 0.0026 0 0.0768 0

0.0145 0 0.1121 0 0.0026 0 0.0768

0 0.0057 0 0.1050 0 0.0263 0

0.0750 0 0.0057 0 0.1050 0 0.0263

0 -0.0018 0 -0.0025 0 0.0024 0

-2.3304 0 -0.0018 0 -0.0025 0 0.0024

0 -2.1360 0 -0.0004 0 -0.0103 0

0.0043 0 -2.1360 0 -0.0004 0 -0.0103

0 0.0000 0 -2.0817 0 0.0513 0

-0.0062 0 0.0000 0 -2.0817 0 0.0513

0 -0.0108 0 -0.0147 0 -2.1992 0

0.0023 0 -0.0108 0 -0.0147 0 -2.1992

0 -0.0261 0 -0.0229 0 0.1630 0

0.0297 0 -0.0261 0 -0.0229 0 0.1630

0 -0.0164 0 -0.0171 0 0.0207 0

0.0363 0 -0.0164 0 -0.0171 0 0.0207

0 0.0053 0 -0.0143 0 0.0030 0

-0.1452 0 0.0053 0 -0.0143 0 0.0030

0 -0.0747 0 -0.0088 0 -0.0153 0

0.0082 0 -0.0747 0 -0.0088 0 -0.0153

0 -0.0110 0 -0.0659 0 0.1076 0

0.0043 0 -0.0110 0 -0.0659 0 0.1076

列 15 至 21

0.0409 0 0.0228 0 0.0039 0 -0.0047

0 0.0409 0 0.0228 0 0.0039 0

0.0958 0 -0.0133 0 0.0394 0 0.0306

0 0.0958 0 -0.0133 0 0.0394 0

0.0086 0 0.2422 0 0.0165 0 -0.0186

0 0.0086 0 0.2422 0 0.0165 0

0.0418 0 -0.0158 0 0.1649 0 0.0045

0 0.0418 0 -0.0158 0 0.1649 0

0.0384 0 -0.0227 0 0.0085 0 0.2207

0 0.0384 0 -0.0227 0 0.0085 0

-0.0411 0 0.0697 0 -0.0181 0 -0.0130

0 -0.0411 0 0.0697 0 -0.0181 0

0.0508 0 -0.0013 0 0.0044 0 -0.0303

0 0.0508 0 -0.0013 0 0.0044 0

-2.0584 0 0.0131 0 0.0286 0 0.0442

0 -2.0584 0 0.0131 0 0.0286 0

0.0986 0 -1.9037 0 0.0924 0 0.0169

0 0.0986 0 -1.9037 0 0.0924 0

0.0306 0 0.0085 0 -2.0674 0 -0.0001

0 0.0306 0 0.0085 0 -2.0674 0

0.1419 0 0.0212 0 0.0015 0 -1.8770

0 0.1419 0 0.0212 0 0.0015 0

-0.0079 0 0.1644 0 -0.0142 0 0.0186

0 -0.0079 0 0.1644 0 -0.0142 0

列 22 至 24

0 0.0252 0

-0.0047 0 0.0252

0 -0.0185 0

0.0306 0 -0.0185

0 0.0354 0

-0.0186 0 0.0354

0 -0.0106 0

0.0045 0 -0.0106

0 -0.0121 0

0.2207 0 -0.0121

0 0.2301 0

-0.0130 0 0.2301

0 0.0108 0

-0.0303 0 0.0108

0 -0.0051 0

0.0442 0 -0.0051

0 0.0490 0

0.0169 0 0.0490

0 -0.0237 0

-0.0001 0 -0.0237

0 0.0227 0

-1.8770 0 0.0227

0 -1.8012 0

0.0186 0 -1.8012

ans =

0.1169

0.1169

0.1650

0.1650

0.2082

0.2082

0.2351

0.2351

0.3078

0.3078

0.3825

0.3825

0.4653

0.4653

0.4841

0.4841

0.7259

0.7259

0.8614

0.8614

1.0978

1.0978

1.3502

1.3502

ans =

0.1008

0.1008

0.1530

0.1530

0.1626

0.1626

0.2157

0.2157

0.2448

0.2448

0.2854

0.2854

0.3062

0.3062

0.3698

0.3698

0.4135

0.4135

0.4668

0.4668

0.5524

0.5524

0.6740

0.6740

ans =

3.0056

3.0056

3.0789

3.0789

3.1033

3.1033

3.1448

3.1448

3.1636

3.1636

3.1903

3.1903

3.8641

3.8641

4.1900

4.1900

4.5746

4.5746

4.9183

4.9183

5.1581

5.1581

5.6362

5.6362

ans =

0.6842

0.6842

0.8247

0.8247

0.9352

0.9352

0.9747

0.9747

1.0933

1.0933

1.1683

1.1683

2.0985

2.0985

2.3157

2.3157

2.5438

2.5438

2.6892

2.6892

2.9404

2.9404

3.1286

3.1286

5.0643

5.0643

5.1831

5.1831

5.2664

5.2664

5.2706

5.2706

5.3649

5.3649

5.3702

5.3702

5.6886

5.6886

6.0804

6.0804

6.6314

6.6314

7.1672

7.1672

7.3593

7.3593

8.2127

8.2127

历时 464.313648 秒。

>>

## k=1，τ=0.3，不可行

>> LMI

tau\_u =

0.3000

K =

1 0 0 0 0 0

0 1 0 0 0 0

0 0 1 0 0 0

0 0 0 1 0 0

0 0 0 0 1 0

0 0 0 0 0 1

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.069654

2 5.515459e-03

3 5.515459e-03

4 7.885372e-04

5 7.885372e-04

6 1.055098e-04

7 1.055098e-04

8 1.653645e-05

9 1.653645e-05

10 3.193140e-06

11 3.193140e-06

12 3.193140e-06

13 2.788905e-07

14 2.788905e-07

15 3.814830e-08

16 3.814830e-08

17 4.405616e-09

18 4.405616e-09

19 4.123135e-10

20 3.852090e-10

21 3.402413e-10

\*\*\* new lower bound: -9.985690e-12

22 1.861870e-10

\*\*\* new lower bound: -4.435139e-12

23 9.787200e-11

\*\*\* new lower bound: -2.273530e-12

24 5.030224e-11

\*\*\* new lower bound: -1.267162e-12

Result: best value of t: 5.030224e-11

f-radius saturation: 0.000% of R = 1.00e+09

Marginal infeasibility: these LMI constraints may be

feasible but are not strictly feasible

ans =

1.0e-06 \*

列 1 至 7

0.5833 0 -0.0355 0 0.0061 0 0.0007

0 0.5833 0 -0.0355 0 0.0061 0

-0.0355 0 0.1750 0 -0.0098 0 0.0055

0 -0.0355 0 0.1750 0 -0.0098 0

0.0061 0 -0.0098 0 0.0850 0 -0.0146

0 0.0061 0 -0.0098 0 0.0850 0

0.0007 0 0.0055 0 -0.0146 0 0.4988

0 0.0007 0 0.0055 0 -0.0146 0

