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**Magnetic structure of magnetic semiconductor NdBiPt studied by elastic neutron diffraction** ROGER MUELLER, ALEXANDRE DESILETS-BENOIT, ANDREA BIANCHI, LUC LAPOINTE, University of Montreal, ZAHRA YAMANI, Canadian Neutron Beam Centre National Research Council , MICHEL KENZELMANN, Paul Scherrer Institut — We report a study of the magnetic structure of the antiferromagnetic (AFM) half-heusler NdBiPt via neutron scattering. NdBiPt exibits an AFM transition at $T_{\mathrm{N}} = 2.2$K with an ordered moment of $3.6\mu_{\mathrm{B}}$ per Nd atom, as determined from magnetization measurement. The insulating state of NdBiPt has been proposed to be a new class of a three dimensional topological insulator, which possesses surfaces states at step edges on facets, with properties that are analogous to those observed in quantum Hall states. However, this would require an orientation of the magnetic moments in the ordered state along the crystallographic direction [001]. Triple-axis neutron axis diffraction on a single crystal was used to study the magnetic order. We found that in the ordered state consists of a conventional two sublattice antiferromagnet with the spins oriented along [001] with very little fluctuations present close to $\mathrm{T_N}$.

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