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Linear Magnetoresistance of $Ca_{10}Pt_nAs_8(Fe_2As_2)_5$ ($n = 3$ and 4) JIAYUN PAN, AMAR KARKI, RONGYING JIN, Department of Physics and Astronomy, Louisiana State University — We report the normal-state magnetoresistance (MR) of superconducting $Ca_{10}Pt_nAs_8(Fe_2As_2)_5$ ($n = 3$ and 4) as a function of temperature ($50 - 300\,K$) and magnetic field ($0 - 14$ Tesla). It is found that MR is positive in a wide temperature range in both transverse ($H \perp I$) and longitudinal ($H \parallel I$) cases. At a fixed temperature and field, we observe MR ($H \perp I$) > MR ($H \parallel I$), suggesting spin-orbital coupling in addition to charge-spin interaction. Remarkably, MR shows linear field dependence between 0 and 14 Tesla in a wide temperature range for both $n = 3$ and 4. The implication of such unusual field dependence of MR will be discussed.

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