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## **Strongly Correlated Electrons in van der Waals heterostructures**

Interactions between particles in quantum many-body systems can lead to collective behavior in two-dimensional (2D) phase space. Heterogeneous interfaces between two different materials are an essential building block for modern semiconductor devices. The 2D van der Waals (vdW) materials and their heterostructures provide a new opportunity to fabricate atomically sharp interfaces at the ultimate quantum limit for electronic and optoelectronic processes. In this talk, we will discuss several research efforts to realize strongly correlated electrons in mesoscopic devices based on stacked vdW interfaces between 2-dimensional materials. The topics include semiconducting exciton condensations, paired composite fermions, correlated electron states in twisted multilayer graphene, and novel interfacial superconductivity based on twisted vdW junctions in high-temperature superconductors.