```
   demo_Polynomial_Dictionary_Learning_Uber
Starting to train the dictionary
solving the quadratic problem with YALMIP...

 num. of constraints = 17
 dim. of socp   var  = 18,   num. of socp blk  =  1
 dim. of linear var  = 122
*****************************************************************
   SDPT3: Infeasible path-following algorithms
*****************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-----------------------------------------------------------------
 0|0.000|0.000|1.7e+00|4.3e+00|4.9e+04| 2.914005e+03  0.000000e+00| 0:0:00| chol  1  1
 1|1.000|0.958|6.0e-06|2.0e-01|4.3e+03| 2.388919e+03 -2.755310e+01| 0:0:00| chol  1  1
 2|0.807|0.955|4.4e-07|1.1e-02|1.3e+03| 1.183420e+03 -3.821669e+01| 0:0:00| chol  1  1
 3|0.900|0.872|2.5e-07|1.6e-03|1.9e+02| 1.544231e+02 -2.814386e+01| 0:0:00| chol  1  1
 4|1.000|1.000|5.6e-07|2.3e-05|1.2e+02| 8.713266e+01 -3.416395e+01| 0:0:00| chol  1  1
 5|1.000|1.000|2.4e-08|2.4e-06|6.3e+01| 3.937588e+01 -2.346801e+01| 0:0:00| chol  1  1
 6|0.911|1.000|4.5e-09|2.4e-07|1.4e+01|-8.654945e+00 -2.244380e+01| 0:0:00| chol  1  1
 7|1.000|1.000|3.5e-09|2.4e-08|5.5e+00|-1.564490e+01 -2.114701e+01| 0:0:00| chol  1  1
 8|0.914|1.000|1.5e-09|3.0e-09|1.0e+00|-1.997726e+01 -2.098258e+01| 0:0:00| chol  1  1
 9|1.000|1.000|1.5e-09|5.4e-10|3.6e-01|-2.057280e+01 -2.093730e+01| 0:0:00| chol  1  1
10|0.964|0.984|5.4e-11|3.3e-10|1.6e-02|-2.091186e+01 -2.092792e+01| 0:0:00| chol  1  1
11|0.954|0.985|2.5e-12|1.8e-11|7.4e-04|-2.092688e+01 -2.092762e+01| 0:0:00| chol  1  1
12|0.936|1.000|7.7e-13|1.0e-12|6.2e-05|-2.092755e+01 -2.092761e+01| 0:0:00| chol  1  1
13|1.000|1.000|7.0e-12|1.0e-12|5.0e-06|-2.092760e+01 -2.092761e+01| 0:0:00| chol  1  1
14|0.998|0.998|6.6e-14|1.4e-12|5.4e-08|-2.092761e+01 -2.092761e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-----------------------------------------------------------------
 number of iterations   = 14
 primal objective value = -2.09276071e+01
 dual   objective value = -2.09276071e+01
 gap := trace(XZ)       = 5.43e-08
 relative gap           = 1.27e-09
 actual relative gap    = 1.27e-09
 rel. primal infeas     = 6.59e-14
 rel. dual   infeas     = 1.40e-12
 norm(X), norm(y), norm(Z) = 5.7e+00, 1.1e+03, 1.9e+01
 norm(A), norm(b), norm(C) = 2.6e+00, 2.1e+00, 4.7e+01
 Total CPU time (secs)  = 0.08
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 6.8e-14  0.0e+00  2.0e-12  0.0e+00  1.3e-09  1.3e-09
-----------------------------------------------------------------

 num. of constraints = 17
 dim. of socp   var  = 18,   num. of socp blk  =  1
 dim. of linear var  = 122
*****************************************************************
   SDPT3: Infeasible path-following algorithms
