3.15: Friedel pair

The couple of reflections h, k, l and $\bar{h}, \bar{k}, \bar{l}$ is called a Friedel pair, or Bijvoet pair. Their intensities are equal either if the crystal structure is centrosymmetric or if there is no resonant scattering, but differ otherwise. Friedel's law then does not hold. For crystals with a non-centrosymmetric structure and significant resonant scattering, equivalent reflections generated by the symmetry operations of the point group of the crystal have intensities different from those of equivalent reflections generated by the introduction of an additional inversion centre in normal scattering. Friedel, or Bijvoet pairs are used in the resolution of the phase problem for the solution of crystal structures and in the determination of absolute structure.