

Abstract Submitted
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Magnetism and Magnetic Order in $\text{La}_2\text{CuRuO}_6$ MATTHEW SMYLIE, XU LUO, ULRICH WELP, WAI-KWONG KWOK, Materials Science Division, Argonne National Laboratory, HOWARD BLACKSTEAD, BRENDAN BENAPFL, Dept. of Physics, University of Notre Dame, PAUL MCGINN, Dept. of Chemical Engineering, University of Notre Dame — Long-range magnetic order has been observed in the insulating double perovskite compound $\text{La}_2\text{CuRuO}_6$. This monoclinic compound shows a rock salt like ordering of the B sites in the double perovskite $\text{A}_2\text{BB}'\text{O}_6$ lattice. We show that elevated processing temperatures improve the magnetic properties of the material, possibly by reducing the number of antisite defects between the Cu and Ru ions. In polycrystalline samples, microwave resonance and dc SQUID susceptibility measurements indicate a ferrimagnetic or antiferromagnetic ground state at low temperatures ($T < 19$ K). Specific heat measurements also show a transition consistent with the magnetization data.

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