

# Visualizing Electron Localization and Minibands in Moiré Superlattices

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The ability to engineer flattened electronic bands by controlling interlayer effects in moiré superlattices of two-dimensional materials has opened the door for material physicists to understand and control correlated electron phenomena in an unprecedentedly broad class of materials. In this talk I will present our work on different van der Waals heterostructure, from graphene to the heterobilayer WS<sub>2</sub>/WSe<sub>2</sub> family to study the evolution of the electronic structure from weakly interacting regime to strongly localized regime by using angle resolved photoemission spectroscopy with spatial resolution. I will discuss how correlation develops and its effect on the band structure and electron self-energy as well as the significant role of interlayer physics and hybridization in driving electron localization.