



Contribution ID: 496

Type: **Invited Oral**

## **M1Or1B-02: [Invited] Spin chirality driven magneto-transport in $Mn_3Sn$ and $Co_3Sn_2S_2$ Kagome magnets**

*Monday 10 July 2023 10:00 (30 minutes)*

The electrically and thermally driven magneto-transport in two-dimensional frustrated spin systems reveals several fascinating features of correlated electron physics in magnetic Weyl semimetals. Here we present our measurements of anomalous Hall resistivity and Nernst voltage in Kagome spin lattices of  $Mn_3Sn$  and  $Co_3Sn_2S_2$  epitaxial films prepared by multi-target magnetron sputtering. While the electron transport data for  $Mn_3Sn$  films reveal distinct transitions through three different spin orders on cooling from ambient temperature, a layered ferromagnetic state emerges in  $Co_3Sn_2S_2$  in the vicinity of 150 K. The measured large zero-field Hall conductivity and Nernst effect in these compounds are finger prints of spin chirality driven transport. The details of these results along with the measurements of anisotropic magnetoresistance in these systems will be presented at the conference.

This research has been conducted at the United States Department of Defense Center of Excellence for Advanced Electro-photonics with 2D materials –Morgan State University, under the grant #W911NF2120213 and also funded by the AFOSR through grant #FA7550-22-1-0392.

**Author:** Prof. BUDHANI, Ramesh (Morgan State University)

**Presenter:** Prof. BUDHANI, Ramesh (Morgan State University)

**Session Classification:** M1Or1B: Special Session: Topological Materials for Electronics I