

Abstract Submitted
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Suppression of An Antiferromagnetic Insulating Phase in $\text{Sr}_3(\text{Ru}_{1-x}\text{Mn}_x)_2\text{O}_7$ by Magnetic Field¹ BIAO HU, E.W. PLUMMER, R. JIN, Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA 70803 — Double-layered $\text{Sr}_3\text{Ru}_2\text{O}_7$ is a paramagnetic metal. The partial substitution of Mn for Ru results in metal-insulator transition at T_{MIT} and antiferromagnetic ordering at T_M in $\text{Sr}_3(\text{Ru}_{1-x}\text{Mn}_x)_2\text{O}_7$. Interestingly, both T_{MIT} and T_M can be easily suppressed by the application of magnetic field, especially for low-doping compounds ($x < 0.1$). This behavior can be explained as Mn-doping-induced antiferromagnetic-insulating domains below T_{MIT} . The application of magnetic field suppresses the antiferromagnetic coupling, thus converting the insulating domains back to metallic.

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