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Multiple sign reversal of the Hall effect in electron-doped superconductor $\text{Pr}_{0.9}\text{LaCe}_{0.1}\text{CuO}_{4\pm\delta}$ thin films BEIYI ZHU, Institute of Physics, Chinese Academy of Sciences — We have investigated the temperature and field dependence of the Hall resistivity of the electron-doped $\text{Pr}_{0.9}\text{LaCe}_{0.1}\text{CuO}_{4\pm\delta}$ (PLCCO) superconducting thin films ($T_{c0} = 22$ K). In the low magnetic field region ($0.03 \sim 0.1$ T), a concrete triple sign reversal of the Hall resistivity ρ_{xy} has been observed in the $\rho_{xy}(T)$ curve. With the increase of the magnetic field, the Hall resistivity $\rho_{xy}(T)$ suffers triple, double, single sign reversal transitions and it will be completely disappear around 4.5 T. We contribute the triple sign reversal to the competition between the hole and the electron carriers in our electron-doped samples and a fourth sign reversal may be expected in the regime of the two-band system.

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