北京大学量子材料科学中心

International Center for Quantum Materials, PKU

Weekly Seminar

Quantum metric, quantum fluctuations in a flatband moiré superconductor

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Time: 3:00 pm, Nov.25, 2026 (Wednesday)

时间：2026年11月25日（周三）下午3:00

Venue: Room w563, Physics building, Peking University

地点：北京大学物理楼，西563会议室

Abstract

Moiré superlattices have been demonstrated as an ideal platform for investigating novel superconductivity and topological phases in the flatband limit. In this talk, I will mainly present two complementary experiments to demonstrate the importance of the quantum metric and quantum phase fluctuations in stabilizing flatband superconductivity in alternating twisted graphene multilayers. I will quantify the flat-band Fermi velocity and superfluid stiffness, and discuss the Dirac band's contribution to the flatband superconductivity. I will also discuss the bosonic superconductor-insulator quantum phase transition and highlight the importance of quantum phase fluctuations in moiré superconductors.

About the speaker

Dr. Wei Yang is an associate professor at the Institute of Physics, Chinese Academy of Sciences (IOP-CAS) in Beijing, China. He received his PhD in condensed matter physics from IOP-CAS in 2014. He worked as a postdoc from 2014 to 2019, first at École Normale Supérieure and CNRS in Paris, then at ICOF-The Institute of Photonic Sciences in Barcelona. He joined the IOP-CAS as a faculty member in 2019. Currently, he mainly focuses on exploring strongly correlated phases and quantum phase transitions in moiré superlattices, including twisted double bilayer graphene, twisted rhombohedral bilayer-trilayer graphene, and alternating twisted multilayer graphene.