*****************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
```

```
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|2.0e+00|4.3e+00|4.9e+04| 2.893207e+03  0.000000e+00| 0:0:00| chol  1  1
 1|0.966|0.873|6.8e-02|5.6e-01|8.2e+03| 2.540712e+03  4.834776e+00| 0:0:00| chol  1  1
 2|1.000|0.944|7.4e-07|3.4e-02|2.3e+03| 1.898452e+03 -3.906743e+01| 0:0:00| chol  1  1
 3|0.927|0.993|4.7e-07|4.7e-04|2.2e+02| 1.853220e+02 -3.033793e+01| 0:0:00| chol  1  1
 4|1.000|1.000|1.9e-07|2.3e-05|1.4e+02| 1.119865e+02 -2.483273e+01| 0:0:00| chol  1  1
 5|0.971|1.000|1.2e-08|7.0e-06|3.0e+01| 1.089024e+01 -1.943115e+01| 0:0:00| chol  1  1
 6|1.000|1.000|6.8e-09|7.0e-07|1.4e+01|-4.473939e+00 -1.797831e+01| 0:0:00| chol  1  1
 7|0.953|1.000|2.5e-09|7.1e-08|2.5e+00|-1.481188e+01 -1.734952e+01| 0:0:00| chol  1  1
 8|1.000|1.000|5.2e-09|7.5e-09|9.7e-01|-1.628376e+01 -1.725402e+01| 0:0:00| chol  1  1
 9|1.000|1.000|2.3e-09|1.5e-09|3.1e-01|-1.689518e+01 -1.720721e+01| 0:0:00| chol  1  1
10|0.892|1.000|2.5e-10|5.3e-10|9.1e-02|-1.711465e+01 -1.720611e+01| 0:0:00| chol  1  1
11|0.991|0.968|2.2e-12|7.3e-11|6.0e-03|-1.719505e+01 -1.720107e+01| 0:0:00| chol  1  1
12|0.986|0.985|9.7e-14|2.8e-12|8.6e-05|-1.720076e+01 -1.720085e+01| 0:0:00| chol  1  1
13|1.000|0.995|5.4e-13|1.0e-12|4.8e-06|-1.720084e+01 -1.720084e+01| 0:0:00| chol  1  1
14|1.000|1.000|2.3e-12|1.0e-12|5.4e-07|-1.720084e+01 -1.720084e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 14
 primal objective value = -1.72008414e+01
 dual   objective value = -1.72008420e+01
 gap := trace(XZ)       = 5.42e-07
 relative gap           = 1.53e-08
 actual relative gap    = 1.53e-08
 rel. primal infeas     = 2.31e-12
 rel. dual   infeas     = 1.00e-12
 norm(X), norm(y), norm(Z) = 1.7e+02, 9.2e+02, 2.6e+01
 norm(A), norm(b), norm(C) = 2.6e+00, 2.1e+00, 4.7e+01
 Total CPU time (secs)  = 0.08
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 2.5e-12  0.0e+00  1.5e-12  0.0e+00  1.5e-08  1.5e-08
-------------------------------------------------------------------
Iteration   2   Total error is: 0.085649

 num. of constraints = 17
 dim. of socp   var  = 18,   num. of socp blk  =  1
 dim. of linear var  = 122
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|2.0e+00|4.3e+00|4.9e+04| 2.892515e+03  0.000000e+00| 0:0:00| chol  1  1
 1|0.964|0.872|7.3e-02|5.7e-01|8.2e+03| 2.544600e+03  5.466182e+00| 0:0:00| chol  1  1
 2|1.000|0.942|7.4e-07|3.5e-02|2.3e+03| 1.910169e+03 -3.878118e+01| 0:0:00| chol  1  1
 3|0.930|0.993|4.6e-07|4.8e-04|2.1e+02| 1.803098e+02 -3.031540e+01| 0:0:00| chol  1  1
 4|1.000|1.000|2.1e-07|2.3e-05|1.3e+02| 1.094195e+02 -2.440613e+01| 0:0:00| chol  1  1
