Contribution ID: **358** Type: **Talk**

【665】Investigating Stability and Metastability in the Skyrmion system zinc-doped Cu2OSeO3

Thursday 29 August 2019 15:30 (30 minutes)

Skyrmions are topologically protected spin textures that appear in certain chiral magnetic materials. One bulk chiral material in which skyrmions are observed is the multiferroic insulator Cu2OSeO3. In this talk I will present small angle neutron scattering (SANS) and magnetometry work studying skyrmion metastability in zinc-substituted Cu2OSeO3. This substitution dramatically increases the metastable lifetime of skyrmions, by a factor 50 with just 2.5% Zn. Furthermore, we can use SANS to measure the formation time of skyrmions out of the conical state when an electric field is applied to Zn substituted Cu2OSeO3. The temperature dependence of these formation times follow an Arrhenius law dependence, allowing us to extract an energy barrier for the formation of skyrmions of 1.57 eV.

Authors: Prof. HATTON, Peter D. (Department of Physics, Durham University); BIRCH, Max T. (Department of Physics, Durham University); WILSON, Murray N. (Department of Physics, Durham University); TAKAGI, Rina (RIKEN); SEKI, Shinichiro (RIKEN); TOKURA, Yoshinori (RIKEN & University of Tokyo); CRISANTI, Marta (Institut Laue-Langevin); ŠTEFANČIČ, Ales (University of Warwick); Dr WHITE, Jonathan (Laboratory for Neutron Scattering and Imaging, Paul Scherrer Institut); BALAKRISHNAN, Geetha (University of Warwick); CUBITT, Robert (University of Warwick)

Presenter: Prof. HATTON, Peter D. (Department of Physics, Durham University)

Session Classification: Skyrmions in magnetic materials