

Condensed Matter Theory Center Seminar



Tuesday, November 28
11:00 am – 12:15 pm
2205 John S. Toll Physics Building

Andrew Lucas
Stanford

“Signatures of electronic hydrodynamics in electrical and thermal transport”

Abstract: The hydrodynamic limit is a simple, solvable limit of the transport problem in a strongly correlated electron system. I will describe the consequences of hydrodynamics on the DC electrical and thermal conductivity, highlighting three particular examples we have recently studied: (1) the consequences of potential vs. magnetic disorder on transport in viscous Fermi liquids, (2) consequences of Fermi surface geometry on transport at the ballistic-to-hydrodynamic crossover, and (3) the experimentally observed violations of the Wiedemann-Franz law in the quasirelativistic electron-hole plasma of graphene. These new theories may explain puzzling transport phenomena, including T^2 resistivity in single-band SrTiO₃, and "strange metal" phases.

Host: Junhyun Lee

Web: <http://www.physics.umd.edu/cmtc/seminars.html>