 5|0.970|1.000|1.3e-08|7.0e-06|3.0e+01| 1.018273e+01 -1.936306e+01| 0:0:00| chol  1  1
 6|1.000|1.000|6.6e-09|7.0e-07|1.3e+01|-4.903657e+00 -1.789369e+01| 0:0:00| chol  1  1
 7|0.952|1.000|2.6e-09|7.1e-08|2.4e+00|-1.487691e+01 -1.730613e+01| 0:0:00| chol  1  1
 8|1.000|1.000|5.5e-09|7.5e-09|9.2e-01|-1.629501e+01 -1.721198e+01| 0:0:00| chol  1  1
```

```
 9|1.000|1.000|2.6e-09|1.5e-09|2.6e-01|-1.691142e+01 -1.716772e+01| 0:0:00| chol  1  1
10|0.794|0.969|5.3e-10|6.3e-10|8.3e-02|-1.708556e+01 -1.716882e+01| 0:0:00| chol  1  1
11|1.000|0.983|6.2e-13|1.2e-10|3.8e-02|-1.712664e+01 -1.716480e+01| 0:0:00| chol  1  1
12|0.974|0.978|5.8e-14|4.4e-12|1.0e-03|-1.716319e+01 -1.716420e+01| 0:0:00| chol  1  1
13|0.963|0.987|1.6e-12|1.1e-12|3.8e-05|-1.716415e+01 -1.716418e+01| 0:0:00| chol  1  2
14|1.000|1.000|7.1e-12|1.0e-12|7.3e-06|-1.716418e+01 -1.716418e+01| 0:0:00| chol  1  1
15|1.000|1.000|3.3e-11|1.4e-12|6.2e-07|-1.716418e+01 -1.716418e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-----------------------------------------------------------------
 number of iterations   = 15
 primal objective value = -1.71641826e+01
 dual   objective value = -1.71641833e+01
 gap := trace(XZ)       = 6.19e-07
 relative gap           = 1.75e-08
 actual relative gap    = 1.75e-08
 rel. primal infeas     = 3.30e-11
 rel. dual   infeas     = 1.41e-12
 norm(X), norm(y), norm(Z) = 1.7e+02, 9.2e+02, 2.6e+01
 norm(A), norm(b), norm(C) = 2.6e+00, 2.2e+00, 4.7e+01
 Total CPU time (secs)  = 0.09
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 3.6e-11  0.0e+00  2.1e-12  0.0e+00  1.8e-08  1.8e-08
-----------------------------------------------------------------
Iteration   3   Total error is: 0.085549

 num. of constraints = 17
 dim. of socp   var  = 18,   num. of socp blk  =  1
 dim. of linear var  = 122
*****************************************************************
   SDPT3: Infeasible path-following algorithms
*****************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-----------------------------------------------------------------
 0|0.000|0.000|2.0e+00|4.3e+00|4.9e+04| 2.891839e+03  0.000000e+00| 0:0:00| chol  1  1
 1|0.962|0.871|7.6e-02|5.7e-01|8.3e+03| 2.547006e+03  5.928569e+00| 0:0:00| chol  1  1
 2|1.000|0.941|7.4e-07|3.6e-02|2.3e+03| 1.918099e+03 -3.856427e+01| 0:0:00| chol  1  1
 3|0.934|0.992|4.5e-07|5.0e-04|2.1e+02| 1.754579e+02 -3.033407e+01| 0:0:00| chol  1  1
 4|1.000|1.000|2.1e-07|2.3e-05|1.3e+02| 1.063818e+02 -2.401852e+01| 0:0:00| chol  1  1
 5|0.969|1.000|1.3e-08|7.1e-06|2.9e+01| 9.395037e+00 -1.932443e+01| 0:0:00| chol  1  1
 6|1.000|1.000|6.4e-09|7.0e-07|1.3e+01|-5.345360e+00 -1.784363e+01| 0:0:00| chol  1  1
