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High Pressure Structural and Electrical Transport Properties of the $\text{Ca}_3\text{Co}_4\text{O}_9$ System T. WU, T.A. TYSON, Z. CHEN, Department of Physics, New Jersey Institute of Technology, Q. JIE, Q. LI, Condensed Matter Physics and Materials Science Department, Brookhaven National Laboratory, J.J. TU, Department of Physics, The City College of New York — High pressure and temperature dependent resistivity measurements were conducted on the $\text{Ca}_3\text{Co}_4\text{O}_9$ system to understand the influence of internal pressure by doping on the properties of these materials. To directly probe the effect of pressure on the structure, x-ray diffraction measurements under pressure were also conducted with diamond anvil cells at ambient temperature. The results are compared with ambient pressure chemically materials. The influence of the atomic structure on the thermoelectric properties will be discussed.

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