A 7x7 example showing flow of the Algorithm to solve the given S.U.S problem

It runs for 5 iterations showing that the collection is S.U.S

Printing salient results of each iteration

The given input collection of p=3, 2-tuples (A_l,B_l)

Displaying 2 decimal places

A_1

0.21 + 0.00j	0.03 + -0.07j	-0.03 + -0.05j	0.01 + 0.01j	0.01 + -0.00j	0.00 + 0.04j	0.02 + 0.00j
0.03 + 0.07j	0.25 + 0.00j	0.03 + 0.03j	0.04 + -0.03j	0.05 + -0.01j	0.02 + -0.01j	0.04 + -0.04j
-0.03 + 0.05j	0.03 + -0.03j	0.22 + 0.00j	0.03 + -0.02j	-0.03 + -0.02j	-0.04 + 0.02j	-0.08 + -0.03j
0.01 + -0.01j	0.04 + 0.03j	0.03 + 0.02j	0.34 + 0.00j	0.02 + -0.01j	-0.01 + 0.04j	-0.00 + 0.05j
0.01 + 0.00j	0.05 + 0.01j	-0.03 + 0.02j	0.02 + 0.01j	0.17 + 0.00j	0.05 + -0.08j	0.02 + 0.01j
0.00 + -0.04j	0.02 + 0.01j	-0.04 + -0.02j	-0.01 + -0.04j	0.05 + 0.08j	0.28 + 0.00j	-0.02 + 0.01j
0.02 + -0.00j	0.04 + 0.04j	-0.08 + 0.03j	-0.00 + -0.05j	0.02 + -0.01j	-0.02 + -0.01j	0.22 + 0.00j

B_1

0.19 + -0.00j	-0.00 + -0.01j	0.03 + 0.04j	-0.00 + -0.04j	0.04 + -0.07j	-0.03 + -0.02j	0.03 + -0.02j
-0.00 + 0.01j	0.26 + -0.00j	-0.05 + 0.05j	-0.00 + 0.01j	-0.09 + 0.01j	-0.02 + 0.01j	0.07 + -0.02j
0.03 + -0.04j	-0.05 + -0.05j	0.20 + 0.00j	0.03 + -0.05j	0.00 + 0.02j	-0.00 + 0.04j	0.02 + 0.02j
-0.00 + 0.04j	-0.00 + -0.01j	0.03 + 0.05j	0.24 + -0.00j	0.00 + 0.00j	0.06 + 0.06j	-0.00 + 0.01j
0.04 + 0.07j	-0.09 + -0.01j	0.00 + -0.02j	0.00 + -0.00j	0.28 + 0.00j	-0.01 + 0.00j	0.05 + -0.00j
-0.03 + 0.02j	-0.02 + -0.01j	-0.00 + -0.04j	0.06 + -0.06j	-0.01 + -0.00j	0.23 + -0.00j	-0.03 + -0.08j
0.03 + 0.02j	0.07 + 0.02j	0.02 + -0.02j	-0.00 + -0.01j	0.05 + 0.00j	-0.03 + 0.08j	0.29 + 0.00j

A_2

0.32 + 0.70j -0.19 + 0.28j -0.13 + 0.17j -0.17 + -0.10j -0.11 + 0.04j -0.04 + 0.11j 0.23 + -0.12j

0.15 + -0.14j 0.52 + 0.51j -0.06 + -0.13j -0.18 + 0.08j -0.09 + -0.04j 0.05 + -0.03j -0.33 + -0.10j

0.28 + 0.09j -0.06 + -0.06j 0.42 + 0.64j -0.21 + 0.11j 0.05 + 0.20j 0.12 + 0.26j 0.20 + 0.07j

0.02 + -0.10j -0.04 + -0.15j -0.04 + -0.09j 0.31 + 0.34j -0.04 + -0.10j 0.04 + -0.07j 0.13 + -0.06j

-0.33 + -0.03j -0.18 + -0.02j 0.37 + 0.17j -0.03 + -0.15j 0.47 + 0.80j -0.02 + -0.01j -0.13 + -0.13j

0.05 + 0.20j -0.02 + -0.08j -0.02 + -0.03j -0.13 + 0.14j 0.14 + -0.28j 0.13 + 0.39j 0.18 + 0.15j

0.17 + -0.05j 0.02 + -0.36j 0.20 + 0.09j -0.02 + 0.18j 0.12 + -0.02j 0.07 + 0.05j 0.45 + 0.64j

