## Abstract Submitted for the MAR17 Meeting of The American Physical Society

Manipulation of magnetic exchange in iridate heterostructures D. MEYERS, G. FABBRIS, WEIGUO YIN, Brookhaven National Laboratory, D. CASA, Argonne National Laboratory, YUE CAO, Brookhaven National Laboratory, LIN HAO, University of Tennessee, T. SCHMITT, Paul Scherrer Institut, JIAN LIU, University of Tennessee, M. P. M. DEAN, Brookhaven National Laboratory — Artificial layering of disparate materials into superlattices is an emerging method that promises unparalleled versatility in accessing ground states unavailable to bulk synthesis. Heterostructures composed of paramagnetic, metallic SrIrO<sub>3</sub> interspaced with band insulating SrTiO<sub>3</sub> were found to host a canted antiferromagnetic ground state, mirroring the Ruddlesen-Popper series iridates with enhanced tunability. We investigate the magnetic excitation spectrum of these artificial systems using resonant inelastic x-ray scattering and directly infer the interlayer and intralayer magnetic exchange interactions. Understanding how interfacial effects modify magnetic interactions is a vital prerequisite for efforts to controllably target different ground states within complex oxide-heterostructures.

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