Direct observation of superlattice bands in graphene/h-BN van der Waals heterostructure

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Abstract Van der Waals heterostructures are formed by stacking different two-dimensional materials through weak van der Waals force. Such heterostructures provide a new route for modifying the electronic spectrum of two-dimensional crystals, and realizing new materials with tailored properties and novel functionalities. Here we present an angle-resolved photoemission spectroscopic study of the electronic structure of graphene/h-BN van der Waals heterostructure with zero degree orientation. Our data reveal directly the emergence of superlattice bands from the Moire superlattice with full energy and momentum information.