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High Pressure Neutron Diffraction Study on a Self-doped CMR Manganite[1] PENG GAO, TREVOR A. TYSON, ZHIQIANG CHEN, Department of Physics, New Jersey Institute of Technology, CHRIS STOCK, MATTHEW G. TUCKER, ISIS Facility, Rutherford Appleton Laboratory, Chilton, Didcot, Oxon OX11 0QX, UK — High-pressure neutron diffraction measurements were conducted on the self-doped CMR material $La_{0.85}MnO_{3-\sigma}$ up to $\sim$ 7 GPa above and below the magnetic ordering temperatures. The diffraction data show no abrupt structure change (space group) in the whole pressure and temperature range studied. The detailed atomic structural changes are examined. In addition the magnetic structure as a function of pressure and temperature was explored at high and low pressures. Peaks that could be attributed to magnetic scattering appear at $\sim$230K under $\sim$ 0.7 GPa and persist at high pressure ($\sim$7GPa). The pressure dependent distortion of the MnO6 polyhedra is discussed.

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