1.78: Partial symmetry

The symmetry operations of a space group are isometries operating on the whole crystal pattern and are also called **total operations** or **global operations**. More generally, the crystal space can be divided in N components S_1 to S_N, and a coincidence operation $\varphi(S_i) \rightarrow S_j$ can act on just the i-th component S_i to bring it to coincide with the j-th component S_j. Such an operation is not one of the operations of the space group of the crystal because it is not a coincidence operation of the whole crystal space; it is not even defined, in general, for any component k different from i. It is called a **partial operation**: from the mathematical viewpoint, partial operations are space-groupoid operations.

When $i = j$, *i.e*. when the operation is $\varphi(S_i) \rightarrow S_i$ and brings a component to coincide with itself, the partial operation is of special type and is called **local**. A local operation is in fact a symmetry operation, which is defined only on a part of the crystal space: local operations may constitute a subperiodic group.