



Contribution ID: 136

Type: **Talk**

[616] Investigation of Metal-Insulator transition in NaOsO₃ using Resonant X-Ray Diffraction

Wednesday 23 August 2017 18:15 (15 minutes)

In 5-d transition metal oxides, spin-orbit coupling becomes sizable and its interplay with e.g. the Coulomb interaction has led to the observation of exciting novel ground states. We report here on NaOsO₃, which has been proposed to be the first realization of a Slater insulator i.e. a system in which a metal-insulator transition is driven only by antiferromagnetic correlation. We employed Resonant X-ray Diffraction to elucidate the nature of the metal-insulator transition. By a careful study of forbidden reflections, we can exclude the presence of a structural crystallographic change at the phase transition. In addition, we observe an anomaly below the Neel temperature that is indicative of the Slater scenario.

Author: GURUNG, Namrata (ETH Zurich - Paul Scherrer Institute)

Co-authors: LEO, Naëmi (PSI - Paul Scherrer Institut); Prof. HEYDERMAN, Laura (ETH Zurich - Paul Scherrer Institute); Dr YAMAURA, Kazunari (National Institute for Material Science, Japan); Dr STAUB, Urs (Paul-Scherrer Institute, Switzerland); Dr COLLINS, Steve (Diamond Light Source, UK); Dr JOLY, Yves (Institut Neel, France); Dr SCAGNOLI, Valerio (ETH Zurich - Paul Scherrer Institute)

Presenter: GURUNG, Namrata (ETH Zurich - Paul Scherrer Institute)

Session Classification: Correlated-Electron Physics in Transition-Metal Oxides

Track Classification: Correlated-Electron Physics in Transition-Metal Oxides