



Seminar

High-accurate capacitance measurements at mK-temperature

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Time: 9:30am, November 14, 2023 (Tuesday)

时间: 2023年11月14日 (周二) 上午 9:30

Venue: Room W563, Physics Building, Peking University

地点: 北京大学物理楼 西563

Abstract

In this talk, I will introduce our recent experimental studies of ultra-high mobility 2D electron/hole systems using our newly developed high-accuracy capacitance measurement at Peking university. We are capable to measure sub-pF capacitances quantitatively and resolve sub-fF capacitance variation at mK-temperature. With such a high accuracy, we find that the capacitance charge appears only at the fringe of the gate at high magnetic field when the 2D conductivity decreases significantly. Our results agree with a model which predicts that the capacitance and conductance strongly entangle with each other. Near integer fillings, we find features suggesting the formation of Wigner crystal, consistent with previous microwave resonance studies.

About the Speaker

Yang Liu joint the International Center for Quantum Materials at Peking University as an assistant professor in 2018. He received the B.E. and M.E. from Tsinghua university, and PhD degree from Princeton university. He then spent 3 years at Stanford university as postdoc fellow. His research expertise/interests is the many-body phenomenon in ultra-high-quality two-dimensional systems, such as fractional quantum Hall effect and Wigner crystal.