

Abstract Submitted  
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**Thermal Expansion, Heat Capacity and Magnetization Measurements of  $\text{La}_{1.2}\text{Sr}_{1.8}\text{Mn}_2\text{O}_7$** <sup>1</sup> RICHARD K. BOLLINGER, J. J. NEUMEIER, Montana State University, H. ZHENG, J. F. MITCHELL, Materials Science Division, Argonne National Laboratory —  $\text{La}_{1.2}\text{Sr}_{1.8}\text{Mn}_2\text{O}_7$  is a bi-layered ferromagnet of perovskite structure with two dimensional magnetic and electrical properties. In this presentation, we will show measurements of the specific heat, magnetization, and thermal expansion for single crystalline  $\text{La}_{1.2}\text{Sr}_{1.8}\text{Mn}_2\text{O}_7$  in the temperature range  $300 \text{ K} < T < 5 \text{ K}$ . The thermal expansion of this tetragonal crystal along the  $a$  and  $c$  directions will be presented, the anisotropy will be discussed, and the critical behavior near the magnetic transition will be evaluated.

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