

Abstract Submitted  
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**Critical Exponents and Pressure Dependence of  $T_c$  of  $\text{La}(\text{Ca})\text{MnO}_3$** <sup>1</sup> JOSE A. SOUZA, B. D. WHITE, J. J. NEUMEIER, Montana State University, Y.-K. YU, National Center for Biotechnology Information, C. A. M. DOS SANTOS, Montana State University and Escola de Engenharia de Lorena — Measurements of heat capacity and thermal expansion for  $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$  with  $x = 0, 0.20, 0.25, 0.30, 0.35, 0.40, 0.45,$  and 1 are reported. Using a model proposed previously (Souza et al. Phys. Rev. Lett. 94, 207209 (2005)), which utilizes both heat capacity ( $C_P$ ) and thermal expansion coefficient ( $\mu$ ) data, the pressure dependencies of  $T_c$ ,  $dT_c/dP$ , are obtained for all samples.  $dT_c/dP$  decreases as the Ca doping increases. Critical behavior using both  $C_P$  and  $\mu$  is evaluated for the samples. The critical exponent  $\alpha$  increases from 0.13, for  $\text{LaMnO}_3$  to 0.97 for  $x = 0.30$ . As Ca content is increased further,  $\alpha$  drops reaching 0.11, for  $\text{CaMnO}_3$ .

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