

CONDENSED MATTER SCIENCES SEMINAR

Dr. Ken K.W. Ma

Host

Dr Kun Yang

Title

Effective String Theory Toolbox for Quantum Hall Interfaces

Friday, October 16th, 2026

1st Floor – B101

15:00-16:00

Abstract

Abstract: Quantum Hall interfaces provide a natural setting in which geometry, topology, and low-energy dynamics become intertwined. For a dynamical interface, its motion changes the areas occupied by the adjacent incompressible Hall fluids. Thus, tying fluctuations of the interface geometry directly to charge density and transport. In this talk, I will present an effective string-theory framework that captures this interplay. I will first focus on the bosonic string description of fluctuating Abelian interfaces and then show how the framework can be extended to incorporate chiral Majorana fermions for the Moore-Read state. I will also briefly discuss open quantum Hall strings and boundaries as branes on which they may terminate.

References

- 1. K. K. W. Ma, arXiv:2608.06097;**
- 2. K. K. W. Ma, arXiv:2608.06098;**
- 3. K. K. W. Ma, arXiv:2608.06100.**