

Abstract Submitted  
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**Low Temperature STM Experiments on Helical Edge States in InAs/GaSb**<sup>1</sup> RUI-RUI DU, Rice University, TINGXIN LI, XIAOYANG MOU, Peking University, LINGJIE DU, Rice University, GERALD SULLIVAN, Teledyne Scientific — Inverted InAs/GaSb quantum wells have been recently shown to be a 2D topological insulator hosting robust helical edge states. Attributing to the fact that the hybridized minigap in this system opens at a finite wavevector, the edge states here have a low Fermi velocity  $V_F$ , and consequently their transport properties may reveal interesting interaction effects. Moreover, the  $V_F$  in this system can be continuously tuned by electrostatic gates, providing an experimental knob for tuning the interactions. We report work in progress for STM/STS measurements of edge states in the tunneling regime, where the edge states are exposed at the cleaved edge/UHV interface. Experiments are performed in a 400 mK STM/vector magnet system with in situ sample cleavage and thin film deposition capabilities. Ref. I. Knez, R.-R. Du and G. Sullivan, Phys. Rev. Lett. 107, 136603 (2011); L.-J. Du, I. Knez, G. Sullivan, R.-R. Du, ArXiv:1306.1925 (2013).

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