Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Theory of Low-Temperature Hall Effect in Electron-Doped Cuprates[1] JIE LIN, Columbia University, ANDREW MILLIS, Columbia University — A mean field calculation of the $T \rightarrow 0$ limit of the Hall conductance of electron-doped cuprates such as $Pr_{2-x}Ce_xCuO_{4+\delta}$ is presented. The data are found to be qualitatively consistent with the reconstruction of the Fermi surface expected upon density wave ordering. The magnitude of the density wave gap is found to be large. The Hall resistance exhibits a nonanalyticity at the quantum critical point for density wave ordering, but the amplitude of the anomaly is found to be unobservably small. The quantum critical contribution to $R_H(B)$ is determined. Quantitative discrepancies between calculation and data remain, suggesting that the experimental doping is not identical to the Ce concentration x.

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Date submitted: 29 Nov 2005   Electronic form version 1.4