```
14
           0.100000 0.000000
   6
   7
        16
           0.100000 0.000000
   9
        15 -0.173205 0.000000
   10
        15 -0.100000 0.000000
            === PiLib Variable =====
hop.hop_mat(1)(:,:,3), @a-sp, hop_mat between site-1 and its 3-th neighbor
ORDER= 1, SIZE=[ 7, 3], TYPE=SPARSE
   1
        2
   16
        16 0.000000 0.000000
   2
        12 -0.100000 0.000000
   3
        11 -0.100000 0.000000
   5
        13 -0.200000 0.000000
   7
        15 -0.100000 0.000000
   8
        14 -0.100000 0.000000
   10
        16 -0.200000 0.000000
         ===== PiLib Variable ======
hop.hop_mat(1)(:,:,4), @a-sp, hop_mat between site-1 and its 4-th neighbor
ORDER= 1, SIZE=[ 7, 3], TYPE=SPARSE
   1
   16
        16
           0.000000 0.000000
   2
        12
            0.100000 0.000000
   3
        11
            0.100000 \ 0.000000
   5
        13
            0.200000 0.000000
   7
        15
            0.100000 0.000000
   8
            0.100000 \ 0.000000
        14
   10
        16
            0.200000 0.000000
         ===== PiLib Variable ======
hop.hop_mat(1)(:,:,5), @a-sp, hop_mat between site-1 and its 5-th neighbor
ORDER= 1, SIZE=[ 9, 3], TYPE=SPARSE
   1
        2
                     3
   16
        16 0.000000 0.000000
        11 -0.100000 0.000000
   1
   2
        13 -0.100000 0.000000
   4
        12 0.173205 0.000000
   5
        12
           0.100000 0.000000
   6
        14 -0.100000 0.000000
   7
        16 -0.100000 0.000000
   9
           0.173205 0.000000
        15
   10
        15 0.100000 0.000000
        ===== PiLib Variable =======
hop.hop_mat(1)(:,:,6), @a-sp, hop_mat between site-1 and its 6-th neighbor
ORDER= 1, SIZE=[ 7, 3], TYPE=SPARSE
```

1 2 3

4

5

12 -0.173205 0.000000

12 -0.100000 0.000000