-0.0007 0 -0.0186 0 -0.0023 0 0.0006

0 -0.0007 0 -0.0186 0 -0.0023 0

-0.0119 0 -0.0032 0 -0.0058 0 -0.0006

0 -0.0119 0 -0.0032 0 -0.0058 0

0.2985 0 0.0130 0 0.0002 0 -0.0003

0 0.2985 0 0.0130 0 0.0002 0

-0.0593 0 0.0667 0 0.0029 0 -0.0006

0 -0.0593 0 0.0667 0 0.0029 0

-0.0006 0 -0.0145 0 0.0196 0 -0.0166

0 -0.0006 0 -0.0145 0 0.0196 0

0.0000 0 -0.0008 0 0.0049 0 0.2551

0 0.0000 0 -0.0008 0 0.0049 0

-0.0001 0 -0.0310 0 -0.0014 0 0.0003

0 -0.0001 0 -0.0310 0 -0.0014 0

-0.0207 0 -0.0017 0 -0.0158 0 -0.0004

0 -0.0207 0 -0.0017 0 -0.0158 0

列 8 至 14

0 -0.0007 0 -0.0119 0 0.2985 0

0.0007 0 -0.0007 0 -0.0119 0 0.2985

0 -0.0186 0 -0.0032 0 0.0130 0

0.0055 0 -0.0186 0 -0.0032 0 0.0130

0 -0.0023 0 -0.0058 0 0.0002 0

-0.0146 0 -0.0023 0 -0.0058 0 0.0002

0 0.0006 0 -0.0006 0 -0.0003 0

0.4988 0 0.0006 0 -0.0006 0 -0.0003

0 0.1026 0 0.0000 0 0.0012 0

0.0006 0 0.1026 0 0.0000 0 0.0012

0 0.0000 0 0.0732 0 0.0051 0

-0.0006 0 0.0000 0 0.0732 0 0.0051

0 0.0012 0 0.0051 0 0.1426 0

-0.0003 0 0.0012 0 0.0051 0 0.1426

0 0.0027 0 -0.0011 0 -0.0154 0

-0.0006 0 0.0027 0 -0.0011 0 -0.0154

0 -0.0010 0 0.0001 0 0.0004 0

-0.0166 0 -0.0010 0 0.0001 0 0.0004

0 -0.0002 0 0.0003 0 -0.0004 0

0.2551 0 -0.0002 0 0.0003 0 -0.0004

0 0.0298 0 -0.0000 0 0.0007 0

0.0003 0 0.0298 0 -0.0000 0 0.0007

0 -0.0001 0 0.0093 0 -0.0063 0

-0.0004 0 -0.0001 0 0.0093 0 -0.0063

列 15 至 21

-0.0593 0 -0.0006 0 0.0000 0 -0.0001

0 -0.0593 0 -0.0006 0 0.0000 0

0.0667 0 -0.0145 0 -0.0008 0 -0.0310

0 0.0667 0 -0.0145 0 -0.0008 0

0.0029 0 0.0196 0 0.0049 0 -0.0014

0 0.0029 0 0.0196 0 0.0049 0

-0.0006 0 -0.0166 0 0.2551 0 0.0003

0 -0.0006 0 -0.0166 0 0.2551 0

0.0027 0 -0.0010 0 -0.0002 0 0.0298

0 0.0027 0 -0.0010 0 -0.0002 0

-0.0011 0 0.0001 0 0.0003 0 -0.0000

0 -0.0011 0 0.0001 0 0.0003 0

-0.0154 0 0.0004 0 -0.0004 0 0.0007

0 -0.0154 0 0.0004 0 -0.0004 0

0.0211 0 -0.0029 0 -0.0003 0 -0.0035

0 0.0211 0 -0.0029 0 -0.0003 0

-0.0029 0 0.0012 0 -0.0058 0 -0.0006

0 -0.0029 0 0.0012 0 -0.0058 0

-0.0003 0 -0.0058 0 0.1291 0 0.0002

0 -0.0003 0 -0.0058 0 0.1291 0

-0.0035 0 -0.0006 0 0.0002 0 0.0148

0 -0.0035 0 -0.0006 0 0.0002 0

-0.0014 0 0.0011 0 0.0001 0 0.0000

0 -0.0014 0 0.0011 0 0.0001 0

列 22 至 24

0 -0.0207 0

-0.0001 0 -0.0207

0 -0.0017 0

-0.0310 0 -0.0017

0 -0.0158 0

-0.0014 0 -0.0158

0 -0.0004 0

0.0003 0 -0.0004

0 -0.0001 0

0.0298 0 -0.0001

0 0.0093 0

-0.0000 0 0.0093

0 -0.0063 0

0.0007 0 -0.0063

0 -0.0014 0

-0.0035 0 -0.0014

0 0.0011 0

-0.0006 0 0.0011

0 0.0001 0

0.0002 0 0.0001

0 0.0000 0

0.0148 0 0.0000

0 0.0063 0

0.0000 0 0.0063

ans =

1.0e-06 \*

列 1 至 7

0.6597 0 -0.0628 0 0.0110 0 -0.0004

0 0.6597 0 -0.0628 0 0.0110 0

-0.0628 0 0.3040 0 -0.0148 0 0.0126

0 -0.0628 0 0.3040 0 -0.0148 0

0.0110 0 -0.0148 0 0.1835 0 -0.0197

0 0.0110 0 -0.0148 0 0.1835 0

-0.0004 0 0.0126 0 -0.0197 0 0.5402

0 -0.0004 0 0.0126 0 -0.0197 0

-0.0038 0 -0.0269 0 -0.0010 0 0.0008

0 -0.0038 0 -0.0269 0 -0.0010 0

-0.0117 0 -0.0022 0 -0.0074 0 -0.0016

0 -0.0117 0 -0.0022 0 -0.0074 0

0.1948 0 0.0089 0 0.0018 0 -0.0005

0 0.1948 0 0.0089 0 0.0018 0

-0.0605 0 0.0381 0 0.0016 0 0.0020

0 -0.0605 0 0.0381 0 0.0016 0

0.0022 0 -0.0116 0 0.0058 0 -0.0145

0 0.0022 0 -0.0116 0 0.0058 0

-0.0005 0 0.0022 0 0.0042 0 0.1373

0 -0.0005 0 0.0022 0 0.0042 0

0.0032 0 -0.0245 0 0.0002 0 0.0005

0 0.0032 0 -0.0245 0 0.0002 0

-0.0170 0 0.0013 0 -0.0106 0 -0.0000

0 -0.0170 0 0.0013 0 -0.0106 0

列 8 至 14

0 -0.0038 0 -0.0117 0 0.1948 0

-0.0004 0 -0.0038 0 -0.0117 0 0.1948

0 -0.0269 0 -0.0022 0 0.0089 0

0.0126 0 -0.0269 0 -0.0022 0 0.0089

0 -0.0010 0 -0.0074 0 0.0018 0

-0.0197 0 -0.0010 0 -0.0074 0 0.0018

0 0.0008 0 -0.0016 0 -0.0005 0

0.5402 0 0.0008 0 -0.0016 0 -0.0005

0 0.1990 0 0.0010 0 -0.0009 0

0.0008 0 0.1990 0 0.0010 0 -0.0009

0 0.0010 0 0.1571 0 0.0059 0

-0.0016 0 0.0010 0 0.1571 0 0.0059

0 -0.0009 0 0.0059 0 0.0458 0

-0.0005 0 -0.0009 0 0.0059 0 0.0458

0 0.0017 0 0.0005 0 -0.0117 0

0.0020 0 0.0017 0 0.0005 0 -0.0117

0 0.0006 0 0.0001 0 0.0014 0

-0.0145 0 0.0006 0 0.0001 0 0.0014

0 -0.0002 0 -0.0004 0 -0.0002 0

0.1373 0 -0.0002 0 -0.0004 0 -0.0002

0 0.0071 0 0.0003 0 0.0008 0

0.0005 0 0.0071 0 0.0003 0 0.0008

