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Resistivity and Hall effect measurements in $Pr_{2-x}Ce_xCuO_{4-y}$ up to 60T[1] R.L. GREENE, PENGCHENG LI, Center for Superconductivity Research and Department of Physics, University of Maryland, College Park, MD, 20742, F. BALAKIREV, National High Magnetic Field Lab in Los Alamos National Lab, Los Alamos, NM, 87545 — We report resistivity and Hall effect measurements in the electron-doped cuprate system $Pr_{2-x}Ce_xCuO_{4-y}$ in magnetic field up to 60T. We found negative magnetoresistance (MR) in the underdoped region for all magnetic field values, similar to the low field data reported previously[a]. The MR becomes positive at high field in the optimal doped (x=0.15) sample at low temperature. Most surprisingly, we observed a substantial magnetic field dependence of the Hall coefficient at high field (above ∼40T) in optimal doped and overdoped samples (from x=0.15 to 0.19) in a certain temperature range. A spin density wave induced Fermi surface reconstruction model can be used to explain this phenomenon. We also report for the first time the parallel upper critical field (H//ab plane) for $Pr_{2-x}Ce_xCuO_{4-y}$. (a. Y. Dagan et al., Physical Review Letters 94 (5) 11 2005)

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