



Contribution ID: 51

Type: **Contributed talk**

Magnetic structure of Mn_3Sn

Thursday, 12 December 2024 17:10 (20 minutes)

Mn_3Sn is one of the first antiferromagnetic compounds to exhibit an anomalous hall effect. Mn_3Sn is a frustrated Kagome metal with a broken time reversal symmetry leading to a non-zero Berry curvature, which in turn leads to a large and controllable anomalous Hall effect.

Depending on the exact stoichiometry of the sample, two main types of Mn_3Sn occur. One type exhibits a temperature dependent phase transition into a non-commensurate magnetic structure at around 280K, a structure which no longer breaks time reversal symmetry and hence does not display an anomalous hall effect.

The magnetic structure is essential for understanding the properties of this material. However, despite years of research, the exact structure remains a topic of debate. Using polarimetry, we here settle the debate, by identifying the exact magnetic structure of Mn_3Sn

In this work, we present our D3 polarimetry data and D23 diffraction data, along with our preliminary findings.

Primary author: CEDERHOLM, Jeppe (ILL)

Co-authors: Dr RESSOUCHE, Eric (ILL); JACOBSEN, Henrik; RODRIGUEZ-VELAMAZAN, J. Alberto (ILL); QURESHI, Navid (Institut Laue Langevin); Prof. GUO, Yanfeng (ShanghaiTech)

Presenter: CEDERHOLM, Jeppe (ILL)

Session Classification: Smart materials

Track Classification: Smart materials