



CCCN

CRETE CENTER FOR
QUANTUM COMPLEXITY
AND NANOTECHNOLOGY



Crete Center
for Theoretical Physics



JOINT CCQCN - CCTP SEMINAR

Tuesday, 15 April 2014

14:15-15:15

2nd Floor Seminar Room

Momentum dissipation and charge transport in holography

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Abstract: Holography can be used to study the physics of strongly coupled quantum field theories at finite density, which may be at work in certain real materials. However, the conservation of momentum in these field theories means that they have unrealistic transport properties, such as an infinite electrical conductivity. I will give a summary of recent progress in constructing gravitational solutions which are dual to field theories which dissipate momentum. I will explain how these gravitational solutions are related to theories of massive gravity, and what the transport properties of the dual field theories are. Finally, I will describe a simple mechanism, which is natural from the holographic point of view, by which strongly interacting metals can acquire a linear in temperature resistivity, as is observed in the strange metal phase of the cuprates.