B_2

0.26 + 0.68j -0.17 + 0.13j -0.02 + -0.24j 0.03 + 0.30j -0.28 + 0.06j 0.22 + 0.22j -0.06 + 0.05j

-0.08 + -0.11j 0.31 + 0.60j 0.32 + -0.06j 0.18 + -0.23j -0.02 + 0.20j 0.14 + 0.07j -0.12 + -0.01j

0.06 + -0.19j -0.12 + 0.02j 0.69 + 0.73j -0.10 + -0.11j -0.07 + -0.09j -0.04 + 0.00j -0.01 + 0.03j

-0.02 + -0.18j -0.02 + 0.04j 0.03 + -0.27j 0.31 + 0.65j 0.06 + 0.14j -0.00 + -0.23j 0.15 + -0.14j

0.06 + -0.19j 0.21 + 0.32j 0.02 + 0.02j 0.19 + -0.23j 0.19 + 0.47j 0.06 + -0.06j -0.05 + -0.03j

0.22 + 0.16j 0.07 + 0.07j -0.04 + 0.13j -0.15 + -0.16j -0.12 + -0.05j 0.54 + 0.54j -0.10 + 0.25j

0.14 + -0.04j -0.02 + -0.27j -0.16 + 0.03j -0.19 + 0.08j -0.01 + -0.09j 0.18 + -0.22j 0.29 + 0.35j

A_3

0.28 + 0.61j 0.14 + 0.15j 0.09 + -0.22j 0.10 + 0.18j 0.05 + 0.04j -0.08 + 0.09j 0.05 + 0.12j

-0.07 + 0.25j 0.51 + 0.45j 0.00 + 0.01j -0.16 + 0.00j -0.24 + 0.04j -0.20 + 0.12j -0.17 + -0.13j

-0.14 + 0.02j -0.23 + -0.13j 0.55 + 0.34j -0.17 + -0.07j 0.02 + 0.11j 0.14 + 0.21j -0.03 + -0.15j

0.27 + -0.05j 0.19 + -0.06j -0.03 + -0.11j 0.66 + 0.26j 0.15 + 0.02j 0.23 + 0.11j -0.00 + 0.07j

0.04 + 0.11j -0.07 + 0.01j 0.12 + -0.00j -0.04 + 0.13j 0.32 + 0.39j 0.12 + 0.03j 0.16 + 0.05j

0.08 + -0.15j -0.03 + -0.02j 0.03 + -0.01j -0.14 + -0.06j 0.00 + 0.21j 0.53 + 0.62j 0.00 + -0.28j

0.03 + 0.20j -0.00 + -0.01j 0.11 + 0.14j 0.08 + -0.02j 0.26 + -0.13j -0.23 + -0.21j 0.61 + 0.44j

B_3

0.55 + 0.50j -0.06 + 0.06j -0.18 + 0.16j -0.10 + 0.05j 0.05 + -0.22j 0.21 + -0.35j -0.08 + -0.01j

-0.15 + 0.10j 0.42 + 0.30j -0.12 + 0.07j 0.25 + -0.19j -0.15 + 0.03j 0.19 + -0.02j -0.05 + -0.16j

0.21 + -0.06j 0.06 + 0.11j 0.23 + 0.47j 0.10 + -0.10j -0.13 + -0.26j -0.10 + -0.06j -0.07 + 0.15j

0.06 + -0.15j -0.14 + 0.15j -0.04 + 0.05j 0.56 + 0.56j 0.27 + -0.22j 0.01 + 0.11j 0.09 + -0.30j

-0.06 + 0.09j -0.14 + -0.02j 0.00 + -0.10j 0.06 + -0.13j 0.57 + 0.42j -0.07 + -0.07j 0.10 + -0.09j

0.02 + 0.04j -0.16 + -0.02j 0.08 + -0.11j 0.13 + 0.13j -0.23 + -0.12j 0.65 + 0.57j 0.02 + -0.08j

0.07 + -0.13j 0.12 + 0.02j 0.14 + -0.08j 0.07 + -0.00j -0.21 + 0.11j 0.17 + 0.10j 0.47 + 0.28j

Iteration: 1

U-Induced Partition: [7]

Not in Pre-Solution form

Please refer Definition 3

Reason: A^l_ii/B^l_ii , the l,i,j of A^l_ij which fail's the criterion as follows:

l = 1 ,i = 1 ,j = 1

l^th partitioned matrix of collection from where sub-matrices (S,R) are picked for Diagonalization

