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Unusual Temperature and Field Dependence of Transport Properties Ba(Fe_{1-x}Co_x)₂As₂ YIMIN XIONG, JIANNENG LI, RONGYING JIN, Department of Physics and Astronomy, Louisiana State University — The in-plane transport properties of Ba(Fe_{1-x}Co_x)₂As₂ single crystals with $x = 0.02 \sim 0.28$ was measured as a function of temperature (2 ~ 300 K) and magnetic field (up to 14 Tesla). A Cobalt doping composition-temperature (x-T) phase diagram was plotted and shows a non-Fermi liquid (NFL) transport behavior around the optimal doping level. The Hall effect and magneto-resistance results also show an anomaly and a change of field dependence around the optimal doping. The underlying physics of such unusual temperature and field dependence of transport properties *ab* plane will be discussed.

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