

Abstract Submitted  
for the PSF15 Meeting of  
The American Physical Society

**Effective Tight Binding Hamiltonian for the Class of Monolayer Dichalcogenides** MOHAMMAD MAHDI VALIZADEH, SASHI SATPATHY, University of Missouri - Columbia — One of the most important class of two-dimensional materials is the class of metal dichalcogenides such as  $MoS_2$  and  $WS_2$ . Strong spin-orbit coupling interaction and broken inversion symmetry in the lattice structure lead to very interesting physical properties, including changing the spin-channel from  $K$  to  $K'$  high-symmetry points in the valence band. We find the effective tight binding Hamiltonian for this class of materials. This effective tight binding Hamiltonian can be used for different analytical calculations.

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Date submitted: 04 Oct 2015

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