Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Giant spin-splitting and orbital angular momentum in triangular lattice SEHOON OH, HYOUNG JOON CHOI, Department of Physics, IPAP, and Center for Computational Studies of Advanced Electronic Material Properties, Yonsei University, Seoul, Korea — We study the spin-splitting in triangular-lattice materials including Au (111) surface and transition-metal dichalcogenides quantitatively as well as qualitatively using tight-binding calculations and first-principles calculations. To analyze the spin-splitting of the bands, we calculate the orbital angular momentum (OAM) and consider the symmetry of the system. We confirm that the giant spin-splitting results from the presence of significant local OAMs and strong spin-orbit interactions in the vicinity of high-atomic number elements. This work was supported by NRF of KOREA (Grant No. 2011-0018306) and KISTI supercomputing center (Project No. KSC-2013-C3-062).

Sehoon Oh
Yonsei Univ

Date submitted: 14 Nov 2014 Electronic form version 1.4