

BornAgain: Simulate and Fit Grazing Incidence Small-Angle Scattering

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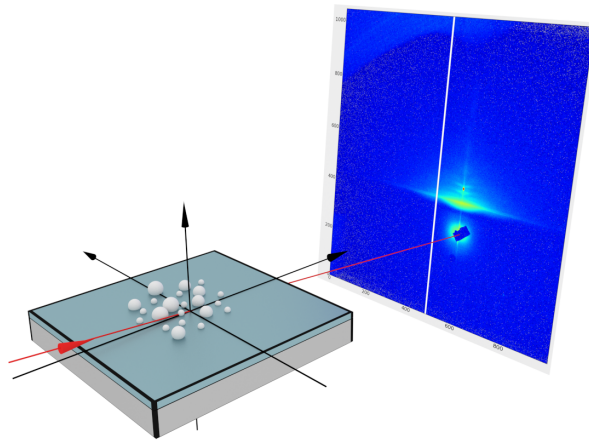
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BornAgain [1] is a multi-platform open-source project that aims at supporting scientists in the analysis and fitting of their GISAS data, from both synchrotron (GISAXS) and neutron (GISANS) facilities. The software provides a generic framework for modeling multilayer samples with smooth or rough interfaces and with various types of embedded nanoparticles.



BornAgain software is provided with a graphical user interface as well as a Python API. The sample model includes over twenty particle form factors, particle size distribution and complex composite particles as well as roughness of the layers. The instrument model accounts for the resolution effects and two kinds of detectors: rectangular and spherical. The simulation of the scattering process is performed in the framework of the distorted-wave Born approximation (DWBA). Both polarized and unpolarized neutron scattering can be simulated.

References:

[1] C. Durniak, M. Ganeva, G. Pospelov, W. Van Herck, J. Wuttke (2015), BornAgain - Software for simulating and fitting X-ray and neutron small-angle scattering at grazing incidence, <http://www.bornagainproject.org>