

Electronic Structure of Transition Metal Dichalcogenides

Tonica Valla
Brookhaven National Laboratory

The transition metal dichalcogenides (TMD) form a big family of layered compounds with immensely diverse electronic properties, both in the bulk and in thin layers form, often involving ordered phases, such as CDW and superconductivity, or topological phases such as Weyl semimetals and topological insulators. Tightly intertwined with the structural variations, their electronic properties represent an ideal playground for exploring the quantum degrees of freedom of electrons and offer a great potential for new electronic and optical applications. Here, we will present several recent examples of TMD's exotic phases.