

Abstract Submitted  
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**Theory of diamagnetic response in layered superconductor above “ $T_c$ ”** PEIJEN LIN, Electrophysics department, National Chiao Tung University, DINGPING LI, Beijing University, BARUCH ROSENSTEIN, Electrophysics department, National Chiao Tung University — Recent work by Wang et al. (Phys. Rev. Lett. 95, 247002) on field induced diamagnetic properties above  $T_c$  attracted a lot of attention from both theoretical and experimental physicist. In this talk, we will show that the phenomenon can be understood using conventional Ginsburg Landau theory for anisotropic materials. Above  $T_c$ , where the thermal fluctuations are strong, the effective description based on GL becomes non trivial due to the important contribution of higher landau levels. In previous works, some progress was achieved when certain additional assumptions (such as Lowest Landau Level approximation ) were made. However, the validity of these assumptions is under debate. In our study of this system, we include the contribution of higher landau levels with nonperturbative method. Comparison will be made with Varlamov-Larkin results.

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