0 0.0002 0 -0.0036 0 -0.0026 0

-0.0000 0 0.0002 0 -0.0036 0 -0.0026

列 15 至 21

-0.0605 0 0.0022 0 -0.0005 0 0.0032

0 -0.0605 0 0.0022 0 -0.0005 0

0.0381 0 -0.0116 0 0.0022 0 -0.0245

0 0.0381 0 -0.0116 0 0.0022 0

0.0016 0 0.0058 0 0.0042 0 0.0002

0 0.0016 0 0.0058 0 0.0042 0

0.0020 0 -0.0145 0 0.1373 0 0.0005

0 0.0020 0 -0.0145 0 0.1373 0

0.0017 0 0.0006 0 -0.0002 0 0.0071

0 0.0017 0 0.0006 0 -0.0002 0

0.0005 0 0.0001 0 -0.0004 0 0.0003

0 0.0005 0 0.0001 0 -0.0004 0

-0.0117 0 0.0014 0 -0.0002 0 0.0008

0 -0.0117 0 0.0014 0 -0.0002 0

-0.0182 0 -0.0010 0 0.0013 0 -0.0016

0 -0.0182 0 -0.0010 0 0.0013 0

-0.0010 0 -0.0336 0 -0.0025 0 0.0003

0 -0.0010 0 -0.0336 0 -0.0025 0

0.0013 0 -0.0025 0 0.0180 0 0.0001

0 0.0013 0 -0.0025 0 0.0180 0

-0.0016 0 0.0003 0 0.0001 0 -0.0278

0 -0.0016 0 0.0003 0 0.0001 0

0.0005 0 0.0006 0 -0.0000 0 0.0000

0 0.0005 0 0.0006 0 -0.0000 0

列 22 至 24

0 -0.0170 0

0.0032 0 -0.0170

0 0.0013 0

-0.0245 0 0.0013

0 -0.0106 0

0.0002 0 -0.0106

0 -0.0000 0

0.0005 0 -0.0000

0 0.0002 0

0.0071 0 0.0002

0 -0.0036 0

0.0003 0 -0.0036

0 -0.0026 0

0.0008 0 -0.0026

0 0.0005 0

-0.0016 0 0.0005

0 0.0006 0

0.0003 0 0.0006

0 -0.0000 0

0.0001 0 -0.0000

0 0.0000 0

-0.0278 0 0.0000

0 -0.0318 0

0.0000 0 -0.0318

ans =

1.0e-05 \*

列 1 至 7

0.4850 0 0.0231 0 0.0063 0 0.0013

0 0.4850 0 0.0231 0 0.0063 0

0.0231 0 0.3448 0 0.0107 0 0.0060

0 0.0231 0 0.3448 0 0.0107 0

0.0063 0 0.0107 0 0.2127 0 0.0079

0 0.0063 0 0.0107 0 0.2127 0

0.0013 0 0.0060 0 0.0079 0 0.4622

0 0.0013 0 0.0060 0 0.0079 0

0.0013 0 0.0245 0 -0.0025 0 0.0000

0 0.0013 0 0.0245 0 -0.0025 0

0.0139 0 -0.0039 0 0.0188 0 0.0009

0 0.0139 0 -0.0039 0 0.0188 0

0.2228 0 0.0219 0 0.0007 0 0.0001

0 0.2228 0 0.0219 0 0.0007 0

-0.0244 0 0.0616 0 0.0039 0 -0.0004

0 -0.0244 0 0.0616 0 0.0039 0

-0.0018 0 -0.0059 0 0.0191 0 -0.0062

0 -0.0018 0 -0.0059 0 0.0191 0

0.0001 0 -0.0002 0 0.0069 0 0.1844

0 0.0001 0 -0.0002 0 0.0069 0

-0.0026 0 -0.0147 0 -0.0001 0 0.0000

0 -0.0026 0 -0.0147 0 -0.0001 0

-0.0090 0 -0.0000 0 -0.0073 0 -0.0009

0 -0.0090 0 -0.0000 0 -0.0073 0

列 8 至 14

0 0.0013 0 0.0139 0 0.2228 0

0.0013 0 0.0013 0 0.0139 0 0.2228

0 0.0245 0 -0.0039 0 0.0219 0

0.0060 0 0.0245 0 -0.0039 0 0.0219

0 -0.0025 0 0.0188 0 0.0007 0

0.0079 0 -0.0025 0 0.0188 0 0.0007

0 0.0000 0 0.0009 0 0.0001 0

0.4622 0 0.0000 0 0.0009 0 0.0001

0 0.3000 0 -0.0000 0 0.0015 0

0.0000 0 0.3000 0 -0.0000 0 0.0015

0 -0.0000 0 0.2571 0 0.0079 0

0.0009 0 -0.0000 0 0.2571 0 0.0079

0 0.0015 0 0.0079 0 0.2551 0

0.0001 0 0.0015 0 0.0079 0 0.2551

0 0.0061 0 0.0004 0 0.0068 0

-0.0004 0 0.0061 0 0.0004 0 0.0068

0 -0.0000 0 -0.0002 0 0.0007 0

-0.0062 0 -0.0000 0 -0.0002 0 0.0007

0 -0.0002 0 0.0003 0 0.0001 0

0.1844 0 -0.0002 0 0.0003 0 0.0001

0 0.0267 0 0.0002 0 0.0009 0

0.0000 0 0.0267 0 0.0002 0 0.0009

0 0.0000 0 0.0136 0 0.0029 0

-0.0009 0 0.0000 0 0.0136 0 0.0029

列 15 至 21

-0.0244 0 -0.0018 0 0.0001 0 -0.0026

0 -0.0244 0 -0.0018 0 0.0001 0

0.0616 0 -0.0059 0 -0.0002 0 -0.0147

0 0.0616 0 -0.0059 0 -0.0002 0

0.0039 0 0.0191 0 0.0069 0 -0.0001

0 0.0039 0 0.0191 0 0.0069 0

-0.0004 0 -0.0062 0 0.1844 0 0.0000

0 -0.0004 0 -0.0062 0 0.1844 0

0.0061 0 -0.0000 0 -0.0002 0 0.0267

0 0.0061 0 -0.0000 0 -0.0002 0

0.0004 0 -0.0002 0 0.0003 0 0.0002

0 0.0004 0 -0.0002 0 0.0003 0

0.0068 0 0.0007 0 0.0001 0 0.0009

0 0.0068 0 0.0007 0 0.0001 0

0.0798 0 0.0014 0 0.0004 0 0.0028

0 0.0798 0 0.0014 0 0.0004 0

0.0014 0 0.0226 0 0.0021 0 -0.0005

0 0.0014 0 0.0226 0 0.0021 0

0.0004 0 0.0021 0 0.2182 0 -0.0001

0 0.0004 0 0.0021 0 0.2182 0

0.0028 0 -0.0005 0 -0.0001 0 0.0469

0 0.0028 0 -0.0005 0 -0.0001 0

-0.0005 0 0.0009 0 0.0002 0 -0.0001

0 -0.0005 0 0.0009 0 0.0002 0

列 22 至 24

0 -0.0090 0

-0.0026 0 -0.0090

0 -0.0000 0

-0.0147 0 -0.0000

0 -0.0073 0

-0.0001 0 -0.0073

0 -0.0009 0

0.0000 0 -0.0009

0 0.0000 0

0.0267 0 0.0000

0 0.0136 0

0.0002 0 0.0136

0 0.0029 0

0.0009 0 0.0029

0 -0.0005 0

0.0028 0 -0.0005

0 0.0009 0

-0.0005 0 0.0009

0 0.0002 0

-0.0001 0 0.0002

0 -0.0001 0

0.0469 0 -0.0001

0 0.0281 0

-0.0001 0 0.0281

ans =

1.0e-05 \*

列 1 至 7

-0.3859 0 -0.0123 0 -0.0039 0 -0.0007

