Surface States on Topological Insulators: Angle-Resolved Photoemission Spectroscopy Studies\footnote{This work was supported by DOE} TONICA VALLA, Brookhaven National Laboratory, ZHIHUI PAN, PETER JOHNSON, Brookaven National Laboratory, D. GARDNER, S. CHU, Y. S. LEE, MIT, RONGWEI HU, CEDOMIR PETROVIC, Brookaven National Laboratory — We have studied the electronic structure of several topological insulators using high resolution Angle-Resolved Photoemission Spectroscopy. We have observed two types of metallic surface states: a) pairs of spin-orbit split states with opposite spin chirality and b) unpaired spin chiral state. Through the adsorption of various atomic/molecular species, we were able to vary the filling, tune the spin-orbit coupling and alter the spin texture of these states.

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