Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Electronic structure, spin–orbit coupling, and interlayer interaction in bulk MoS_2 and WS_2 DREW LATZKE, WENTAO ZHANG, University of California, Berkeley and Lawrence Berkeley National Laboratory, SEFAATTIN TONGAY, Arizona State University, TAY-RONG CHANG, National Tsing Hua University, HSIN LIN, National University of Singapore, HORNG-TAY JENG, National Tsing Hua University and Academia Sinica, ASLIHAN SUSLU, Arizona State University, JUNQIAO WU, University of California, Berkeley and Lawrence Berkeley National Laboratory, ARUN BANSIL, Northeastern University, ALESSANDRA LANZARA, University of California, Berkeley and Lawrence Berkeley National Laboratory — Transition metal dichalcogenides (TMDs) (MX_2 where M = Mo or W and X = S, Se, or Te) are theorized to possess unique spin-split valence bands along with rare spin–valley coupling, making them attractive for applications within the growing fields of spintronics and valleytronics. Despite the importance of the split valence band that governs the unique spin- and valley-physics of TMDs, there remain many questions regarding its origin and properties in bulk TMDs. In this talk, I will present high-resolution angle-resolved photoemission spectroscopy (ARPES) measurements of the electronic band structure of bulk TMDs MoS_2 and WS_2. Detailed comparison with first principle calculations will be shown. The role of the valence band splitting and how it can be controlled will be discussed.

Drew Latzke
Univ of California - Berkeley

Date submitted: 12 Nov 2014 Electronic form version 1.4