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Magnetoresistance Anisotropy in WTe_2 LAXMAN RAJU THOUTAM, Northern Illinois University, Argonne National Laboratory, YONGLEI WANG, Argonne National Laboratory, ZHILI XIAO, Northern Illinois University, Argonne National Laboratory, SAPTARSHI DAS, ADINA LUICAN MAYER, RALU DIVAN, Argonne National Laboratory, GEORGE W CRABTREE, Argonne National Laboratory, University of Illinois at Chicago, WAI KWONG KWOK, Argonne National Laboratory — We report the angle dependence of the magnetoresistance in WTe_2. Being a layered material, WTe_2 is considered to be electronically two-dimensional (2D). Our results demonstrate that it is in fact 3D with an anisotropy of effective mass as small as 2. We measured the magnetic field dependence of the sample resistance R(H) at various angles between the applied magnetic field with respect to the c-axis of the crystal and found that they can be scaled based on the mass anisotropy, which changes from ˜2 to ˜5 with decreasing temperature in the Fermi liquid state. We will also discuss the origin of the turn-on temperature behavior in this material.

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