



PHYSICS AND ASTRONOMY COLLOQUIUM

Dr. Sean Hartnoll

Stanford University, Department of Physics

“From Black Holes to Badly Behaved Metals”

Abstract

Ripples propagating on the event horizons of black holes precisely mimic the flow of heat and charge through a strongly correlated medium. This remarkable fact builds upon insights from the 70s showing that black holes possess thermodynamics properties. I will describe how this connection, known as holographic duality, has recently lead to new ways of thinking about thermal and electronic transport in unconventional metals. I will argue that, in moving beyond the 100 year old quasiparticle paradigm for transport, these ideas can help to demystify some of the exotic behavior of these materials.

Wednesday, October 1, 2014

3:30 p.m.

Bob Wright Centre

Room A104