A_1

0.21 0.03+-0.07j -0.03+-0.05j 0.01+0.01j 0.01+-0.00j 0.00+0.04j 0.02+0.00j

0.03+0.07j 0.25 0.03+0.03j 0.04+-0.03j 0.05+-0.01j 0.02+-0.01j 0.04+-0.04j

-0.03+0.05j 0.03+-0.03j 0.22 0.03+-0.02j -0.03+-0.02j -0.04+0.02j -0.08+-0.03j

0.01+-0.01j 0.04+0.03j 0.03+0.02j 0.34 0.02+-0.01j -0.01+0.04j -0.00+0.05j

0.01+0.00j 0.05+0.01j -0.03+0.02j 0.02+0.01j 0.17 0.05+-0.08j 0.02+0.01j

0.00+-0.04j 0.02+0.01j -0.04+-0.02j -0.01+-0.04j 0.05+0.08j 0.28 -0.02+0.01j

0.02+-0.00j 0.04+0.04j -0.08+0.03j -0.00+-0.05j 0.02+-0.01j -0.02+-0.01j 0.22

B_1

0.19 -0.00+-0.01j 0.03+0.04j -0.00+-0.04j 0.04+-0.07j -0.03+-0.02j 0.03+-0.02j

-0.00+0.01j 0.26 -0.05+0.05j -0.00+0.01j -0.09+0.01j -0.02+0.01j 0.07+-0.02j

0.03+-0.04j -0.05+-0.05j 0.20 0.03+-0.05j 0.00+0.02j -0.00+0.04j 0.02+0.02j

-0.00+0.04j -0.00+-0.01j 0.03+0.05j 0.24 0.00+0.00j 0.06+0.06j -0.00+0.01j

0.04+0.07j -0.09+-0.01j 0.00+-0.02j 0.00+-0.00j 0.28 -0.01+0.00j 0.05+-0.00j

-0.03+0.02j -0.02+-0.01j -0.00+-0.04j 0.06+-0.06j -0.01+-0.00j 0.23 -0.03+-0.08j

0.03+0.02j 0.07+0.02j 0.02+-0.02j -0.00+-0.01j 0.05+0.00j -0.03+0.08j 0.29

S

0.21 + 0.00j 0.03 + -0.07j -0.03 + -0.05j 0.01 + 0.01j 0.01 + -0.00j 0.00 + 0.04j 0.02 + 0.00j

0.03 + 0.07j 0.25 + 0.00j 0.03 + 0.03j 0.04 + -0.03j 0.05 + -0.01j 0.02 + -0.01j 0.04 + -0.04j

-0.03 + 0.05j 0.03 + -0.03j 0.22 + 0.00j 0.03 + -0.02j -0.03 + -0.02j -0.04 + 0.02j -0.08 + -0.03j

0.01 + -0.01j 0.04 + 0.03j 0.03 + 0.02j 0.34 + 0.00j 0.02 + -0.01j -0.01 + 0.04j -0.00 + 0.05j

0.01 + 0.00j 0.05 + 0.01j -0.03 + 0.02j 0.02 + 0.01j 0.17 + 0.00j 0.05 + -0.08j 0.02 + 0.01j

0.00 + -0.04j 0.02 + 0.01j -0.04 + -0.02j -0.01 + -0.04j 0.05 + 0.08j 0.28 + 0.00j -0.02 + 0.01j

0.02 + -0.00j 0.04 + 0.04j -0.08 + 0.03j -0.00 + -0.05j 0.02 + -0.01j -0.02 + -0.01j 0.22 + 0.00j

R

0.19 + -0.00j -0.00 + -0.01j 0.03 + 0.04j -0.00 + -0.04j 0.04 + -0.07j -0.03 + -0.02j 0.03 + -0.02j

-0.00 + 0.01j 0.26 + -0.00j -0.05 + 0.05j -0.00 + 0.01j -0.09 + 0.01j -0.02 + 0.01j 0.07 + -0.02j

0.03 + -0.04j -0.05 + -0.05j 0.20 + 0.00j 0.03 + -0.05j 0.00 + 0.02j -0.00 + 0.04j 0.02 + 0.02j

-0.00 + 0.04j -0.00 + -0.01j 0.03 + 0.05j 0.24 + -0.00j 0.00 + 0.00j 0.06 + 0.06j -0.00 + 0.01j

