

Abstract Submitted
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Non-local Magnetic Field-tuned Quantum Criticality in Cubic $\text{CeIn}_{3-x}\text{Sn}_x$ ($x = 0.25$) NEIL HARRISON, ALEJANDRO SILHANEK, MARCELO JAIME, VICTOR FANELLI, CRISTIAN BATISTA, Los Alamos National Laboratory, TAKAO EBIHARA, KOJI TEZUKA, Shizuoka University — We show that antiferromagnetism in lightly Sn-doped CeIn_3 terminates at a critical field $\mu_0 H_c = 38 \pm 1$ T. Electrical transport, specific heat and magnetization measurements reveal that m^* does not diverge, suggesting that cubic CeIn_3 is representative of a critical spin-density wave (SDW) scenario, unlike the local quantum critical points observed in lower-symmetry systems such as $\text{CeCu}_{6-x}\text{Au}_x$ and $\text{YbRh}_2\text{Si}_{2-x}\text{Ge}_x$. The existence of a maximum in m^*st at a lower field $\mu_0 H_x = 30 \pm 1$ T may be interpreted as a field-induced crossover from local moment to SDW behavior as the magnitude of the antiferromagnetic order parameter falls below the Fermi bandwidth.

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