

refnx - The Next Generation of Reflectometry Analysis Software

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refnx [1] is a next generation reflectometry analysis package, building on its predecessor, Motofit. In this presentation we discuss its main design features:

- Bayesian statistics core with comprehensive uncertainty analyses and model selection ("how many layers can the data justify") [2].
- modular construction of structural models, ranging from a basic Slab up to freeform SLD profiles and Lipid membrane leaflets. These components are easily extensible.
- Co-refinement of multiple contrast datasets.
- Mixed Area models.
- Python based with analyses performed in Jupyter notebooks or a Qt GUI.

refnx is specifically designed to facilitate reproducible research. Here we also discuss what reproducible research means in the context of a neutron scattering study, outlining how this is achieved with refnx, and how these practices could (should) be taken up by neutron scatterers in general.

[1] Nelson, A. R. J. & Prescott, S. W.

refnx: neutron and X-ray reflectometry analysis in Python

Journal of Applied Crystallography, 2019, 52, 193-200

[2] If you don't know what Bayesian statistics is and have always wondered, you'll now find out.

Speakers Gender

Level of Expertise

Expert

Do you wish to take part in the poster slam

No

Primary author(s) : NELSON, Andrew (ANSTO); PRESCOTT, Stuart (UNSW Chemical Engineering)

Presenter(s) : NELSON, Andrew (ANSTO)

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