 7|0.950|1.000|2.7e-09|7.1e-08|2.3e+00|-1.497064e+01 -1.729171e+01| 0:0:00| chol  1  1
 8|1.000|1.000|5.8e-09|7.5e-09|8.7e-01|-1.632536e+01 -1.719878e+01| 0:0:00| chol  1  1
 9|0.966|0.940|3.0e-09|1.9e-09|2.3e-01|-1.693316e+01 -1.715903e+01| 0:0:00| chol  1  1
10|0.803|0.931|5.9e-10|7.9e-10|6.8e-02|-1.709124e+01 -1.715946e+01| 0:0:00| chol  1  1
11|1.000|0.998|4.9e-14|1.3e-10|2.7e-02|-1.712904e+01 -1.715605e+01| 0:0:00| chol  1  1
12|0.979|0.980|1.4e-15|4.2e-12|5.8e-04|-1.715507e+01 -1.715565e+01| 0:0:00| chol  1  1
13|0.971|0.987|7.2e-13|1.1e-12|1.7e-05|-1.715562e+01 -1.715564e+01| 0:0:00| chol  1  2
14|1.000|1.000|7.1e-13|1.0e-12|2.8e-06|-1.715564e+01 -1.715564e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-----------------------------------------------------------------
 number of iterations   = 14
 primal objective value = -1.71556361e+01
```

```
 dual   objective value = -1.71556389e+01
 gap := trace(XZ)       = 2.81e-06
 relative gap           = 7.94e-08
 actual relative gap    = 7.94e-08
 rel. primal infeas     = 7.09e-13
 rel. dual   infeas     = 1.00e-12
 norm(X), norm(y), norm(Z) = 1.7e+02, 9.2e+02, 2.6e+01
 norm(A), norm(b), norm(C) = 2.6e+00, 2.2e+00, 4.7e+01
 Total CPU time (secs)  = 0.08
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 7.7e-13  0.0e+00  1.5e-12  0.0e+00  7.9e-08  7.9e-08
------------------------------------------------------------------
Iteration   4   Total error is: 0.085524

 num. of constraints = 17
 dim. of socp   var  = 18,   num. of socp blk  =  1
 dim. of linear var  = 122
******************************************************************
   SDPT3: Infeasible path-following algorithms
******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|2.0e+00|4.3e+00|4.9e+04| 2.891169e+03  0.000000e+00| 0:0:00| chol  1  1
 1|0.960|0.871|8.0e-02|5.7e-01|8.3e+03| 2.549220e+03  6.369157e+00| 0:0:00| chol  1  1
 2|1.000|0.939|7.5e-07|3.7e-02|2.3e+03| 1.925742e+03 -3.835271e+01| 0:0:00| chol  1  1
 3|0.940|0.991|4.5e-07|5.6e-04|2.0e+02| 1.694829e+02 -3.041319e+01| 0:0:00| chol  1  1
 4|1.000|1.000|2.2e-07|2.3e-05|1.3e+02| 1.016654e+02 -2.349607e+01| 0:0:00| chol  1  1
 5|0.969|1.000|1.3e-08|7.1e-06|2.8e+01| 8.268195e+00 -1.929219e+01| 0:0:00| chol  1  1
 6|1.000|1.000|6.2e-09|7.0e-07|1.2e+01|-5.917493e+00 -1.779013e+01| 0:0:00| chol  1  1
 7|0.947|1.000|2.8e-09|7.1e-08|2.2e+00|-1.509683e+01 -1.727856e+01| 0:0:00| chol  1  1
 8|1.000|1.000|6.3e-09|7.6e-09|8.7e-01|-1.631756e+01 -1.718922e+01| 0:0:00| chol  1  1
 9|0.933|0.880|3.3e-09|2.4e-09|2.0e-01|-1.695508e+01 -1.715327e+01| 0:0:00| chol  1  1
10|0.818|0.921|6.1e-10|9.2e-10|5.7e-02|-1.709613e+01 -1.715326e+01| 0:0:00| chol  1  1