0 -0.3859 0 -0.0123 0 -0.0039 0

-0.0280 0 -0.2855 0 -0.0029 0 -0.0032

0 -0.0280 0 -0.2855 0 -0.0029 0

-0.0036 0 -0.0129 0 -0.1777 0 -0.0122

0 -0.0036 0 -0.0129 0 -0.1777 0

-0.0008 0 -0.0040 0 -0.0006 0 -0.3754

0 -0.0008 0 -0.0040 0 -0.0006 0

-0.0030 0 -0.0273 0 0.0027 0 0.0004

0 -0.0030 0 -0.0273 0 0.0027 0

-0.0179 0 0.0040 0 -0.0170 0 -0.0015

0 -0.0179 0 0.0040 0 -0.0170 0

-0.1213 0 -0.0172 0 -0.0003 0 -0.0000

0 -0.1213 0 -0.0172 0 -0.0003 0

0.0129 0 -0.0346 0 -0.0027 0 0.0003

0 0.0129 0 -0.0346 0 -0.0027 0

0.0020 0 0.0028 0 -0.0086 0 0.0019

0 0.0020 0 0.0028 0 -0.0086 0

-0.0001 0 -0.0002 0 -0.0047 0 -0.0957

0 -0.0001 0 -0.0002 0 -0.0047 0

0.0020 0 0.0080 0 -0.0003 0 0.0001

0 0.0020 0 0.0080 0 -0.0003 0

0.0034 0 -0.0006 0 0.0045 0 0.0004

0 0.0034 0 -0.0006 0 0.0045 0

列 8 至 14

0 -0.0002 0 -0.0029 0 -0.1535 0

-0.0007 0 -0.0002 0 -0.0029 0 -0.1535

0 -0.0112 0 0.0045 0 -0.0141 0

-0.0032 0 -0.0112 0 0.0045 0 -0.0141

0 0.0028 0 -0.0086 0 0.0008 0

-0.0122 0 0.0028 0 -0.0086 0 0.0008

0 -0.0000 0 -0.0001 0 0.0000 0

-0.3754 0 -0.0000 0 -0.0001 0 0.0000

0 -0.2517 0 0.0002 0 -0.0015 0

0.0004 0 -0.2517 0 0.0002 0 -0.0015

0 0.0003 0 -0.2130 0 -0.0055 0

-0.0015 0 0.0003 0 -0.2130 0 -0.0055

0 -0.0001 0 -0.0056 0 -0.1228 0

-0.0000 0 -0.0001 0 -0.0056 0 -0.1228

0 -0.0049 0 -0.0007 0 -0.0076 0

0.0003 0 -0.0049 0 -0.0007 0 -0.0076

0 -0.0003 0 0.0001 0 0.0003 0

0.0019 0 -0.0003 0 0.0001 0 0.0003

0 0.0001 0 0.0001 0 -0.0002 0

-0.0957 0 0.0001 0 0.0001 0 -0.0002

0 -0.0127 0 -0.0001 0 -0.0000 0

0.0001 0 -0.0127 0 -0.0001 0 -0.0000

0 -0.0000 0 -0.0055 0 -0.0036 0

0.0004 0 -0.0000 0 -0.0055 0 -0.0036

列 15 至 21

0.0108 0 0.0026 0 0.0002 0 0.0033

0 0.0108 0 0.0026 0 0.0002 0

-0.0537 0 0.0041 0 0.0013 0 0.0095

0 -0.0537 0 0.0041 0 0.0013 0

-0.0033 0 -0.0181 0 -0.0056 0 0.0000

0 -0.0033 0 -0.0181 0 -0.0056 0

0.0013 0 0.0044 0 -0.1286 0 0.0001

0 0.0013 0 0.0044 0 -0.1286 0

-0.0050 0 0.0000 0 0.0003 0 -0.0250

0 -0.0050 0 0.0000 0 0.0003 0

-0.0003 0 0.0014 0 -0.0004 0 -0.0001

0 -0.0003 0 0.0014 0 -0.0004 0

-0.0051 0 -0.0002 0 -0.0001 0 -0.0002

0 -0.0051 0 -0.0002 0 -0.0001 0

-0.0381 0 -0.0008 0 -0.0001 0 -0.0014

0 -0.0381 0 -0.0008 0 -0.0001 0

-0.0011 0 -0.0086 0 -0.0028 0 0.0001

0 -0.0011 0 -0.0086 0 -0.0028 0

-0.0003 0 -0.0010 0 -0.1005 0 0.0000

0 -0.0003 0 -0.0010 0 -0.1005 0

-0.0016 0 0.0001 0 0.0001 0 -0.0189

0 -0.0016 0 0.0001 0 0.0001 0

-0.0001 0 0.0002 0 -0.0001 0 -0.0000

0 -0.0001 0 0.0002 0 -0.0001 0

列 22 至 24

0 0.0079 0

0.0033 0 0.0079

0 0.0003 0

0.0095 0 0.0003

0 0.0063 0

0.0000 0 0.0063

0 0.0011 0

0.0001 0 0.0011

0 0.0000 0

-0.0250 0 0.0000

0 -0.0130 0

-0.0001 0 -0.0130

0 -0.0012 0

-0.0002 0 -0.0012

0 -0.0000 0

-0.0014 0 -0.0000

0 -0.0000 0

0.0001 0 -0.0000

0 0.0001 0

0.0000 0 0.0001

0 0.0000 0

-0.0189 0 0.0000

0 -0.0100 0

-0.0000 0 -0.0100

ans =

1.0e-09 \*

-0.0161

-0.0161

-0.0106

-0.0106

-0.0056

-0.0056

-0.0027

-0.0027

0.0048

0.0048

0.0056

0.0056

0.0726

0.0726

0.0941

0.0941

0.1085

0.1085

0.2109

0.2109

0.6298

0.6298

0.7414

0.7414

ans =

1.0e-09 \*

-0.0350

-0.0350

-0.0330

-0.0330

-0.0300

-0.0300

-0.0270

-0.0270

-0.0162

-0.0162

-0.0123

-0.0123

0.1555

0.1555

0.1828

0.1828

0.1940

0.1940

0.3102

0.3102

0.5759

0.5759

0.7311

0.7311

ans =

1.0e-08 \*

0.0197

0.0197

0.0266

0.0266

0.0419

0.0419

0.0618

0.0618

0.1189

0.1189

0.1244

0.1244

0.2073

0.2073

0.2638

0.2638

0.2945

0.2945

0.3664

0.3664

0.5617

0.5617

0.6254

0.6254

ans =

1.0e-07 \*

0.0011

0.0011

0.0016

0.0016

0.0020

0.0020

0.0023

0.0023

0.0025

0.0025

0.0028

0.0028

0.0034

0.0034

0.0037

0.0037

0.0038

0.0038

0.0047

0.0047

0.0049

0.0049

0.0062

0.0062

0.0069

0.0069

0.0095

0.0095

0.0165

0.0165

0.0185

0.0185

0.0196

0.0196

0.0214

0.0214

0.0382

0.0382

0.0481

0.0481

0.0540

0.0540

0.0665

0.0665

0.0973

0.0973

0.1070

0.1070

历时 1390.339061 秒。

>>

## k=0.1，τ=0.3，不可行

>> LMI

tau\_u =

0.3000

K =

0.1000 0 0 0 0 0

0 0.1000 0 0 0 0

0 0 0.1000 0 0 0

0 0 0 0.1000 0 0

0 0 0 0 0.1000 0

0 0 0 0 0 0.1000

Solver for LMI feasibility problems L(x) < R(x)

