

Abstract Submitted
for the MAR11 Meeting of
The American Physical Society

Characterization and Modeling of Off-Specular Neutron Scattering for Analysis of Two Dimensional Ordered Structures CHRISTOPHER METTING, University of Maryland, BRIAN MARANVILLE, PAUL KIENZLE, NIST Center for Neutron Research, ROBERT BRIBER, University of Maryland, JOSEPH DURA, CHUCK MAJKRZAK, NIST Center for Neutron Research — The University of Maryland along with NIST Center for Neutron Research (NCNR) and the NSF funded DANSE project are currently developing off-specular neutron reflectometry modeling software for fitting scattering data from multilayer samples. The software includes a robust sample representation scheme for easy development of various models. Theory functions are being calculated using a variety of approximations. The suite of approximations allows for the evaluation of each calculation's usefulness in representing the scattering data. In this presentation we describe corrections made to a purely Born approximation that capture dynamical scattering and resolution effects seen in measured data. We then show modeled data taken on the Advanced Neutron Diffractometer/Reflectometer (AND/R) at the NIST Center for Neutron Research (NCNR) from a sample of gold pillars using a substrate modified Born approximation, and compare it to a model which uses a purely Born approximation.

Christopher Metting
University of Maryland

Date submitted: 19 Nov 2010

Electronic form version 1.4