0.04 + 0.07j -0.09 + -0.01j 0.00 + -0.02j 0.00 + -0.00j 0.28 + 0.00j -0.01 + 0.00j 0.05 + -0.00j

-0.03 + 0.02j -0.02 + -0.01j -0.00 + -0.04j 0.06 + -0.06j -0.01 + -0.00j 0.23 + -0.00j -0.03 + -0.08j

0.03 + 0.02j 0.07 + 0.02j 0.02 + -0.02j -0.00 + -0.01j 0.05 + 0.00j -0.03 + 0.08j 0.29 + 0.00j

Setting up an Equivalent Problem

U `blocks further', New partition

Refer Theorem 2, Proof item number/s: 1

[2, 1, 2, 2]

Iteration: 2

U-Induced Partition: [2, 1, 2, 2]

In Pre-Solution form but Not in Solution form

Please refer Definition 3 and 5

U-Induced Graph:

Note: path is seq of l_i_j triples (A_ij non-zero in l^th matrix)

{'part_no': 2, 'clsses': [1, 2], 'paths': {'1_3': ['2_1_3'], '1_4': ['2_1_3', '2_3_4']}, 'c(i)': {1: 1, 3: 1, 4: 1, 2: 2}, '1': [1, 3, 4], '2': [2]}

Please refer Definition 5

Reason: l, i, j of Normal pr(A_ij),pr(B_ij) which is not multiple of Identity as follows

l = 3 ,i = 1 ,j = 3

l^th partitioned matrix of collection from where sub-matrices (S,R) are picked for Diagonalization

A_3

0.13+0.28j 0.00 | -0.00 | -0.19+-0.01j -0.03+0.01j | 0.00 -0.00

0.00 0.13+0.28j | 0.00 | 0.01+0.03j -0.13+-0.14j | 0.00 -0.00

```
----------------------+------------+--------------------------+--------------------------
  -0.00        0.00   | 0.86+0.45j |    -0.00         0.00    |     0.00         0.00
----------------------+------------+--------------------------+--------------------------
  -0.00        0.00   |   -0.00    |  0.61+0.87j      -0.00    | 0.09+-0.39j   0.34+0.13j
  -0.00        0.00   |   -0.00    |     0.00       0.61+0.87j | 0.29+-0.22j  -0.20+-0.35j
----------------------+------------+--------------------------+--------------------------
   0.00       -0.00   |   -0.00    |    -0.00         0.00    |  0.55+0.18j     -0.00
  -0.00        0.00   |   -0.00    |     0.00        -0.00    |     0.00       0.55+0.18j
```

B_3

```
 0.13+0.28j    -0.00    |    0.00    | 0.09+0.15j  -0.09+-0.01j |     0.00        -0.00
   0.00      0.13+0.28j |   -0.00    | 0.08+0.04j  0.16+-0.07j  |    -0.00        -0.00
----------------------+------------+--------------------------+--------------------------
   0.00       -0.00    | 0.86+0.45j |   -0.00         0.00     |     0.00        -0.00
----------------------+------------+--------------------------+--------------------------
   0.00        0.00    |    0.00    | 0.61+0.87j      0.00     | -0.34+0.33j   0.25+0.01j
   0.00        0.00    |   -0.00    |   -0.00       0.61+0.87j | -0.02+0.25j  -0.38+0.30j
----------------------+------------+--------------------------+--------------------------
   0.00       -0.00    |    0.00    |    0.00         0.00     |  0.55+0.18j      0.00
   0.00        0.00    |   -0.00    |    0.00         0.00     |     0.00       0.55+0.18j
```

S

```
-0.01 +  0.07j  -0.27 + -0.01j
-0.15 + -0.22j  -0.05 +  0.05j
```

R

-0.21 + -0.03j -0.08 + 0.16j

 0.09 + -0.15j   0.14 + 0.16j

Setting up an Equivalent Problem

U `blocks further', New partition

Refer Theorem 2, Proof item number/s: 4

[1, 1, 1, 2, 2]

Iteration: 3

U-Induced Partition: [1, 1, 1, 2, 2]

Not in Pre-Solution form

Please refer Definition 3

Reason: A^l_ii/B^l_ii , the l,i,j of A^l_ij which fail's the criterion as follows:

l = 2 ,i = 1 ,j = 4

l^th partitioned matrix of collection from where sub-matrices (S,R) are picked for Diagonalization

A_2

 0.52+0.84j | 0.00 | -0.00 | -0.47+0.34j 0.39+-0.12j | 0.00   0.00

------------+------------+------------+-------------------------+-------------------------

