

Abstract Submitted  
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**Magnetic excitations and lattice distortions in highly-doped  $(\text{Sr}_{1-x}\text{La}_x)_3\text{Ir}_2\text{O}_7$**  TOM HOGAN, University of California Santa Barbara, MARY UPTON, Argonne National Laboratory, XIAOPING WANG, Oak Ridge National Laboratory, STEPHEN WILSON, University of California Santa Barbara —  $(\text{Sr}_{1-x}\text{La}_x)_3\text{Ir}_2\text{O}_7$  has been shown to undergo a first-order phase transition from a localized antiferromagnetic insulating state to a correlated metal. We discuss the further characterization of these correlations by examining the excitation spectra of a highly-doped sample. These reveal evidence of a dispersive feature associated with an over-damped magnon mode, similar to the behavior of the undoped parent compound, as well as a higher energy excitation. The nature of the lattice distortion brought on by La-doping will also be discussed.

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