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Introduction to Modulated Structures. Lee M. Daniels, Christer Svensson, Rigaku Americas Corp., The Woodlands, TX, and Materials Chemistry, Lund Univ., Lund, Sweden.

The ease with which we collect diffraction data with area detectors has simplified the lives of crystallographers, but also has revealed that non-traditional diffraction effects are not as uncommon as we once thought. Diffuse scattering, twinning, and incommensurate modulations appear regularly during otherwise routine crystallographic analyses. Modulated structures arise from a variety of different phenomena, and each of these can be thought of as some kind of perturbation of the short-range order that is assumed in a traditional 3-dimensional crystal structure. A beginner's description of these effects will be given, along with examples, and a straightforward, understandable approach to indexing and refining the main and satellite reflections will be described.