1.58: Incommensurate composite crystal

An *incommensurate composite crystal* is a compound with two or more (*N*) subsystems that are themselves modulated structures, with basis structures that are mutually incommensurate. Each subsystem (numbered by ν) has a reciprocal lattice for its basic structure with three basis vectors $a_i^{*\nu}$. There is a basis of the vector module of diffraction spots that has at most 3*N* basis vectors A_j^* such that

$$a_i^{*\nu} = \sum_{j=1}^{n} Z_{ij}^{\nu} A_j^* \quad (i = 1, 2, 3),$$

where Z_{ij}^{ν} are integer coefficients. If *n* is larger than the dimension of space (three), the composite crystal is an aperiodic crystal. *n* is the rank of the vector module.