This solver minimizes t subject to L(x) < R(x) + t\*I

The best value of t should be negative for feasibility

Iteration : Best value of t so far

1 0.052012

2 3.183920e-03

3 3.183920e-03

4 4.697274e-04

5 4.697274e-04

6 6.057251e-05

7 6.057251e-05

8 9.203222e-06

9 9.203222e-06

10 1.770867e-06

11 1.770867e-06

12 7.750230e-07

13 7.750230e-07

14 3.625751e-08

15 3.625751e-08

16 3.140693e-09

17 2.948702e-09

18 2.614350e-09

19 2.347746e-09

\*\*\* new lower bound: -8.310690e-11

20 1.315782e-09

\*\*\* new lower bound: -3.942315e-11

21 6.737369e-10

\*\*\* new lower bound: -2.151073e-11

22 3.674226e-10

\*\*\* new lower bound: -1.287851e-11

23 1.845401e-10

\*\*\* new lower bound: -8.098331e-12

24 1.034984e-10

\*\*\* new lower bound: -5.321786e-12

25 5.594024e-11

\*\*\* new lower bound: -3.576525e-12

Result: best value of t: 5.594024e-11

f-radius saturation: 0.000% of R = 1.00e+09

Marginal infeasibility: these LMI constraints may be

feasible but are not strictly feasible

ans =

1.0e-06 \*

列 1 至 7

0.4528 0 -0.0072 0 0.0143 0 0.0113

0 0.4528 0 -0.0072 0 0.0143 0

-0.0072 0 0.3112 0 -0.0326 0 0.0388

0 -0.0072 0 0.3112 0 -0.0326 0

0.0143 0 -0.0326 0 0.2274 0 -0.0348

0 0.0143 0 -0.0326 0 0.2274 0

0.0113 0 0.0388 0 -0.0348 0 0.3346

0 0.0113 0 0.0388 0 -0.0348 0

-0.0348 0 -0.0258 0 0.0005 0 -0.0018

0 -0.0348 0 -0.0258 0 0.0005 0

-0.0317 0 -0.0131 0 0.0004 0 -0.0130

0 -0.0317 0 -0.0131 0 0.0004 0

-0.0263 0 0.1027 0 0.0028 0 -0.0038

0 -0.0263 0 0.1027 0 0.0028 0

-0.1511 0 -0.0020 0 0.0592 0 -0.0139

0 -0.1511 0 -0.0020 0 0.0592 0

-0.0237 0 -0.0705 0 0.0477 0 -0.0738

0 -0.0237 0 -0.0705 0 0.0477 0

-0.0069 0 -0.0156 0 0.0696 0 0.0330

0 -0.0069 0 -0.0156 0 0.0696 0

-0.0151 0 -0.1091 0 -0.0016 0 -0.0017

0 -0.0151 0 -0.1091 0 -0.0016 0

-0.1052 0 -0.0108 0 -0.0651 0 -0.0124

0 -0.1052 0 -0.0108 0 -0.0651 0

列 8 至 14

0 -0.0348 0 -0.0317 0 -0.0263 0

0.0113 0 -0.0348 0 -0.0317 0 -0.0263

0 -0.0258 0 -0.0131 0 0.1027 0

0.0388 0 -0.0258 0 -0.0131 0 0.1027

0 0.0005 0 0.0004 0 0.0028 0

-0.0348 0 0.0005 0 0.0004 0 0.0028

0 -0.0018 0 -0.0130 0 -0.0038 0

0.3346 0 -0.0018 0 -0.0130 0 -0.0038

0 0.2258 0 0.0060 0 0.0243 0

-0.0018 0 0.2258 0 0.0060 0 0.0243

0 0.0060 0 0.1855 0 0.0806 0

-0.0130 0 0.0060 0 0.1855 0 0.0806

0 0.0243 0 0.0806 0 0.1586 0

-0.0038 0 0.0243 0 0.0806 0 0.1586

0 0.0786 0 0.0107 0 0.0217 0

-0.0139 0 0.0786 0 0.0107 0 0.0217

0 -0.0013 0 0.0400 0 0.0033 0

-0.0738 0 -0.0013 0 0.0400 0 0.0033

0 -0.0003 0 0.0155 0 0.0043 0

0.0330 0 -0.0003 0 0.0155 0 0.0043

0 0.0492 0 -0.0013 0 -0.0091 0

-0.0017 0 0.0492 0 -0.0013 0 -0.0091

0 0.0012 0 0.0421 0 0.0079 0

-0.0124 0 0.0012 0 0.0421 0 0.0079

列 15 至 21

-0.1511 0 -0.0237 0 -0.0069 0 -0.0151

0 -0.1511 0 -0.0237 0 -0.0069 0

-0.0020 0 -0.0705 0 -0.0156 0 -0.1091

0 -0.0020 0 -0.0705 0 -0.0156 0

0.0592 0 0.0477 0 0.0696 0 -0.0016

0 0.0592 0 0.0477 0 0.0696 0

-0.0139 0 -0.0738 0 0.0330 0 -0.0017

0 -0.0139 0 -0.0738 0 0.0330 0

0.0786 0 -0.0013 0 -0.0003 0 0.0492

0 0.0786 0 -0.0013 0 -0.0003 0

0.0107 0 0.0400 0 0.0155 0 -0.0013

0 0.0107 0 0.0400 0 0.0155 0

0.0217 0 0.0033 0 0.0043 0 -0.0091

0 0.0217 0 0.0033 0 0.0043 0

0.1069 0 0.0067 0 0.0108 0 0.0142

0 0.1069 0 0.0067 0 0.0108 0

0.0067 0 0.0499 0 0.0045 0 0.0034

0 0.0067 0 0.0499 0 0.0045 0

0.0108 0 0.0045 0 0.1223 0 0.0006

0 0.0108 0 0.0045 0 0.1223 0

0.0142 0 0.0034 0 0.0006 0 0.0860

