

Abstract Submitted
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Element-resolved electronic and magnetic properties of $\text{Sr}_3(\text{Ru}_{1-x}\text{Mn}_x)_2\text{O}_7$ V.B. NASCIMENTO, Louisiana State University, Baton Rouge LA, J.W. FREELAND, APS - Argonne National Laboratory, Argonne IL, BIAO HU, R. JIN, E.W. PLUMMER, Louisiana State University, Baton Rouge LA — Bulk $\text{Sr}_3\text{Ru}_2\text{O}_7$ is a metal with short-range antiferromagnetic correlation developed at low temperatures. In the $\text{Sr}_3(\text{Ru}_{1-x}\text{Mn}_x)_2\text{O}_7$ series, the partial substitution of Ru by Mn changes both electronic and magnetic correlations driven by the modification of lattice degree of freedom. We have employed polarized x-rays to perform an element-resolved study of electronic and magnetic properties of this system with $0 < x \leq 0.5$. Our results indicate that at low doping Mn goes in as an electron acceptor (i.e. Mn 3+) which effectively dopes holes into the Ru system in a systematic way with increasing x. Using x-ray magnetic circular dichroism we have extracted the Mn and Ru contributions to the total magnetic moment, which will be connected to measurements of the total moment.

Von Braun Nascimento
Louisiana State University

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