## Matrix representation of operator in Fock representation

```
ANNIHILATION: 0 mat elmt: (0,
                                 1),
                                      1
ANNIHILATION: 0 mat elmt: (2, 3),
                                      1
ANNIHILATION: 0 mat_elmt: (4, 5), ANNIHILATION: 0 mat_elmt: (6, 7),
                                      1
                                      1
ANNIHILATION: 0 mat elmt: (8,
                                 9),
                                      1
ANNIHILATION: 0 mat elmt: (10,
                               11),
                                      1
ANNIHILATION: 0 mat elmt: (12, 13),
                                      1
ANNIHILATION: 0 mat_elmt: (14, 15),
                                      1
ANNIHILATION: 1 mat elmt: (0, 2),
ANNIHILATION: 1 mat_elmt: ( 1,
                                3),
                                     - 1
                                6),
ANNIHILATION: 1 mat elmt: ( 4,
                                      1
ANNIHILATION: 1 mat_elmt: (5, 7),
                                     - 1
ANNIHILATION: 1 mat_elmt: (8, 10),
                                      1
ANNIHILATION: 1 mat elmt: (9, 11),
ANNIHILATION: 1 mat elmt: (12, 14),
              1 mat elmt:
                           (13,
ANNIHILATION:
ANNIHILATION: 2 mat elmt: (0, 4),
                                      1
ANNIHILATION: 2 mat_elmt: (1, 5),
                                6), -1
ANNIHILATION: 2 mat_elmt: ( 2,
ANNIHILATION: 2 mat_elmt: (3, 7), 1
ANNIHILATION: 2 mat elmt: (8, 12),
ANNIHILATION: 2 mat_elmt: (9, 13), -1
ANNIHILATION: 2 mat elmt: (10, 14),
                                     - 1
              2 mat elmt:
                           (11,
                                15),
ANNIHILATION:
                                      1
                               8),
ANNIHILATION: 3 mat elmt: (0,
                                      1
ANNIHILATION: 3 mat_elmt: (1, 9),
                                     - 1
ANNIHILATION: 3 mat_elmt: ( 2, 10), -1
ANNIHILATION: 3 mat elmt: (3, 11),
                                    1
ANNIHILATION: 3 mat elmt: (4, 12),
                                     - 1
ANNIHILATION: 3 mat_elmt: (5, 13),
                                      1
```

```
ANNIHILATION: 3 mat_elmt: (6, 14), 1
ANNIHILATION: 3 mat_elmt: (7, 15), -1
```

```
CREATION: 0 mat elmt: (1, 0),
                                   1
CREATION: 0 mat_elmt: (3, 2),
                                   1
CREATION: 0 mat_elmt: (5, 4),
                                   1
CREATION: 0 mat_elmt: (7, 6),
                                   1
CREATION: 0 mat_elmt: ( 9, 8),
                                   1
CREATION: 0 mat_elmt: (11, 10),
                                   1
CREATION: 0 mat elmt: (13, 12),
                                   1
CREATION: 0 mat_elmt: (15, 14),
                                   1
CREATION: 1 mat_elmt: ( 2,
                             0), 1
CREATION: 1 mat_elmt: (3, 1), -1 CREATION: 1 mat_elmt: (6, 4), 1
CREATION: 1 \text{ mat\_elmt}: (7, 5),
                                  - 1
CREATION: 1 mat elmt: (10, 8), 1
CREATION: 1 mat elmt: (11, 9), -1
CREATION: 1 mat_elmt: (14, 12), 1
CREATION: 1 mat elmt: (15, 13),
CREATION: 2 mat elmt: (4,
                             0),
                                   1
CREATION: 2 mat_elmt: ( 5, 1), -1
CREATION: 2 mat_elmt: (6, 2), -1
CREATION: 2 mat elmt: (7, 3), 1
CREATION: 2 mat_elmt: (12, 8),
                                   1
CREATION: 2 mat_elmt: (13, 9),
                                  - 1
CREATION: 2 mat elmt: (14, 10), -1
CREATION: 2 mat elmt: (15, 11),
CREATION: 3 mat elmt: (8, 0),
                                   1
CREATION: 3 mat_elmt: (9, 1), -1 CREATION: 3 mat_elmt: (10, 2), -1
CREATION: 3 mat elmt: (11, 3),
```

```
CREATION: 3 mat_elmt: (12, 4), -1 CREATION: 3 mat_elmt: (13, 5), 1 CREATION: 3 mat_elmt: (14, 6), 1 CREATION: 3 mat_elmt: (15, 7), -1
```