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ARPES Study of Quasifreestanding Graphene DAVID SIEGEL, UC Berkeley / LBNL, CHOONKYU HWANG, XIAOZHU YU, ALEXEI FEDOROV, Lawrence Berkeley National Laboratory, WALT DE HEER, CLAIRE BERGER, Georgia Institute of Technology, ALESSANDRA LANZARA, UC Berkeley / Lawrence Berkeley National Laboratory — Graphene films grown on the carbon face of SiC have been shown to be decoupled from adjacent layers by rotational faults, making this an ideal system to study the electronic properties of freestanding graphene. By using high resolution angle-resolved photoemission spectroscopy, we provide the first full study of the electronic structure, stacking, and many-body interactions of these freestanding samples. We also discuss the evolution of the electronic structure and many body interactions as a function of doping. These results provide critical insights into the intrinsic properties of freestanding graphene sheets.

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