

Transport across potential steps in graphene

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In graphene, quasiparticles exhibit a new degree of freedom analogous to the spin which deeply modifies their transport properties. A good way to evidence these peculiar properties is revealed in the transport across potential barriers in graphene. We investigate experimentally this problem by fabricating tunable potential barriers. The results of these experiments are interpreted using the Dirac equation and taking into account screening properties in graphene, close to zero density. We also propose a related explanation for the asymmetry between electron and hole mobilities, which is widely observed.