

Specular and nonspecular x-ray scattering from multilayers

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Specular and nonspecular (diffuse) x-ray reflectivity from multilayers will be reviewed. For the specular reflectivity, a brief discussion of the following topics will be given: the validity of the kinematic approximation, the inverse problem of reflectivity data, the dynamical theories, the internal field distribution, and standing waves in multilayers. The diffuse scattering part will include a discussion of different approximations, and will focus on how the height-height cross- and self-correlations can be determined experimentally, illustrated by examples and new applications.