

Abstract Submitted
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Magnetic Anisotropy of a 3-Dimensional Honeycomb Iridate Lattice KIMBERLY MODIC, Los Alamos Natl Lab, MPA-CMMS TEAM — We present magnetic anisotropy measurements of a 3-dimensional honeycomb iridate lattice. The large spin-orbit coupling and the edge-shared octahedra create the possibility for large spin-anisotropic Kitaev exchange. The structure preserves the connectivity of the honeycomb lattice indicating its potential as a spin-liquid candidate. A complete temperature and angular dependence of torque measurements provides evidence for highly spin-anisotropic exchange interactions. At high temperature, the geometry of the octahedral environment and the iridium g-factor anisotropy constrain the susceptibility. Upon lowering temperature, we unambiguously identify a reordering of the principle components of susceptibility. An order of magnitude increase in anisotropy with field orientation at low temperature highlights the strong orbital character of the coupling.

Kimberly Modic
Los Alamos Natl Lab

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