

## **W0509**

**Off-Specular Grazing Incidence Scattering from Surfaces: Theory and Applications.** Sunil K. Sinha Physics Dept., Univ. of California San Diego, La Jolla, CA 92093, LANSCE, Los Alamos National Laboratory, N.M. 875411.

Grazing incidence scattering studies of surfaces, in the form of off-specular diffuse scattering, grazing incidence small angle scattering and grazing incidence diffraction have become active areas of research and are a useful complement to specular reflectivity studies. Such studies are now being carried out at most major facilities with X-rays and neutrons to study the morphology of both magnetic and non-magnetic interfaces. We shall briefly review how these types of scattering can be analyzed to yield information about quantities such as structural and magnetic roughness, domains and patterning in thin films, dot arrays and thermal interface fluctuations. We shall illustrate this with examples from recent experiments. The use of coherent X-ray beams in such studies will also be discussed.

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