```
>> %compute problem in Example 5.1 III
>> [prob,para] = P_5_1_III;
>> for k=6:15
tic; fsippsolve(prob,para,k); toc;
end

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.1832
       solvertime: 0.0058
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 6-th dual SDP relaxation (D_k) is
0.1597
The approximate minimizer computed by the 6-th dual SDP relaxation (D_k) is
[0.71742, 0.71742]
Elapsed time is 0.935272 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.1971
       solvertime: 0.0097
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 7-th dual SDP relaxation (D_k) is
0.16218
The approximate minimizer computed by the 7-th dual SDP relaxation (D_k) is
[0.71524, 0.71524]
Elapsed time is 1.324858 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.1825
       solvertime: 0.0148
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 8-th dual SDP relaxation (D_k) is
0.16395
The approximate minimizer computed by the 8-th dual SDP relaxation (D_k) is
[0.71369, 0.71369]
Elapsed time is 1.973767 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.1953
       solvertime: 0.0226
             info: 'Successfully solved (MOSEK)'
```

```
          problem: 0

The optimal value r^dual_k of the 9-th dual SDP relaxation (D_k) is
0.16527
The approximate minimizer computed by the 9-th dual SDP relaxation (D_k) is
[0.71254, 0.71254]
Elapsed time is 2.941386 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.1879
       solvertime: 0.0344
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 10-th dual SDP relaxation (D_k) is
0.16627
The approximate minimizer computed by the 10-th dual SDP relaxation (D_k) is
[0.71167, 0.71167]
Elapsed time is 4.728897 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.2029
       solvertime: 0.0533
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 11-th dual SDP relaxation (D_k) is
0.16705
The approximate minimizer computed by the 11-th dual SDP relaxation (D_k) is
[0.71099, 0.71099]
Elapsed time is 7.106375 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.1770
       solvertime: 0.0769
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 12-th dual SDP relaxation (D_k) is
0.16767
The approximate minimizer computed by the 12-th dual SDP relaxation (D_k) is
[0.71045, 0.71045]
Elapsed time is 10.280639 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.2072
```

```
       solvertime: 0.1271
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 13-th dual SDP relaxation (D_k) is
0.16817
The approximate minimizer computed by the 13-th dual SDP relaxation (D_k) is
[0.71002, 0.71002]
Elapsed time is 17.303236 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.2028
       solvertime: 0.2851
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 14-th dual SDP relaxation (D_k) is
0.16859
The approximate minimizer computed by the 14-th dual SDP relaxation (D_k) is
[0.70967, 0.70967]
Elapsed time is 28.754632 seconds.

diagnostic =

  struct with fields:

    yalmipversion: '20181012'
       yalmiptime: 0.2168
       solvertime: 0.3878
             info: 'Successfully solved (MOSEK)'
          problem: 0

The optimal value r^dual_k of the 15-th dual SDP relaxation (D_k) is
0.16893
The approximate minimizer computed by the 15-th dual SDP relaxation (D_k) is
[0.70938, 0.70938]
Elapsed time is 41.574010 seconds.
>>
```