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Large magnetoresistance and electronic anisotropy in $NbAs_2$[1]
BING SHEN, SHAN JIANG, NI NI, UCLA — Recently, extremely large magnetoresistance (XMR) was discovered in semimetal such as WTe_2 LaSb and so on, triggering extensive reseach on these materials and the origin of XMR. In this talk, we will report the transport properties of non-magnetic layered pnictide material $NbAs_2$. Large transverse magnetoresistance is observed. At 10 K, the magnetoresistance is around 13000 % in the field of 9 T and shows no saturation behavior. The temperature dependent resistivity at various fields exhibits metal-to-semiconductor transition behavior around 100 K, which is coincident with the sudden increase of the Hall signal in the same temperature region. The angle dependent magnetoresistance at various temperatures follows the 3D scaling behavior with the mass anisotropy around 1.3-1.4, indicative of its 3D electron structure. Quantum oscillation data reveal the existence of at least three Fermi pockets in this material.

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