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STM Prediction for Klein tunneling in graphene p-n junctions

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Klein tunneling is one of the most counter intuitive phenomena from quantum electrodynamics, where electrons pass through an infinite potential barrier with unity probability. Graphene provides a platform to test this phenomenon experimentally. There were some resistance measurements showing evidence for Klein tunneling, but scanning tunneling microscope (STM) measurements still remain mystery. We present calculations of spatial distribution of local density of states at the graphene p-n junctions, and show expected experimental pattern for STM measurements. We will compare our calculations with some recent STM data on graphene p-n junctions.

Biography

Dian Shi is currently a PhD student at UCSD focusing on condensed matter experiment.

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