

Abstract Submitted  
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**Probing defect ordering in the Curie-Weiss metallic phase of  $\text{Na}_x\text{CoO}_2$** <sup>1</sup> BEN-LI YOUNG, P.-Y. CHU, J.Y. JUANG, Dept. of Electrophysics, Natl Chiao Tung Univ., G.J. SHU, F.C. CHOU, Center for Condensed Matter Sciences, National Taiwan Univ. — Single crystals of  $\text{Na}_{2/3}\text{CoO}_2$ ,  $\text{Na}_{2/3}\text{CoO}_{1.98}$ , and  $\text{Na}_{0.71}\text{CoO}_2$ , which are metallic Curie-Weiss paramagnets, have been investigated by nuclear magnetic resonance (NMR) techniques, in order to clarify the Na atomic ordering among these samples. By analyzing the  $^{23}\text{Na}$  and  $^{59}\text{Co}$  NMR spectra, we confirm that the Na vacancies arrange orderly in  $\text{Na}_{2/3}\text{CoO}_{1.98}$  and  $\text{Na}_{0.71}\text{CoO}_2$ , so that a superlattice structure is formed due to such Na ordering. In addition, the oxygen vacancies in  $\text{Na}_{2/3}\text{CoO}_{1.98}$  can be located by the NMR spectra. As for the  $\text{Na}_{2/3}\text{CoO}_2$  single crystal, a long-range Na order is not observed.

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