Canadian Association of Physicists

Association canadienne des physiciens et physiciennes

Contribution ID: **619** Type: **Invited Speaker / Conférencier(ère) invité(e)**

(I) Giant c-axis Nonlinear Anomalous Hall Effect

Tuesday 8 June 2021 12:00 (30 minutes)

We report the observation of a giant c-axis nonlinear anomalous Hall effect in the non-centrosymmetric Td phase of MoTe2 without intrinsic magnetic order. Here, application of an in-plane current generates a Hall field perpendicular to the layers. By measuring samples across different thicknesses and temperatures, we find that the nonlinear susceptibility obeys a universal scaling with sample conductivity that is indicative of extrinsic scattering mechanisms. Application of higher bias yields an extremely large anomalous Hall ratio and conductivity.

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Session Classification: TS-8 Magnetic North VII / Nord magnétique VII

Track Classification: Magnetic North/Magnétisme Nord