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Two magnetically distinct environments in Cu-O planes in an underdoped High-Tc cuprate: $\text{La}(2-x)\text{Sr}(x)\text{CuO}(4)$ seen via ^{17}O NMR
ROBERT SMITH, PHILIP KUHNS, ARNEIL REYES, GREG BOEBINGER, NHMFL/FSU, TAKASHI IMAI, McMaster University, K. HIROTA, University of Tokyo — Using high magnetic fields (30T) we investigate the normal state of the underdoped superconductor $\text{La}(1.885)\text{Sr}(0.115)\text{CuO}(4)$ using ^{17}O NMR. The high field ^{17}O NMR spectrum shows evidence for two distinct planar oxygen signals, $^{17}\text{O}(\text{p1})$ and $^{17}\text{O}(\text{p2})$. The Knight Shift of $^{17}\text{O}(\text{p1})$ drops linearly with decreasing temperature to zero near 60K, twice the zero field T_C . $^{17}\text{O}(\text{p2})$ Knight Shift drops non-linearly to zero below 40K. The $^{17}\text{O}(\text{p2})$ line broadens with decreasing temperature while $^{17}\text{O}(\text{p1})$ slightly narrows. Comparing the Knight Shift and linewidth of the two lines suggests very different magnetic environments.

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