

Abstract Submitted
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^{93}Nb NMR investigation of vortex- glass transition in layered NbSe_2 ¹ DOUGLAS WILSON, GARIMA SARASWAT, National High Magnetic Field Laboratory, PARASHARAM SHIRAGE, Indian Institute of Technology, PHILIP KUHN, MICHAEL J. R. HOCH, ARNEIL REYES, National High Magnetic Field Laboratory — We report a detailed low temperature investigation of vortex glass transition in layered superconducting compound NbSe_2 using ^{93}Nb NMR at fields below H_{c2} . Preliminary measurements show that spin-lattice relaxation rate $1/T_1$ demonstrates a classic Korringa behavior $1/T_1 \sim T$ above the superconducting transition T_c , consistent with previous measurements on this compound. However, for field H perpendicular to the layers, we observed that $1/T_1$ exhibits an anomalous plateau between T_c ($H=0$) and $T_c(H)$ and a suppression of the superconducting enhancement expected below T_c . Instead, a power law behavior, $1/T_1 \sim T^{1.2}$ below T_c down to 360mK was observed which suggests a strong anisotropy in the low energy excitations. However, the possibility of enhancement in $1/T_1$ due to vortex fluctuations which competes with electronic mechanisms cannot be excluded. The implications of these results with regards to vortex-glass transition will be discussed.

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