

Anisotropic magneto-thermal transport in Co_2MnGa thin films

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The full Heusler compound Co_2MnGa belongs to the family of Weyl-II-semimetals. Large anomalous Nernst effect has been observed in Co_2MnGa and it was attributed to non-vanishing Berry curvature of the Weyl-points making the material a promising candidate to study exotic transport phenomena. In this work we systematically measure anisotropic magnetoresistance (AMR) and its thermoelectric counterpart anisotropic magnetothermopower (AMTP) in Co_2MnGa thin-films. The data is modeled using a Stoner-Wohlfarth formalism as well as a symmetry-based phenomenological model. Our findings show the presence of both crystalline and non-crystalline components in both magneto-transport phenomena. While the AMR is small in relative terms, the AMTP is large, which is discussed in the context of the Mott rule.

References:

[1] arXiv:2012.14229 [cond-mat.mtrl-sci]