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Negative longitudinal magnetoresistance in ErSb NIRMAL GHIMIRE, Argonne Natl Lab, JUNFENG HE, Stanford University, HONG ZHENG, STEPHAN ROSENKRANZ, Argonne Natl Lab, Z.-X. SHEN, Stanford University, JOHN MITCHELL, Argonne Natl Lab — Recently, NaCl-type rare earth monopnictides have attracted much attention due to the indication of topological band properties both in theoretical calculations and spectroscopic and transport property measurements. Non-magnetic TX (T = Y, La) and X = (Sb, Bi) show extremely large transverse magnetoresistance, and Shubnikov-de Haas oscillations in the magnetotransport measurements. There are claims of surface state in LaBi and LaSb, but isostructural YSb with similar transport properties as those of the former two lacks a spectroscopic evidence of a non-trivial surface state. The magnetic counterparts CeSb, CeBi and NdSb show Dirac or Dirac-like dispersion in ARPES measurements. These spectroscopic features in these compounds are robust against the magnetic ordering. In order to further understand the interplay between magnetism and the electronic character, we have studied another rare earth antimonide ErSb that shows an antiferromagnetic ordering below 3.7 K. We will present the magnetic, transport and electronic properties of this compound and discuss on the longitudinal magnetoresistance, which is positive in the antiferromagnetic state and becomes negative above the T_N up to more than a decade in temperature.

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