```
ftn58sparse =

  struct with fields:

     System: 'Bi2Se3_bulk'
      Ainfo: [1x5 struct]
        abc: [9.8390 9.8390 9.8390]
         BR: [3x3 double]
        Nat: 5
        ver: 'type1'
       isSO: 1
       norb: 40
    Orbitps: [40x7 double]
         ij: [2980x2 double]
         tt: [2980x1 double]
         dd: [2980x3 double]
```

the name of the system

information about atoms

lattice constants

Bravais vectors

# of atoms

type 1: Bloch basis
type 2: Wannier basis

Whether both spins are considered or not

# of spin-orbitals

information about spin-orbitals

```
ftn58sparse.abc
```

```
ans =

    9.8390    9.8390    9.8390
```

```
ftn58sparse.BR
```

```
ans =

   -0.2091   -0.1207    0.9704
    0.2091   -0.1207    0.9704
         0    0.2414    0.9704
```

$$\begin{cases} \vec{a} = a \cdot (BR(1,1)\hat{x} + BR(1,2)\hat{y} + BR(1,3)\hat{z}) \\ \vec{b} = b \cdot (BR(2,1)\hat{x} + BR(2,2)\hat{y} + BR(2,3)\hat{z}) \\ \vec{c} = c \cdot (BR(3,1)\hat{x} + BR(3,2)\hat{y} + BR(3,3)\hat{z}) \end{cases}$$

```
ftn58sparse.Ainfo
```

```
ans =

  1x5 struct array with fields:

    Atom
    Position
    Norb
    OrbitIndex
    Orbit
    OrbitID
```

```
struct2table(ftn58sparse.Ainfo)
```

fractional coordinates !
(in basis of $\vec{a}, \vec{b}, \vec{c}$)

```
ans =

  5x6 table
```

Atom	Position			Norb	OrbitIndex				Orbit	OrbitID			
'Bi'	0.399	0.399	0.399	4	1	2	3	4	' s px py pz'	1	2	3	4
'Bi'	0.601	0.601	0.601	4	5	6	7	8	' s px py pz'	1	2	3	4
'Se'	0	0	0	4	9	10	11	12	' s px py pz'	1	2	3	4
'Se'	0.792	0.792	0.792	4	13	14	15	16	' s px py pz'	1	2	3	4
'Se'	0.208	0.208	0.208	4	17	18	19	20	' s px py pz'	1	2	3	4

```
ftn58sparse.Orbitps
```

OrbitIndex | original OrbitIndex | Atom | Position | | | OrbitID

```
ans =
```

1.0000	1.0000	1.0000	0.3990	0.3990	0.3990	1.0000
2.0000	2.0000	1.0000	0.3990	0.3990	0.3990	2.0000
3.0000	3.0000	1.0000	0.3990	0.3990	0.3990	3.0000
4.0000	4.0000	1.0000	0.3990	0.3990	0.3990	4.0000
5.0000	5.0000	2.0000	0.6010	0.6010	0.6010	1.0000
6.0000	6.0000	2.0000	0.6010	0.6010	0.6010	2.0000
7.0000	7.0000	2.0000	0.6010	0.6010	0.6010	3.0000
8.0000	8.0000	2.0000	0.6010	0.6010	0.6010	4.0000
9.0000	9.0000	3.0000	0	0	0	1.0000
10.0000	10.0000	3.0000	0	0	0	2.0000
11.0000	11.0000	3.0000	0	0	0	3.0000
12.0000	12.0000	3.0000	0	0	0	4.0000
13.0000	13.0000	4.0000	0.7920	0.7920	0.7920	1.0000
14.0000	14.0000	4.0000	0.7920	0.7920	0.7920	2.0000
15.0000	15.0000	4.0000	0.7920	0.7920	0.7920	3.0000
16.0000	16.0000	4.0000	0.7920	0.7920	0.7920	4.0000
17.0000	17.0000	5.0000	0.2080	0.2080	0.2080	1.0000
18.0000	18.0000	5.0000	0.2080	0.2080	0.2080	2.0000
19.0000	19.0000	5.0000	0.2080	0.2080	0.2080	3.0000
20.0000	20.0000	5.0000	0.2080	0.2080	0.2080	4.0000
21.0000	1.0000	1.0000	0.3990	0.3990	0.3990	1.0000
22.0000	2.0000	1.0000	0.3990	0.3990	0.3990	2.0000