11|1.000|1.000|1.9e-14|1.3e-10|1.9e-02|-1.713074e+01 -1.715023e+01| 0:0:00| chol  1  1
12|0.982|0.982|2.2e-14|4.0e-12|3.6e-04|-1.714958e+01 -1.714994e+01| 0:0:00| chol  1  1
13|0.977|0.987|4.6e-13|1.1e-12|8.4e-06|-1.714993e+01 -1.714994e+01| 0:0:00| chol  1  2
14|1.000|1.000|1.4e-12|1.0e-12|1.1e-06|-1.714993e+01 -1.714994e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 14
 primal objective value = -1.71499340e+01
 dual   objective value = -1.71499351e+01
 gap := trace(XZ)       = 1.06e-06
 relative gap           = 3.00e-08
 actual relative gap    = 2.99e-08
 rel. primal infeas     = 1.40e-12
 rel. dual   infeas     = 1.00e-12
 norm(X), norm(y), norm(Z) = 1.7e+02, 9.2e+02, 2.6e+01
 norm(A), norm(b), norm(C) = 2.6e+00, 2.2e+00, 4.7e+01
 Total CPU time (secs)  = 0.08
 CPU time per iteration = 0.01
 termination code       =  0
```

```
 DIMACS errors: 1.5e-12  0.0e+00  1.5e-12  0.0e+00  3.0e-08  3.0e-08
------------------------------------------------------------------
Iteration   5   Total error is: 0.085508

 num. of constraints = 17
 dim. of socp   var  = 18,   num. of socp blk  =  1
 dim. of linear var  = 122
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
------------------------------------------------------------------
 0|0.000|0.000|2.0e+00|4.3e+00|4.9e+04| 2.890515e+03  0.000000e+00| 0:0:00| chol  1  1
 1|0.959|0.870|8.3e-02|5.8e-01|8.3e+03| 2.551648e+03  6.829601e+00| 0:0:00| chol  1  1
 2|1.000|0.938|7.5e-07|3.8e-02|2.4e+03| 1.934214e+03 -3.812953e+01| 0:0:00| chol  1  1
 3|0.947|0.990|4.4e-07|6.2e-04|2.0e+02| 1.630057e+02 -3.048889e+01| 0:0:00| chol  1  1
 4|1.000|1.000|2.3e-07|2.3e-05|1.2e+02| 9.679412e+01 -2.298680e+01| 0:0:00| chol  1  1
 5|0.971|1.000|1.4e-08|7.1e-06|2.7e+01| 7.258069e+00 -1.928131e+01| 0:0:00| chol  1  1
 6|1.000|1.000|6.0e-09|7.0e-07|1.1e+01|-6.403579e+00 -1.773943e+01| 0:0:00| chol  1  1
 7|0.943|1.000|2.8e-09|7.1e-08|2.1e+00|-1.519853e+01 -1.726078e+01| 0:0:00| chol  1  1
 8|1.000|1.000|6.9e-09|7.6e-09|8.7e-01|-1.630671e+01 -1.717402e+01| 0:0:00| chol  1  1
 9|0.963|0.885|3.4e-09|2.3e-09|1.8e-01|-1.696151e+01 -1.714206e+01| 0:0:00| chol  1  1
10|0.838|0.927|5.5e-10|9.2e-10|4.9e-02|-1.709290e+01 -1.714151e+01| 0:0:00| chol  1  1
11|1.000|0.986|2.6e-14|1.3e-10|1.1e-02|-1.712771e+01 -1.713884e+01| 0:0:00| chol  1  1
12|0.985|0.985|3.6e-15|3.6e-12|1.6e-04|-1.713848e+01 -1.713864e+01| 0:0:00| chol  1  1
13|0.986|0.988|4.8e-13|1.0e-12|2.2e-06|-1.713863e+01 -1.713863e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 13
 primal objective value = -1.71386324e+01
 dual   objective value = -1.71386346e+01
 gap := trace(XZ)       = 2.24e-06
 relative gap           = 6.34e-08
