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Time-resolved optical study of magnetism in Sr2IrO4
DAVID HSIEH, DARIUS TORCHINSKY, FAHAD MAHMOOD, MIT, GANG CAO, University of Kentucky, NUH GEDIK, MIT — We report a time-resolved optical pump-probe study of the Jeff=1/2 Mott insulator Sr2IrO4. The temperature dependence of the electronic relaxation rate exhibits clear anomalies at magnetic ordering temperatures of 240K and 100K, which are consistent with the development of bulk decay channels via emission of magnetic excitations. We will then discuss time-resolved second harmonic generation studies and contrast the magnetic properties of the surface and the bulk.

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