Contribution ID: **13** Type: **Short talk**

Model-Independent Recovery of Interfacial Structure from Neutron Reflectivity Data

Wednesday, 26 June 2019 11:00 (20 minutes)

Neutron specular reflectivity at soft interfaces provides sub-nanometer information concerning the molecular distribution of thin films, while the application of contrast variation permits to highlight the scattering from different parts of the system and can lead to an overall reduction of fitting ambiguity. Traditional modelling approaches involve the construction of a trial scattering length density profile based on initial speculation and the subsequent refinement of its parameters through minimisation of the discrepancy between the calculated and measured reflectivity. In practice this might produce an artificial bias towards specific sets of solutions. Here we present an integrated Indirect Fourier Transform/Simulated annealing method that when applied to multiple solvent contrast reflectivity data, leads to reliable reconstructions of the interfacial structure without the need for any a priori assumptions. The generality of the method permits its straightforward application in common experimental contrast variation investigations.

Primary author: KOUTSIOUMPAS, Alexandros (JCNS)

Presenter: KOUTSIOUMPAS, Alexandros (JCNS)

Session Classification: Science group meetings 1