    0.00 | 0.52+0.84j | 0.00 | 0.40+0.06j   0.51+0.27j | -0.00   0.00

------------+------------+------------+-------------------------+-------------------------

   -0.00 | 0.00 | 0.90+0.96j | -0.00   -0.00 | 0.00   0.00

------------+------------+------------+-------------------------+-------------------------

    0.00 | -0.00 | 0.00 | 0.21+0.48j   0.00 | 0.05+0.04j 0.07+-0.03j

    0.00 | -0.00 | -0.00 | -0.00   0.21+0.48j | -0.07+0.03j -0.00+-0.06j

```
-----------+-----------+-----------+-------------------------+-------------------------
    0.00   |   -0.00   |   -0.00   |   -0.00        -0.00    |  0.12+0.22j     -0.00
   -0.00   |    0.00   |   -0.00   |    0.00        -0.00    |   -0.00       0.12+0.22j
```

B_2

```
 0.52+0.84j |    0.00   |   -0.00   | 0.37+-0.30j   0.30+-0.43j |     0.00          0.00
-----------+-----------+-----------+-------------------------+-------------------------
   -0.00    | 0.52+0.84j |    0.00   | -0.44+-0.29j   0.45+0.15j |     0.00          0.00
-----------+-----------+-----------+-------------------------+-------------------------
   -0.00    |    0.00   | 0.90+0.96j |     0.00          0.00    |     0.00         -0.00
-----------+-----------+-----------+-------------------------+-------------------------
    0.00    |    0.00   |    0.00   |  0.21+0.48j       0.00    | 0.05+-0.07j    0.04+0.03j
    0.00    |    0.00   |   -0.00   |    -0.00       0.21+0.48j | -0.04+-0.02j  -0.04+0.07j
-----------+-----------+-----------+-------------------------+-------------------------
   -0.00    |   -0.00   |    0.00   |     0.00          0.00    |  0.12+0.22j       0.00
    0.00    |    0.00   |    0.00   |     0.00          0.00    |    -0.00       0.12+0.22j
```

S

```
-0.47 +  0.34j   0.39 + -0.12j
```

R

```
 0.37 + -0.30j   0.30 + -0.43j
```

Setting up an Equivalent Problem

U `blocks further', New partition

Refer Theorem 2, Proof item number/s: 2,3

[1, 1, 1, 1, 1, 2]

Iteration: 4

U-Induced Partition: [1, 1, 1, 1, 1, 2]

Not in Pre-Solution form

Please refer Definition 3

Reason: A^l_ii/B^l_ii , the l,i,j of A^l_ij which fail's the criterion as follows:

l = 2 ,i = 4 ,j = 6

l^th partitioned matrix of collection from where sub-matrices (S,R) are picked for Diagonalization

A_2

0.52+0.84j	0.00	-0.00	0.00	0.57+-0.42j	0.00 0.00
0.00	0.52+0.84j	0.00	0.70+0.11j	0.00	-0.00 0.00
-0.00	0.00	0.90+0.96j	-0.00	0.00	0.00 0.00
0.00	-0.00	-0.00	0.21+0.48j	0.00	-0.03+0.03j 0.06+-0.06j
-0.00	-0.00	-0.00	-0.00	0.21+0.48j	-0.08+-0.03j -0.05+-0.01j
0.00	-0.00	-0.00	-0.00	0.00	0.12+0.22j -0.00
-0.00	0.00	-0.00	0.00	-0.00	-0.00 0.12+0.22j

B_2

0.52+0.84j | 0.00 | -0.00 | -0.00 | -0.55+0.45j | 0.00 0.00

-0.00 | 0.52+0.84j | 0.00 | 0.59+0.39j | -0.00 | 0.00 0.00

-0.00 | 0.00 | 0.90+0.96j | -0.00 | -0.00 | 0.00 -0.00

0.00 | -0.00 | -0.00 | 0.21+0.48j | -0.00 | -0.07+0.04j -0.04+0.03j

---

-0.00 | -0.00 | 0.00 | -0.00 | 0.21+0.48j | 0.00+0.06j -0.01+-0.08j

---

-0.00 | -0.00 | 0.00 | -0.00 | -0.00 | 0.12+0.22j 0.00

0.00 | 0.00 | 0.00 | 0.00 | -0.00 | -0.00 0.12+0.22j

S

-0.03 + 0.03j 0.06 + -0.06j

R

-0.07 + 0.04j -0.04 + 0.03j

Setting up an Equivalent Problem

U `blocks further', New partition

Refer Theorem 2, Proof item number/s: 2,3

[1, 1, 1, 1, 1, 1, 1]

