

Abstract Submitted  
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**Structure and Physical Properties of Hydrated Sodium Cobalt**

GORAN GASPAROVIC, MIT, R.A. OTT, B. KHAYKOVICH, F.C. CHOU, E.T. ABEL, MIT, J.W. LYNN, NIST, S.E. NAGLER, ORNL, J.P. HILL, K.J. THOMAS, BNL, Y.S. LEE, MIT — Using an electrochemical de-intercalation technique, we have produced single crystal samples of hydrated sodium cobalt oxide ( $\text{Na}_{0.3}\text{CoO}_2 \cdot 1.3\text{H}_2\text{O}$ ). Thermodynamic and transport measurements reveal the low temperature properties of these samples to be consistent with those of a Fermi liquid with a strong mass enhancement. We have used neutron scattering and x-ray scattering to study the structure and excitations of this compound. We find that there are multiple stable structures which differ in the stacking arrangement of the planes. We discuss the bulk physical properties of the various compositions measured.

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