



北京大学量子材料科学中心

International Center for Quantum Materials, PKU

Weekly Seminar

Unusual Current Partition Law and Conducting Topological Network in Twisted Graphene bilayer

Time: 4: 00 pm, April. 24, 2019 (Wednesday)

2019 4 24

4:00

Venue: Room W563, Physics building, Peking University

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The intersection of three topological zero-lines is the elementary current partition node that arises in twisted bilayer graphene due to moiré patterns of six alternating gapped AB/BA stacking regions. Unlike the partition laws of two intersecting zero-lines, we find that (i) the incoming current can be partitioned into both left-right adjacent topological channels and that (ii) the forward propagating current is nonzero. Moreover, upon applying a perpendicular electric field, we observe that electronic conducting of the topological network formed by such partition nodes is direction-dependent. Our results provide a comprehensive depiction of the electronic transport properties of a topological zero-line network and