Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

^{77}Se NMR investigation of the paramagnetic metal phase of λ-(BETS)$_2$FeCl$_4$ GUOQING WU, W.G. CLARK, S.E. BROWN, UCLA Physics and Astronomy, J.S. BROOKS, NHMFL Tallahassee, A. KOBAYASHI, Res Ctr. Spectrochem., Univ. of Tokyo, Japan, H. KOBAYASHI, Inst. Mol. Science, Okazaki, Japan — We report ^{77}Se NMR measurements of the spectrum and the spin-lattice relaxation rate ($1/T_1$) in a 7 μg single crystal of λ(BETS)$_2$FeCl$_4$ over the temperature (T) range 2.5-10 K in an applied field of 10.9 T parallel to the a-axis (paramagnetic metal phase). A behavior close to $1/T_1T$ = constant is observed. It indicates that for these conditions, $1/T_1$ is dominated by the hyperfine interaction between the ^{77}Se spins and the conduction electrons, in contrast to $1/T_1$ for the protons, which is driven by the magnetic fluctuations of the Fe^{3+} spins [W.G. Clark et al., Appl. Mag. Res. **27**, 279 (2004)]. From these proton measurements, we estimate that the contribution of the Fe^{3+} fluctuations to $1/T_1$ of ^{77}Se is negligible. Work at UCLA was supported by NSF Grants DMR-0334869 (WGC) and DMR-0520552 (SEB).

Guoqing Wu
UCLA Physics and Astronomy

Date submitted: 06 Dec 2006 Electronic form version 1.4