Iteration: 5

U-Induced Partition: [1, 1, 1, 1, 1, 1, 1]

In Solution form:

U-Induced Graph:

Note: path is seq of l_i_j triples (A_ij non-zero in l^th matrix)

{'part_no': 2, 'clsses': [1, 3], 'paths': {'1_2': ['2_1_5', '2_5_6', '3_4_6', '2_2_4'], '1_4': ['2_1_5', '2_5_6', '3_4_6'], '1_5': ['2_1_5'], '1_6': ['2_1_5', '2_5_6'], '1_7': ['2_1_5', '3_5_7']}, 'c(i)': {1: 1, 2: 1, 4: 1, 5: 1, 6: 1, 7: 1, 3: 3}, '1': [1, 2, 4, 5, 6, 7], '2': [3]}

Please Refer Definition 5 and Theorem 1

U_sol

1.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j
0.00 + 0.00j	0.95 + -0.31j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j
0.00 + 0.00j	0.00 + 0.00j	1.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j
0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.73 + -0.68j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j
0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	-1.00 + -0.05j	0.00 + 0.00j	0.00 + 0.00j
0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.42 + -0.91j	0.00 + 0.00j
0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	0.00 + 0.00j	-0.58 + 0.82j

U_sol checked

The collection is S.U.S i.e Simultaneously Unitarily Similar !

U (U_found) that solves the original (given) problem

U_found

0.14 + -0.24j	0.19 + -0.25j	-0.24 + 0.33j	-0.14 + 0.22j	0.08 + -0.17j	-0.39 + 0.60j	-0.14 + 0.17j

-0.02 + -0.22j -0.12 + -0.26j -0.30 + -0.77j -0.13 + 0.08j 0.12 + -0.03j 0.12 + 0.14j 0.27 + 0.21j

-0.13 + -0.60j 0.12 + -0.23j 0.11 + 0.02j 0.15 + 0.29j 0.13 + 0.41j -0.06 + -0.21j -0.06 + -0.45j

0.07 + 0.49j 0.01 + -0.15j 0.09 + 0.07j -0.34 + 0.41j 0.57 + 0.18j 0.23 + 0.06j 0.05 + -0.17j

-0.36 + 0.06j -0.03 + -0.05j 0.32 + -0.04j -0.25 + 0.26j -0.18 + -0.45j -0.40 + -0.11j 0.42 + -0.21j

-0.26 + 0.15j 0.39 + -0.02j -0.12 + -0.01j 0.12 + 0.53j -0.24 + 0.09j 0.06 + -0.31j -0.15 + 0.51j

0.14 + 0.05j -0.56 + -0.51j -0.01 + 0.11j -0.32 + 0.02j -0.31 + 0.11j -0.09 + -0.28j -0.29 + 0.10j

The U that was used to set-up the problem, algorithm found a different U ?

U_usd

-0.27 + -0.00j -0.32 + -0.00j 0.40 + 0.00j 0.26 + 0.00j -0.19 + -0.00j 0.72 + 0.00j 0.21 + 0.00j

-0.18 + 0.14j -0.16 + 0.23j -0.49 + 0.67j 0.14 + 0.07j -0.09 + -0.08j 0.05 + -0.17j 0.03 + -0.33j

-0.44 + 0.43j -0.26 + 0.02j -0.04 + -0.10j 0.17 + -0.28j 0.28 + -0.33j -0.14 + 0.16j -0.35 + 0.29j

0.37 + -0.33j -0.11 + 0.07j -0.01 + -0.10j 0.52 + 0.06j -0.17 + -0.57j -0.08 + -0.23j -0.20 + 0.06j

0.24 + 0.28j -0.02 + 0.04j -0.21 + -0.23j 0.35 + 0.07j -0.29 + 0.40j 0.12 + 0.40j -0.40 + -0.23j

0.27 + 0.14j -0.24 + -0.30j 0.07 + 0.08j 0.39 + -0.38j 0.21 + 0.14j -0.28 + 0.10j 0.52 + -0.17j

-0.03 + -0.15j -0.13 + 0.76j 0.09 + -0.06j 0.19 + 0.26j 0.25 + 0.19j -0.19 + 0.22j 0.23 + 0.18j