University of Victoria

PHYSICS AND ASTRONOMY SEMINAR (In-Person Only)

Dr. Ruben Lier

University of Amsterdam

"How Ideas Trickle Down Hydrodynamically: a Higher-Form Story"

Abstract

In this talk, I will explain how, through hydrodynamics, ideas from string theory seep into various fields of physics in unexpected ways. I will then focus on a specific case from my own research: numerically solving the equations of relativistic resistive magnetohydrodynamics. In this context, insights from higher-form symmetry prove to be useful, as they allow resistivity to be treated as a magnetic equivalent of viscosity. I will discuss how our model upholds causality, essential for numerical stability, and outline the numerical scheme used for magnetohydrodynamic simulations that could describe astrophysical phenomena such as black hole accretion.

Tuesday, November 26th
12:30pm PST
ELL 038