

## 10.7: Optical resolution

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By analogy with optical observations, *e.g.* in astronomy, the term **optical resolution** in structure determination,  $d_{opt}$ , is used to describe the expected minimum distance between two resolved peaks in an electron-density map.

$$d_{opt} = [2(\sigma_{Patt}^2 + \sigma_{sph}^2)]^{\frac{1}{2}}$$

where  $\sigma_{Patt}$  is the standard deviation of the Gaussian function fitted to the Patterson origin peak,  $\sigma_{sph}$  is the standard deviation of the Gaussian function fitted to the origin peak of the spherical interference function, representing the Fourier transform of a sphere with radius  $1 / d_{min}$ , and  $d_{min}$  is the nominal resolution.

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