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THE CARBON FACE OF SiC AND HOW ELECTRON-ELECTRON INTERACTIONS DISTORT THE DIRAC CONE IN GRAPHENE

How does the pointlike Dirac cone of graphene cause it to behave differently from ordinary metals? This is the fundamental question that we set out to answer when we began to study graphene grown on the carbon face of SiC. We eventually found that the long-range electronic interactions in graphene renormalize the Dirac cone, causing it to be warped in a different way from a typical Fermi liquid. We will discuss how the ARPES beamlines at the ALS allowed us to perform this study, uncover interesting many-body effects, and learn about important properties of the rotational stacking of graphene on the C-Face of SiC.