



Seminar

Superconductivity, strong correlation and novel band topology in magic angle bilayer graphene

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Abstract

When twisted a relatively small orientation angle, bilayer graphene has superlattice minibands that have emerged as a rich and highly tunable source of quantum phases, notably the appearance of superconductivity close to interaction-induced insulating states and novel band topology. In this talk, I will discuss our recent transport study on twisted bilayer graphene (tBLG). We succeeded in observing a large variety of previously unobserved states, including a full sequence of correlated states with novel topological textures, new superconducting domes and orbital magnets in the first magic angle ($\sim 1.1^\circ$) tBLG. I will also discuss the multiple flat bands and underlying fragile topology we recently observed in tBLG near the second magic angle ($\sim 0.5^\circ$)

About the Speaker

Dr. Xiaobo Lu got his Bachelor degree in Physics from Shandong University in 2012, and received his Ph.D. degree from Institute of Physics, Chinese Academy of Sciences (IOP, CAS), in 2017. After graduation, he continued to do post-doctoral research in the Institute of Photonic Science (ICFO) from 2017 to 2020, and then moved to ETH Zurich as a postdoctoral researcher until now. Dr. Xiaobo Lu's current research includes Quantum transport/Quantum photonics with 2D materials, High-quality novel 2D vdW hetero-structures, Nano-devices fabrication.