

**FROM ITINERANT FERROMAGNETISM TO INSULATING ANTIFERROMAGNETISM: A
MAGNETIC AND TRANSPORT STUDY OF SINGLE CRYSTAL $\text{SrRu}_{1-x}\text{Mn}_x\text{O}_3$ ($0 \leq x < 0.60$)**

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We report results of a magnetic and transport study of $\text{SrRu}_{1-x}\text{Mn}_x\text{O}_3$ ($0 \leq x < 0.60$), i.e., Mn doped SrRuO_3 . The Mn doping drives the system from the itinerant ferromagnetic state ($T_C=165$ K for $x=0$) through a quantum critical point at $x_c=0.39$ to an insulating antiferromagnetic state. The onset of antiferromagnetism is abrupt with a Néel temperature increasing from 205 K for $x=0.44$ to 250 K for $x=0.59$. Accompanying this quantum phase transition is a drastic change in resistivity by as much as 8 orders of magnitude as a function of x at low temperatures. The critical composition $x_c=0.39$ sharply separates the two distinct ground states, namely the ferromagnetic metal from the antiferromagnetic insulator.