 actual relative gap    = 6.34e-08
 rel. primal infeas     = 4.80e-13
 rel. dual   infeas     = 1.04e-12
 norm(X), norm(y), norm(Z) = 1.7e+02, 9.2e+02, 2.6e+01
 norm(A), norm(b), norm(C) = 2.6e+00, 2.2e+00, 4.7e+01
 Total CPU time (secs)  = 0.06
 CPU time per iteration = 0.00
 termination code       =  0
 DIMACS errors: 5.2e-13  0.0e+00  1.5e-12  0.0e+00  6.3e-08  6.3e-08
------------------------------------------------------------------
Iteration   6   Total error is: 0.085478

 num. of constraints = 17
 dim. of socp   var  = 18,   num. of socp blk  =  1
 dim. of linear var  = 122
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
```

```
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|2.0e+00|4.3e+00|4.9e+04| 2.889853e+03  0.000000e+00| 0:0:00| chol  1  1
 1|0.957|0.869|8.7e-02|5.8e-01|8.4e+03| 2.553566e+03  7.237252e+00| 0:0:00| chol  1  1
 2|1.000|0.936|7.5e-07|3.9e-02|2.4e+03| 1.941517e+03 -3.792480e+01| 0:0:00| chol  1  1
 3|0.954|0.988|4.4e-07|6.7e-04|1.9e+02| 1.565024e+02 -3.056673e+01| 0:0:00| chol  1  1
 4|1.000|1.000|2.4e-07|2.3e-05|1.1e+02| 9.210869e+01 -2.254404e+01| 0:0:00| chol  1  1
 5|0.974|1.000|1.4e-08|7.1e-06|2.6e+01| 6.420958e+00 -1.930167e+01| 0:0:00| chol  1  1
 6|1.000|1.000|5.8e-09|7.0e-07|1.1e+01|-6.780782e+00 -1.770852e+01| 0:0:00| chol  1  1
 7|0.940|1.000|2.9e-09|7.1e-08|2.0e+00|-1.528217e+01 -1.725388e+01| 0:0:00| chol  1  1
 8|1.000|1.000|7.5e-09|7.6e-09|8.6e-01|-1.630694e+01 -1.716884e+01| 0:0:00| chol  1  1
 9|1.000|0.912|3.4e-09|2.2e-09|1.7e-01|-1.696744e+01 -1.714031e+01| 0:0:00| chol  1  1
10|0.851|0.934|5.0e-10|8.9e-10|4.2e-02|-1.709734e+01 -1.713918e+01| 0:0:00| chol  1  1
11|1.000|0.969|1.1e-13|1.3e-10|5.0e-03|-1.713187e+01 -1.713690e+01| 0:0:00| chol  1  1
12|0.987|0.987|2.7e-14|3.5e-12|6.5e-05|-1.713671e+01 -1.713677e+01| 0:0:00| chol  1  1
13|0.993|0.994|1.0e-13|1.0e-12|1.4e-06|-1.713677e+01 -1.713677e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
-------------------------------------------------------------------
 number of iterations   = 13
 primal objective value = -1.71367673e+01
 dual   objective value = -1.71367687e+01
 gap := trace(XZ)       = 1.43e-06
 relative gap           = 4.06e-08
 actual relative gap    = 4.06e-08
 rel. primal infeas     = 1.04e-13
 rel. dual   infeas     = 1.02e-12
 norm(X), norm(y), norm(Z) = 1.7e+02, 9.2e+02, 2.6e+01
 norm(A), norm(b), norm(C) = 2.6e+00, 2.2e+00, 4.7e+01
 Total CPU time (secs)  = 0.07
 CPU time per iteration = 0.01
 termination code       =  0
 DIMACS errors: 1.1e-13  0.0e+00  1.5e-12  0.0e+00  4.1e-08  4.1e-08
-------------------------------------------------------------------
Iteration   7   Total error is: 0.085473

