Introducing Twinning

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Twinning is a relatively common phenomenon in crystallography, but it has long been considered to be amongst the most serious obstacles to successful structure determination. A twinned crystal is an aggregate in which different domains are joined together according to a specific symmetry operation - the twin law. Reflections from different domains may overlap, and twinned crystals fall broadly into two categories in which either all reflections or only certain zones of reflections are affected by overlap. The former occurs when a crystal lattice belongs to a higher point group than the crystal structure itself, the latter frequently occurs when the twin law is a symmetry operation belonging to a higher symmetry supercell.

Software has now developed to such an extent that some twin problems can now be tackled using a black-box approach. More commonly, successful use of these tools depends of some understanding of twinning and its basis in symmetry. This talk will describe some of my experiences in teaching students about twinning.