

## Observation of current-induced spin polarization with different polarities in BiSbTeSe<sub>2</sub> topological insulators

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Topological insulators (TIs) are a class of material which possess spin-momentum-locked Dirac Fermions on the surfaces. Due to the spin-momentum locking, when a charge current flows through the surface of a TI, a spin polarization will be induced, the polarity of which is determined by the spin texture of the surface states. Such current-induced spin polarization can be detected by using a ferromagnetic tunneling contact as a detector. In this talk, we present our data measured in devices fabricated from BiSbTeSe<sub>2</sub> flakes. An unexpected spin polarization with an opposite polarity was observed in low-carrier-density devices. Possible origins of the polarity change will be discussed.



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