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【128】 Imaging Disorder in a Bilayer-Graphene Channel

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Bilayer-Graphene based Nanostructures promise unique opportunities in the field of quantum electronics. However, the endeavor to form quantum electronic building blocks such as Quantum Point Contacts (QPCs) and Quantum Dots (QDs) is significantly hampered by the presence of disorder.

To understand the influence of disorder on the formation of QPCs and QDs in Graphene, we employ Scanning Gate Microscopy on a 3 μ m-long, splitgate-defined channel on encapsulated bilayer graphene. By scanning the voltage-biased metallic tip of an atomic force microscope over the graphene channel, we perturb the potential landscape of the channel locally. This allows us to infer the local disorder potential within the channel.

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