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**Effects of $^{18}O/^{16}O$ Isotopic substitution on the specific heat of Single Crystalline $Nd_{0.5}Sr_{0.5}MnO_3$**[1] CARLOS SANCHEZ, VICTOR AGUILAR, OSCAR BERNAL, GUOMENG ZHAO, Cal State Univ- Los Angeles — Substantial studies of magnetic susceptibility and specific heat on $Nd_{0.5}Sr_{0.5}MnO_3$ have demonstrated the existence of ferromagnetic (FM), antiferromagnetic (AFM) and charge ordering transitions (CO). In this work, effects of oxygen isotopic substitution on the specific heat of single crystalline $Nd_{0.5}Sr_{0.5}MnO_3$ were studied on two samples, each containing $^{16}O$ or high concentration of $^{18}O$. Specific heat was measured for each sample from 3K to 350 K in zero and 50 kOe applied magnetic fields using a Quantum Design Physical Property Measurement System (PPMS) with Specific Heat option. Below 30 K, a Schottky-like anomaly was found for both samples, which seemed to be unaffected by isotope substitution. The FM, AFM and CO transitions were present in both samples, and the CO temperature ($T_{co}$) seems to depend strongly on the oxygen isotope mass in both zero and 50 kOe fields, which seems to agree with previous magnetization measurement in powder samples.

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