

Abstract Submitted
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A resonant ultrasound spectroscopy study of the phase transitions in $\text{Na}_{0.75}\text{CoO}_2$ VEERLE KEPPENS, RAPHAËL P. HERMANN, ZHIYING ZHANG, KATHLEEN AFFHOLTER, Materials Science and Engineering, The University of Tennessee, USA, IVAN SERGIENKO, Department of Physics, The University of Tennessee, USA, and Condensed Matter Sciences Division, Oak Ridge National Laboratory, USA, RONGYING JIN, BRIAN C. SALES, DAVID G. MANDRUS, Condensed Matter Sciences Division, Oak Ridge National Laboratory, USA — The layered transition metal oxides Na_xCoO_2 have attracted much interest in the past few years. Crystals with the $x \simeq 0.75$ composition undergo an order-disorder transition near 340 K, a spin-density-wave transition near 22 K and other subtle transitions at intermediate temperatures. These phase transitions, likely related to a rearrangement of the Na atoms among the available sites, have been mapped out using resonant ultrasound spectroscopy. The results are modeled within the Landau theory for second order phase transitions. [Oak Ridge National Laboratory is managed by UT-Battelle, LLC, for the U.S. Dept. of Energy under contract DE-AC05-00OR22725]

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