

Abstract Submitted
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High Pressure Structure of $\text{Na}_{0.75}\text{CoO}_2$ RAVHI KUMAR, ANDREW CORNELIUS, MALCOLM NICOL, University of Nevada, Las Vegas, D PRABHAKARAN, ANDREW BOOTHROYD, University of Oxford, UK, MADDURY SOMAYAZULU — High pressure x-ray diffraction experiments were performed on $\text{Na}_{0.75}\text{CoO}_2$, using synchrotron x-rays and diamond anvil cell up to 25 GPa, at ambient and cryogenic temperatures down to 10 K. The hexagonal structure of this compound is found to be stable at both conditions, and no structural changes were found around the unconventional magnetic state reported at 22 K. The bulk modulus obtained at ambient temperature, by fitting the pressure volume (PV) data shows, the compound is less compressible than its hydrated analogues. A rapid decrease observed in the c/a ratio under pressure, at ambient and low temperatures, indicates the presence of strong lattice anisotropy in this system similar to the high T_c cuprates.

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