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Crystal Growth of Perovskite Mn-Oxides $CaMnO_3$ and $La_{0.7}Ca_{0.3}MnO_3$ Using the Floating-Zone Method[1] BENJAMIN WHITE, J.A. SOUZA, Montana State University, T. HUYNH, Argonne National Laboratory, C.A.M. DOS SANTOS, Escola de Engenharia de Lorena - USP, K.J. MCCLELLAN, Los Alamos National Laboratory, J.J. NEUMEIER, Montana State University — High quality, centimeter-sized single crystals of $CaMnO_3$ and $La_{0.7}Ca_{0.3}MnO_3$ have proven difficult to grow. Crystals of this size could be used to conduct neutron diffraction and other measurements. The goal of this study was to investigate the growth process using the optical floating- zone method in an NEC model SC1-MDH optical furnace. Growth parameters which were varied include the growth rate, rotation rate, and starting composition of the feed and seed rods. Crystal quality was determined through x-ray analysis, optical microscopy, SEM, iodometric titration, and magnetic measurements. These measurements and other general observations will be presented.

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