 num. of constraints = 17
 dim. of socp   var  = 18,   num. of socp blk  =  1
 dim. of linear var  = 122
*******************************************************************
   SDPT3: Infeasible path-following algorithms
*******************************************************************
 version  predcorr  gam  expon  scale_data
   HKM      1      0.000   1        0
it pstep dstep pinfeas dinfeas  gap      prim-obj      dual-obj    cputime
-------------------------------------------------------------------
 0|0.000|0.000|2.0e+00|4.3e+00|4.9e+04| 2.889204e+03  0.000000e+00| 0:0:00| chol  1  1
 1|0.956|0.868|9.0e-02|5.8e-01|8.4e+03| 2.555576e+03  7.652234e+00| 0:0:00| chol  1  1
 2|1.000|0.935|7.5e-07|4.0e-02|2.4e+03| 1.949321e+03 -3.771393e+01| 0:0:00| chol  1  1
 3|0.961|0.987|4.4e-07|7.3e-04|1.8e+02| 1.495369e+02 -3.064432e+01| 0:0:00| chol  1  1
 4|1.000|1.000|2.4e-07|2.3e-05|1.1e+02| 8.728969e+01 -2.210811e+01| 0:0:00| chol  1  1
 5|0.976|1.000|1.3e-08|2.4e-06|2.5e+01| 5.705401e+00 -1.933568e+01| 0:0:00| chol  1  1
 6|1.000|1.000|5.6e-09|2.4e-07|1.1e+01|-7.028572e+00 -1.768535e+01| 0:0:00| chol  1  1
 7|0.937|1.000|2.9e-09|2.4e-08|1.9e+00|-1.534310e+01 -1.724480e+01| 0:0:00| chol  1  1
 8|1.000|1.000|8.2e-09|2.9e-09|8.6e-01|-1.630481e+01 -1.716156e+01| 0:0:00| chol  1  1
 9|1.000|0.962|3.5e-09|1.2e-09|2.0e-01|-1.693477e+01 -1.713589e+01| 0:0:00| chol  1  1
```

```
10|0.851|0.946|5.2e-10|7.9e-10|4.2e-02|-1.709201e+01 -1.713424e+01| 0:0:00| chol  1  1
11|1.000|0.960|7.7e-14|1.4e-10|2.2e-03|-1.713008e+01 -1.713224e+01| 0:0:00| chol  1  1
12|0.974|0.982|1.7e-14|3.5e-12|5.6e-05|-1.713208e+01 -1.713214e+01| 0:0:00| chol  1  1
13|1.000|1.000|8.9e-15|1.0e-12|7.6e-06|-1.713213e+01 -1.713214e+01| 0:0:00| chol  1  1
14|1.000|1.000|4.8e-14|1.0e-12|8.6e-07|-1.713214e+01 -1.713214e+01| 0:0:00|
  stop: max(relative gap, infeasibilities) < 1.00e-07
------------------------------------------------------------------
 number of iterations   = 14
 primal objective value = -1.71321352e+01
 dual   objective value = -1.71321360e+01
 gap := trace(XZ)       = 8.64e-07
 relative gap           = 2.45e-08
 actual relative gap    = 2.45e-08
 rel. primal infeas     = 4.78e-14
 rel. dual   infeas     = 1.00e-12
 norm(X), norm(y), norm(Z) = 1.7e+02, 9.2e+02, 2.7e+01
 norm(A), norm(b), norm(C) = 2.6e+00, 2.2e+00, 4.7e+01
 Total CPU time (secs)  = 0.07
 CPU time per iteration = 0.00
 termination code       =  0
 DIMACS errors: 5.2e-14  0.0e+00  1.5e-12  0.0e+00  2.4e-08  2.5e-08
------------------------------------------------------------------
Iteration   8   Total error is: 0.085461
The total representation error of the testing signals is: 0.40273
>>
```