

Abstract Submitted  
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**Electron-**

**Magnon Scattering in Anomalous Hall Effect**<sup>1</sup> SHENGYUAN YANG, The University of Texas at Austin, HUI PAN, Beijing University of Aeronautics and Astronautics, WONG-KONG TSE, QIAN NIU, The University of Texas at Austin — We study the role played by electron-magnon scattering in the anomalous Hall effect. We find that it has important contributions distinct from other scattering processes like impurities scattering and phonon scattering. As a demonstration, we calculate the Hall conductivity for a two dimensional Dirac model. The result indicates that as system control parameter varies, the competition between magnon scattering and other types of scattering changes the Hall conductivity drastically. In particular, the side jump contribution could acquire a strong temperature dependence.

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