

Abstract Submitted
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Evidence for a hidden-order pseudogap in URu₂Si₂¹ J.T. HARALDSEN, Los Alamos National Laboratory, Y. DUBI, Tel Aviv University, N.J. CURRO, University of California - Davis, A.V. BALATSKY, Los Alamos National Laboratory — Through an analysis and modeling of data from various experimental techniques, we present evidence for the presence of a hidden order pseudogap in URu₂Si₂ in the temperature range between 25 K and 17.5 K. Considering fluctuations of the hidden order energy gap at the transition as the origin of the pseudogap, we evaluate the effects that gap fluctuations would produce on observables like tunneling conductance, neutron scattering, and nuclear resonance, and relate them to the experimental findings. We show that the transition into hidden order phase is likely second order and is preceded by the onset of non-coherent hidden order fluctuations.

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