0 0.0142 0 0.0034 0 0.0006 0

0.0030 0 0.0113 0 -0.0025 0 0.0023

0 0.0030 0 0.0113 0 -0.0025 0

列 22 至 24

0 -0.1052 0

-0.0151 0 -0.1052

0 -0.0108 0

-0.1091 0 -0.0108

0 -0.0651 0

-0.0016 0 -0.0651

0 -0.0124 0

-0.0017 0 -0.0124

0 0.0012 0

0.0492 0 0.0012

0 0.0421 0

-0.0013 0 0.0421

0 0.0079 0

-0.0091 0 0.0079

0 0.0030 0

0.0142 0 0.0030

0 0.0113 0

0.0034 0 0.0113

0 -0.0025 0

0.0006 0 -0.0025

0 0.0023 0

0.0860 0 0.0023

0 0.0674 0

0.0023 0 0.0674

ans =

1.0e-06 \*

列 1 至 7

0.1307 0 0.0170 0 -0.0031 0 0.0003

0 0.1307 0 0.0170 0 -0.0031 0

0.0170 0 0.1726 0 0.0071 0 0.0175

0 0.0170 0 0.1726 0 0.0071 0

-0.0031 0 0.0071 0 0.1932 0 0.0074

0 -0.0031 0 0.0071 0 0.1932 0

0.0003 0 0.0175 0 0.0074 0 0.1266

0 0.0003 0 0.0175 0 0.0074 0

-0.0229 0 -0.0005 0 0.0182 0 0.0035

0 -0.0229 0 -0.0005 0 0.0182 0

0.0126 0 0.0174 0 0.0014 0 -0.0151

0 0.0126 0 0.0174 0 0.0014 0

-0.0130 0 0.0176 0 -0.0010 0 -0.0008

0 -0.0130 0 0.0176 0 -0.0010 0

-0.0194 0 -0.0145 0 0.0119 0 -0.0018

0 -0.0194 0 -0.0145 0 0.0119 0

-0.0008 0 -0.0091 0 -0.0105 0 -0.0094

0 -0.0008 0 -0.0091 0 -0.0105 0

-0.0016 0 -0.0020 0 0.0146 0 -0.0094

0 -0.0016 0 -0.0020 0 0.0146 0

0.0020 0 -0.0155 0 -0.0022 0 0.0005

0 0.0020 0 -0.0155 0 -0.0022 0

-0.0093 0 -0.0015 0 -0.0141 0 0.0000

0 -0.0093 0 -0.0015 0 -0.0141 0

列 8 至 14

0 -0.0229 0 0.0126 0 -0.0130 0

0.0003 0 -0.0229 0 0.0126 0 -0.0130

0 -0.0005 0 0.0174 0 0.0176 0

0.0175 0 -0.0005 0 0.0174 0 0.0176

0 0.0182 0 0.0014 0 -0.0010 0

0.0074 0 0.0182 0 0.0014 0 -0.0010

0 0.0035 0 -0.0151 0 -0.0008 0

0.1266 0 0.0035 0 -0.0151 0 -0.0008

0 0.1543 0 -0.0030 0 0.0019 0

0.0035 0 0.1543 0 -0.0030 0 0.0019

0 -0.0030 0 0.1791 0 0.0164 0

-0.0151 0 -0.0030 0 0.1791 0 0.0164

0 0.0019 0 0.0164 0 -0.0127 0

-0.0008 0 0.0019 0 0.0164 0 -0.0127

0 0.0119 0 -0.0014 0 0.0099 0

-0.0018 0 0.0119 0 -0.0014 0 0.0099

0 -0.0014 0 0.0046 0 0.0028 0

-0.0094 0 -0.0014 0 0.0046 0 0.0028

0 -0.0003 0 0.0010 0 0.0011 0

-0.0094 0 -0.0003 0 0.0010 0 0.0011

0 -0.0102 0 -0.0012 0 0.0003 0

0.0005 0 -0.0102 0 -0.0012 0 0.0003

0 -0.0019 0 -0.0106 0 0.0065 0

0.0000 0 -0.0019 0 -0.0106 0 0.0065

列 15 至 21

-0.0194 0 -0.0008 0 -0.0016 0 0.0020

0 -0.0194 0 -0.0008 0 -0.0016 0

-0.0145 0 -0.0091 0 -0.0020 0 -0.0155

0 -0.0145 0 -0.0091 0 -0.0020 0

0.0119 0 -0.0105 0 0.0146 0 -0.0022

0 0.0119 0 -0.0105 0 0.0146 0

-0.0018 0 -0.0094 0 -0.0094 0 0.0005

0 -0.0018 0 -0.0094 0 -0.0094 0

0.0119 0 -0.0014 0 -0.0003 0 -0.0102

0 0.0119 0 -0.0014 0 -0.0003 0

-0.0014 0 0.0046 0 0.0010 0 -0.0012

0 -0.0014 0 0.0046 0 0.0010 0

0.0099 0 0.0028 0 0.0011 0 0.0003

0 0.0099 0 0.0028 0 0.0011 0

-0.0174 0 0.0036 0 0.0027 0 0.0081

0 -0.0174 0 0.0036 0 0.0027 0

0.0036 0 -0.0316 0 0.0038 0 -0.0000

0 0.0036 0 -0.0316 0 0.0038 0

0.0027 0 0.0038 0 -0.0167 0 -0.0002

0 0.0027 0 0.0038 0 -0.0167 0

0.0081 0 -0.0000 0 -0.0002 0 -0.0197

0 0.0081 0 -0.0000 0 -0.0002 0

0.0002 0 0.0069 0 0.0004 0 0.0001

0 0.0002 0 0.0069 0 0.0004 0

列 22 至 24

0 -0.0093 0

0.0020 0 -0.0093

0 -0.0015 0

-0.0155 0 -0.0015

0 -0.0141 0

-0.0022 0 -0.0141

0 0.0000 0

0.0005 0 0.0000

0 -0.0019 0

-0.0102 0 -0.0019

0 -0.0106 0

-0.0012 0 -0.0106

0 0.0065 0

0.0003 0 0.0065

0 0.0002 0

0.0081 0 0.0002

0 0.0069 0

-0.0000 0 0.0069

0 0.0004 0

-0.0002 0 0.0004

0 0.0001 0

-0.0197 0 0.0001

0 -0.0218 0

0.0001 0 -0.0218

ans =

1.0e-05 \*

列 1 至 7

0.7406 0 0.0590 0 0.0232 0 0.0108

