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Tuesday 18 Oct, 9:00

Refinement of Magnetic Diffuse Scattering Data

Joe Paddison

I will discuss techniques for refinement of magnetic diffuse scattering data, and the real-space information they can provide about magnetic materials such as spin liquids, spin ices, and skyrmion crystals. I will introduce the computer programs Spinvert and Spinteract, which can be used to estimate the short-range magnetic correlations and the magnetic interactions that drive them, respectively. I present several examples to demonstrate the capabilities of the suite of programs: fitting to powder and single-crystal diffuse-scattering data, predicting single-crystal diffuse-scattering patterns given powder data, and parametrising spin Hamiltonians of magnetic materials using magnetic diffuse scattering data.

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