

Experimental report

15/09/2019

Proposal: 5-54-237

Council: 10/2016

Title: Coupled structural and magnetic chirality in MnSb₂O₆:

Research area: Physics

This proposal is a new proposal

Main proposer: Chris STOCK

Experimental team: Jana PASZTOROVA
Chris STOCK
Manila SONGVILAY

Local contacts: Navid QURESHI
Anne STUNAUULT

Samples: MnSb₂O₆

Instrument	Requested days	Allocated days	From	To
D3	5	5	08/02/2017	13/02/2017

Abstract:

MnSb₂O₆ (space group P321) is structurally and magnetically chiral. This proposal aims to use polarised neutrons to determine the sign of the magnetic chirality and also to measure anomalous Schwinger scattering to determine the sign of the nuclear chirality. The overall goal is to determine if the magnetic and structural chirality are coupled.

The goal of the experiment was to establish the magnetic and structural chirality of MnSb_2O_6 . We successfully did this and found the crystal to be single domain magnetic chiral. The nuclear chirality was ambiguous and led us to a follow on experiment using IN20 with larger single crystals to confirm the lack of structural chirality.