

Abstract Submitted
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Pseudogap: superconducting fluctuations from quantum to thermal in high Tc copper oxide superconductor¹ H. XIAO, Institute of Physics, T. HU, Shanghai Institute of Microsystem and Information Technology, W. ZHANG, Y.M. DAI, H.Q. LUO, Institute of Physics, D. JIANG, W. PENG, Shanghai Institute of Microsystem and Information Technology, C.C. ALMASAN, Kent State University, H.H. WEN, Nanjing University, X.M. XIE, M.H. JIANG, Shanghai Institute of Microsystem and Information Technology, X.G. QIU, Institute of Physics — We performed angular dependent torque measurement results on a series of $\text{Bi}_2\text{Sr}_{2-x}\text{La}_x\text{CuO}_{6+\delta}$ (La doped Bi2201) single crystals. Our measurement results show that the diamagnetic signal above superconducting transition temperature T_c is a result of combination of thermal and quantum fluctuations. The pseudogap line, which could be a crossover line from thermal to quantum fluctuations, follows a universal equation, applied also in CeCoIn_5 and $\text{Pr}_{2-x}\text{Ce}_x\text{CuO}_{4-y}$. The quantum fluctuations in Bi2201 could be associated with two quantum critical points located in underdoped and overdoped region.

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