**Topological and Interaction Effects in Atomically Thin 1D & 2D Materials**

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Symmetry, interaction and topological effects, as well as environmental screening, dominate many of the quantum properties of reduced-dimensional systems and nanostructures. These effects often lead to manifestation of counter-intuitive concepts and phenomena that may not be so prominent or have not been seen in bulk materials. In this talk, I present some fascinating physical phenomena discovered in recent studies of atomically thin one-dimensional (1D) and two-dimensional (2D) materials. A number of highly interesting and unexpected behaviors have been found – e.g., strongly bound excitons (electron-hole pairs) with unusual energy level structures and new topology-dictated optical selection rules; tunable magnetism and plasmonic properties; novel topological phases; correlated multi-particle excitations; etc. – adding to the outstanding promise of 1D and 2D materials for exploration of new science and valuable applications.

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