

Abstract Submitted
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^{17}O NMR Study of Under-doped Single Crystals of the High Temperature Superconducting Compound Hg1201 W.P. HALPERIN, JEONGSEOP A. LEE, YIZHOU XIN, Northwestern University, A.M. MOUNCE, Los Alamos National Laboratory, A.P. REYES, P.L. KUHNS, National High Magnetic Field Laboratory — We present measurements of ^{17}O high field NMR on oxygen isotope exchanged under-doped single crystals of the single layer superconductor,¹ $\text{HgBa}_2\text{CuO}_{4+\delta}$, a compound having a known tetragonal lattice. Our ^{17}O data for two under-doped samples (T_c of 87 K and 79 K) indicates that there are two inequivalent oxygen planar sites based on measurements of upper and lower quadrupolar satellites. Spectra were taken with $4 \text{ K} < T < 400 \text{ K}$ and $6 \text{ T} < H < 30 \text{ T}$ with a goniometer to precisely orient crystals relative to the magnetic field. We found an asymmetry in the line shape between the upper and lower satellites that cannot be accounted for by a model with a single planar oxygen site. Comparison will be made to earlier work² on under-doped $\text{YBa}_2\text{Cu}_3\text{O}_{7-y}$. [1] A.M. Mounce, *et al.*, Phys. Rev. Lett. **111**, 187003 (2013). [2] T. Wu *et al.* Nature Comm. **4**, 2113 (2013).

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