Since a field on the BZ is a periodic function of

crystal momentum, it can be decomposed into discrete Fourier Harmonics.

Hamiltonians have particularly simple harmonics.

The BZO field saves the object through its Fourier components (saved in ObjList),

with the corresponding "wavevector" saved in IndList.

All standard operations, as well as scalar addition are defined for BZO's.

This included multiplication and addition of two BZOs (resulting in a third

BZO)

When BZO is called at a crystal momentum, or an array or list of crystal momenta,

an array is returned with the values of the field at the k-points listed in the array.

10 x efficiency can be achieved when calling the BZO function with the vector span-format (see \_\_call\_\_).

When list element is referred to, returns corresponding harmonic, such that BZO[n,m,k] returns the

(n,m,k)th Fourier Harmonic """

"""Also contains numlist, which sorts the indices, and is used for rapidly finding elements in

indlist and objlist. In this list, indices ind IndList are translated to integers, using

the \_\_IndexCounter variable. \_\_IndexCounter is not fixed, but is by default set to 1e6.

Elements in IndList and ObjList are sorted according to their values in NumList. """

""" If list element (a,b) is empty, F[a,b] returns BZO.\_\_ZeroObject. This object acts as the

zero matrix in all ways, except that a new object and index is added to the IndList and ObjList, if

F[a,b] is set to a nonzero value.

I.e.

print(4\*F[a,b]) returns [[0,0]

[0,0]]

But if we set F[a,b] = X

(a,b) is added to indlist, with corresponding ObjList element giben by x

such that

F[a,b]=x