

Abstract Submitted
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Magnetic Excitations of the Kondo Insulator SmB_6 ¹ WESLEY FUHRMAN, Johns Hopkins University, JONATHAN LEINER, GARRETT GRANROTH, MARK LUMSDEN, Oak Ridge National Lab, PAVEL ALEKSEEV, Kurchatov Institute, JEAN-MICHEL MIGNOT, Laboratoire Leon Brillouin, SEYED KOOHPAYEH, PATRICK COTTINGHAM, WILLIAM PHELAN, Johns Hopkins University, LESLIE SCHOOP, ROBERT CAVA, Princeton University, TYREL MCQUEEN, COLLIN BROHOLM, Johns Hopkins University — Research within the past year indicates the long-studied Kondo insulator SmB_6 may be a topological insulator, with an insulating bulk at low temperatures and topologically protected metallic surface states. Because electron-electron interactions give rise to the insulating state, there is intense interest in SmB_6 . Using time-of-flight inelastic neutron scattering, we have probed magnetic excitations over a wide range of energy and momentum transfer. Consistent with previous work there is a resonant mode near 14 meV and a broad spectrum of excitations centered near 30 meV. This data set provides a comprehensive map of the Q-dependence of the excitations throughout the Brillouin zone allowing for comparison to theoretical models describing the anomalous insulating state.

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