β-NMR investigation of the vortex lattice near the interface of silver and $Pr_{1.85}Ce_{0.15}CuO_{4-\delta}$ thin films

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A low energy beam of highly spin polarized $^8Li^+$ was used to investigate the magnetic field distribution in a 40 nm thin film of silver evaporated on a 300nm film of electron-doped superconductor $Pr_{1.85}Ce_{0.15}CuO_{4-\delta}$. The lineshapes in the silver broaden below the transition temperature T_C due to vortices emerging from the superconductor. The measured lineshapes are symmetric and show unexpected broadening at higher fields inconsistent with an ordered vortex lattice. An example of the broadening versus temperature is shown below.

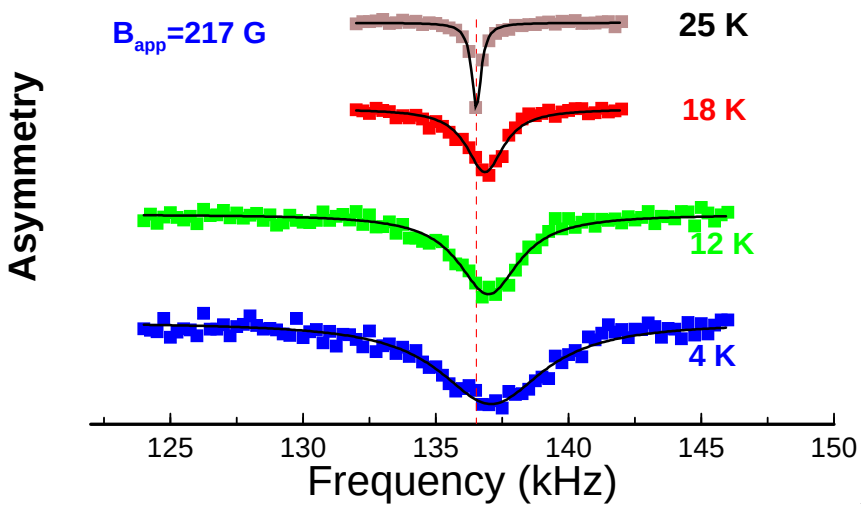

Fig. 1: Asymmetry in $Ag/Pr_{1.85}Ce_{0.15}CuO_{4-\delta}$ (T_C=22.5 K).