Sean Hartnoll

Stanford University, USA

Extreme diffusion: a bound and a model

Thermal and electronic transport in conventional metals is described by welldefined quasiparticles undergoing collisions. It is possible that this paradigm is insufficient to describe all materials, and understanding anomalous transport measurements in strongly correlated materials may require a different framework. I will discuss two results in non-quasiparticle transport. Firstly, a rigorous bound on diffusion that holds with and without quasiparticles. Secondly, a realistic and also tractable model in which diffusion beyond the Mott-Ioffe-Regel limit occurs.