0 0.7406 0 0.0590 0 0.0232 0

0.0590 0 0.6428 0 0.0188 0 0.0293

0 0.0590 0 0.6428 0 0.0188 0

0.0232 0 0.0188 0 0.4475 0 0.0140

0 0.0232 0 0.0188 0 0.4475 0

0.0108 0 0.0293 0 0.0140 0 0.6018

0 0.0108 0 0.0293 0 0.0140 0

-0.0068 0 0.0428 0 -0.0052 0 0.0003

0 -0.0068 0 0.0428 0 -0.0052 0

0.0358 0 -0.0083 0 0.0410 0 -0.0017

0 0.0358 0 -0.0083 0 0.0410 0

0.0514 0 0.0114 0 -0.0008 0 0.0005

0 0.0514 0 0.0114 0 -0.0008 0

-0.0366 0 0.0243 0 0.0005 0 -0.0019

0 -0.0366 0 0.0243 0 0.0005 0

-0.0051 0 -0.0197 0 0.0219 0 -0.0172

0 -0.0051 0 -0.0197 0 0.0219 0

-0.0011 0 -0.0011 0 0.0031 0 0.0401

0 -0.0011 0 -0.0011 0 0.0031 0

-0.0057 0 -0.0328 0 -0.0031 0 -0.0014

0 -0.0057 0 -0.0328 0 -0.0031 0

-0.0241 0 -0.0080 0 -0.0203 0 -0.0027

0 -0.0241 0 -0.0080 0 -0.0203 0

列 8 至 14

0 -0.0068 0 0.0358 0 0.0514 0

0.0108 0 -0.0068 0 0.0358 0 0.0514

0 0.0428 0 -0.0083 0 0.0114 0

0.0293 0 0.0428 0 -0.0083 0 0.0114

0 -0.0052 0 0.0410 0 -0.0008 0

0.0140 0 -0.0052 0 0.0410 0 -0.0008

0 0.0003 0 -0.0017 0 0.0005 0

0.6018 0 0.0003 0 -0.0017 0 0.0005

0 0.5189 0 -0.0008 0 0.0001 0

0.0003 0 0.5189 0 -0.0008 0 0.0001

0 -0.0008 0 0.4999 0 0.0019 0

-0.0017 0 -0.0008 0 0.4999 0 0.0019

0 0.0001 0 0.0019 0 0.2581 0

0.0005 0 0.0001 0 0.0019 0 0.2581

0 0.0037 0 -0.0033 0 0.0574 0

-0.0019 0 0.0037 0 -0.0033 0 0.0574

0 -0.0030 0 0.0010 0 0.0136 0

-0.0172 0 -0.0030 0 0.0010 0 0.0136

0 -0.0017 0 0.0007 0 0.0054 0

0.0401 0 -0.0017 0 0.0007 0 0.0054

0 0.0180 0 -0.0004 0 0.0108 0

-0.0014 0 0.0180 0 -0.0004 0 0.0108

0 -0.0012 0 0.0098 0 0.0365 0

-0.0027 0 -0.0012 0 0.0098 0 0.0365

列 15 至 21

-0.0366 0 -0.0051 0 -0.0011 0 -0.0057

0 -0.0366 0 -0.0051 0 -0.0011 0

0.0243 0 -0.0197 0 -0.0011 0 -0.0328

0 0.0243 0 -0.0197 0 -0.0011 0

0.0005 0 0.0219 0 0.0031 0 -0.0031

0 0.0005 0 0.0219 0 0.0031 0

-0.0019 0 -0.0172 0 0.0401 0 -0.0014

0 -0.0019 0 -0.0172 0 0.0401 0

0.0037 0 -0.0030 0 -0.0017 0 0.0180

0 0.0037 0 -0.0030 0 -0.0017 0

-0.0033 0 0.0010 0 0.0007 0 -0.0004

0 -0.0033 0 0.0010 0 0.0007 0

0.0574 0 0.0136 0 0.0054 0 0.0108

0 0.0574 0 0.0136 0 0.0054 0

0.2120 0 0.0192 0 0.0074 0 0.0447

0 0.2120 0 0.0192 0 0.0074 0

0.0192 0 0.1116 0 0.0227 0 -0.0031

0 0.0192 0 0.1116 0 0.0227 0

0.0074 0 0.0227 0 0.2333 0 -0.0018

0 0.0074 0 0.0227 0 0.2333 0

0.0447 0 -0.0031 0 -0.0018 0 0.1922

0 0.0447 0 -0.0031 0 -0.0018 0

0.0012 0 0.0285 0 0.0064 0 -0.0004

0 0.0012 0 0.0285 0 0.0064 0

列 22 至 24

0 -0.0241 0

-0.0057 0 -0.0241

0 -0.0080 0

-0.0328 0 -0.0080

0 -0.0203 0

-0.0031 0 -0.0203

0 -0.0027 0

-0.0014 0 -0.0027

0 -0.0012 0

0.0180 0 -0.0012

0 0.0098 0

-0.0004 0 0.0098

0 0.0365 0

0.0108 0 0.0365

0 0.0012 0

0.0447 0 0.0012

0 0.0285 0

-0.0031 0 0.0285

0 0.0064 0

-0.0018 0 0.0064

0 -0.0004 0

0.1922 0 -0.0004

0 0.1629 0

-0.0004 0 0.1629

ans =

1.0e-05 \*

列 1 至 7

-0.5805 0 0.0125 0 -0.0189 0 -0.0059

0 -0.5805 0 0.0125 0 -0.0189 0

-0.0703 0 -0.5073 0 0.0227 0 -0.0036

0 -0.0703 0 -0.5073 0 0.0227 0

-0.0110 0 -0.0349 0 -0.3730 0 -0.0398

0 -0.0110 0 -0.0349 0 -0.3730 0

-0.0065 0 -0.0036 0 0.0312 0 -0.4966

0 -0.0065 0 -0.0036 0 0.0312 0

-0.0181 0 -0.0551 0 0.0139 0 0.0051

0 -0.0181 0 -0.0551 0 0.0139 0

-0.0488 0 0.0160 0 -0.0482 0 -0.0123

0 -0.0488 0 0.0160 0 -0.0482 0

0.0224 0 -0.0105 0 0.0035 0 0.0008

0 0.0224 0 -0.0105 0 0.0035 0

0.0231 0 0.0178 0 -0.0045 0 0.0030

0 0.0231 0 0.0178 0 -0.0045 0

