Magnetic enhancement and cluster-glass behavior in (Sc$_{1-x}$Er$_x$)$_3$In$^1$ ETERI SVANIDZE, EMILIA MOROSAN, Rice University, MOROSAN QUANTUM MATERIALS LAB TEAM — Sc$_3$In is a weak itinerant ferromagnet with no magnetic constituents. In this talk, we will present DC and AC magnetization data on Sc$_3$In doped with Er$^{3+}$ local moment ions. As $x$ increases in (Sc$_{1-x}$Er$_x$)$_3$In, the Weiss temperature nearly triples up to $x \leq 0.1$. The effective moment per formula unit is larger than the simple sum of the itinerant moment in pure Sc$_3$In and the Er$^{3+}$ local moment. Moreover, Er doping of as little as $x = 0.02$ induces a cluster-glass state. The glassy behavior persists up to $x = 0.1$, and a structural transition likely occurs for higher doping levels.

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