

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Measurements of the effect of charge density wave fluctuations on the ^{87}Rb spin echo decay rate in $\text{Rb}_{0.30}\text{MoO}_3$. W.G. CLARK, GUOQING WU, S.E. BROWN, UCLA — Measurements and interpretation of the spin echo decay rate ($1/T_2$) for the ^{87}Rb quadrupolar split satellite lines in the charge density wave (CDW) system $\text{Rb}_{0.30}\text{MoO}_3$ (blue bronze) are reported over the temperature (T) range 80 K to 250 K at several alignments of the magnetic field ($\mathbf{B} = 9.00$ T). In contrast to the central transition, where the contribution of CDW fluctuations to $1/T_2$ is very small, they provide a large contribution to $1/T_2$ for the satellite lines below the CDW transition at $T_{CDW} \approx 180$ K. This sensitivity to CDW fluctuations shows that $1/T_2$ of the satellite lines should be a much more sensitive probe of both electric field driven and thermal motions of the CDW than the effects of density wave motion on the central transition, which has been used for prior work on this topic. A major goal of our future work is to exploit this property to obtain detailed measurements of electric field driven and thermal motion of the CDW in this material over a wide temperature range. This work has been supported by NSF Grants DMR-0334869 (WGC) and 0520552 (SEB).

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Date submitted: 27 Nov 2007

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