Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Metal-Insulator Transition from Holography SEAN HARTNOLL, Stanford University, ARISTOMENIS DONOS, Imperial College London — The holographic correspondence allows theoretical control of certain phases of matter that do not admit a quasiparticle description. This approach has proved helpful for the description of quantum critical transport. I will present holographic results for transport away from particle-hole symmetry. This requires explicit inclusion of lattice effects to render the conductivity finite. I will show that the holographic system undergoes a metal-insulator transition as a function of the strength of the lattice. This results implies that holography is capable of describing localization physics in strongly interacting systems. I will present results for the optical conductivity, exibiting a transition from a metallic drude peak to Mott insulating behavior.

Sean Hartnoll
Stanford University

Date submitted: 09 Nov 2012 Electronic form version 1.4