0.0030 0 0.0107 0 0.0097 0 0.0090

0 0.0030 0 0.0107 0 0.0097 0

0.0018 0 0.0022 0 -0.0072 0 0.0202

0 0.0018 0 0.0022 0 -0.0072 0

0.0019 0 0.0198 0 -0.0000 0 0.0001

0 0.0019 0 0.0198 0 -0.0000 0

0.0118 0 0.0025 0 0.0157 0 0.0009

0 0.0118 0 0.0025 0 0.0157 0

列 8 至 14

0 -0.0109 0 0.0198 0 0.0033 0

-0.0059 0 -0.0109 0 0.0198 0 0.0033

0 0.0059 0 0.0106 0 0.0078 0

-0.0036 0 0.0059 0 0.0106 0 0.0078

0 0.0134 0 0.0039 0 0.0039 0

-0.0398 0 0.0134 0 0.0039 0 0.0039

0 -0.0014 0 -0.0073 0 0.0010 0

-0.4966 0 -0.0014 0 -0.0073 0 0.0010

0 -0.4328 0 0.0023 0 -0.0036 0

0.0051 0 -0.4328 0 0.0023 0 -0.0036

0 -0.0025 0 -0.4089 0 0.0079 0

-0.0123 0 -0.0025 0 -0.4089 0 0.0079

0 0.0003 0 -0.0069 0 -0.1069 0

0.0008 0 0.0003 0 -0.0069 0 -0.1069

0 -0.0058 0 -0.0009 0 -0.0402 0

0.0030 0 -0.0058 0 -0.0009 0 -0.0402

0 0.0007 0 -0.0014 0 -0.0107 0

0.0090 0 0.0007 0 -0.0014 0 -0.0107

0 0.0009 0 0.0003 0 -0.0043 0

0.0202 0 0.0009 0 0.0003 0 -0.0043

0 0.0176 0 0.0014 0 -0.0079 0

0.0001 0 0.0176 0 0.0014 0 -0.0079

0 0.0021 0 0.0160 0 -0.0248 0

0.0009 0 0.0021 0 0.0160 0 -0.0248

列 15 至 21

0.0215 0 0.0071 0 0.0017 0 0.0022

0 0.0215 0 0.0071 0 0.0017 0

0.0056 0 0.0090 0 0.0058 0 0.0204

0 0.0056 0 0.0090 0 0.0058 0

0.0042 0 -0.0024 0 0.0034 0 0.0017

0 0.0042 0 -0.0024 0 0.0034 0

0.0064 0 0.0073 0 0.0065 0 0.0003

0 0.0064 0 0.0073 0 0.0065 0

0.0079 0 0.0018 0 0.0008 0 0.0104

0 0.0079 0 0.0018 0 0.0008 0

-0.0003 0 0.0098 0 -0.0015 0 0.0012

0 -0.0003 0 0.0098 0 -0.0015 0

-0.0385 0 -0.0104 0 -0.0042 0 -0.0078

0 -0.0385 0 -0.0104 0 -0.0042 0

-0.0837 0 -0.0118 0 -0.0063 0 -0.0294

0 -0.0837 0 -0.0118 0 -0.0063 0

-0.0123 0 -0.0327 0 -0.0143 0 0.0008

0 -0.0123 0 -0.0327 0 -0.0143 0

-0.0064 0 -0.0134 0 -0.0926 0 0.0008

0 -0.0064 0 -0.0134 0 -0.0926 0

-0.0303 0 0.0010 0 0.0008 0 -0.0746

0 -0.0303 0 0.0010 0 0.0008 0

-0.0024 0 -0.0184 0 -0.0046 0 0.0000

0 -0.0024 0 -0.0184 0 -0.0046 0

列 22 至 24

0 0.0139 0

0.0022 0 0.0139

0 0.0040 0

0.0204 0 0.0040

0 0.0158 0

0.0017 0 0.0158

0 0.0014 0

0.0003 0 0.0014

0 0.0018 0

0.0104 0 0.0018

0 0.0100 0

0.0012 0 0.0100

0 -0.0237 0

-0.0078 0 -0.0237

0 -0.0024 0

-0.0294 0 -0.0024

0 -0.0179 0

0.0008 0 -0.0179

0 -0.0046 0

0.0008 0 -0.0046

0 0.0001 0

-0.0746 0 0.0001

0 -0.0615 0

0.0000 0 -0.0615

ans =

1.0e-09 \*

-0.0058

-0.0058

0.0057

0.0057

0.0187

0.0187

0.0322

0.0322

0.0722

0.0722

0.0889

0.0889

0.2298

0.2298

0.2464

0.2464

0.2935

0.2935

0.3397

0.3397

0.4476

0.4476

0.5594

0.5594

ans =

1.0e-09 \*

-0.0379

-0.0379

-0.0313

-0.0313

-0.0261

-0.0261

-0.0196

-0.0196

-0.0165

-0.0165

-0.0046

-0.0046

0.1146

0.1146

0.1156

0.1156

0.1569

0.1569

0.1722

0.1722

0.2053

0.2053

0.2077

0.2077

ans =

1.0e-08 \*

0.0883

0.0883

0.1419

0.1419

0.1559

0.1559

0.2112

0.2112

0.2335

0.2335

0.3173

0.3173

0.4249

0.4249

0.5055

0.5055

0.5144

0.5144

0.5951

0.5951

0.6483

0.6483

0.7854

0.7854

ans =

1.0e-07 \*

0.0032

0.0032

0.0041

0.0041

0.0062

0.0062

0.0064

0.0064

0.0081

0.0081

0.0098

0.0098

0.0113

0.0113

0.0118

0.0118

0.0125

0.0125

0.0139

0.0139

0.0165

0.0165

0.0185

0.0185

0.0189

0.0189

0.0213

0.0213

0.0236

0.0236

0.0299

0.0299

0.0332

0.0332

0.0471

0.0471

0.0788

0.0788

0.0930

0.0930

0.0936

0.0936

0.1092

0.1092

0.1153

0.1153

0.1380

0.1380

历时 1439.551080 秒。

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