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Doping - induced Quantum Phase Transition in $Sc_{3.1}In$[1] ETERI SVANIDZE, EMILIA MOROSAN, Department of Physics and Astronomy, Rice University, Houston, TX 77005 — Sc_3In is a known itinerant ferromagnet with a reported $T_c \approx 6$ K. In this talk we will show that Lu doping induces a quantum phase transition in this compound. Temperature and field - dependent magnetization measurements on $(Sc_{1-x}Lu_x)_{3.1}In$ polycrystalline samples were performed, where $0 \leq x \leq 0.08$. The $3.1:1$ stoichiometry was chosen because it showed the highest $T_c \approx 10$ K for $x = 0$ when Arrott plots were employed to determine the Curie temperature. In this study we use modified Arrott plots M^2 vs. $(H/M)^{1/\alpha}$. For $\alpha = 1.5$, the corresponding isotherms were linear over larger field ranges, and, for the critical composition $x_c \approx 0.02$, the isotherm was linear down to (M,H) = (0,0). The Curie temperature determined using this method was close to 6 K.

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Eteri Svanidze
Department of Physics and Astronomy, Rice University, Houston, TX 77005

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