Abstract Submitted
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Tunnelling into the twisted Mott insulator Sr2IrO4 with atomic resolution[1] ARMIN ANSARY, JOHN NICHOLS, Department of Physics and Astronomy, University of Kentucky, Lexington, Kentucky 40506-0055, NOAH BRAY-ALI, Joint Quantum Institute, University of Maryland, College Park, Maryland 20742-4111, GANG CAO, KWOK-WAI NG, Department of Physics and Astronomy, University of Kentucky, Lexington, Kentucky 40506-0055 — We studied the single-layered iridate Sr_2IrO_4 with a scanning tunneling microscope. The finite low temperature conductance enables the electronic structure of this antiferromagnetic Mott insulator to be measured by tunneling spectroscopy. We imaged the topography of freshly cleaved surfaces and measured differential tunneling conductance at cryogenic temperatures. We found the Mott gap in the tunneling density of states to be $2\Delta = 615$ meV. Within the Mott gap, additional shoulders are observed which are interpreted as inelastic loss features due to magnons.

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Armin Ansary
Department of Physics and Astronomy,
University of Kentucky, Lexington, Kentucky 40506-0055

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