5.3: Direct methods

The family of methods for solving the phase problem in crystal structure determination. The phases of scattered diffraction beams cannot be directly observed. However, they can be estimated from probability relationships applied to the phases of the most intense diffraction peaks. The facts that scattering centers in a crystal are discrete atoms (*i.e.* sources of electron density) and that the electron density must be non-negative are the types of constraints that restrict the possible values of the phases, and allow initial estimates of some of them.