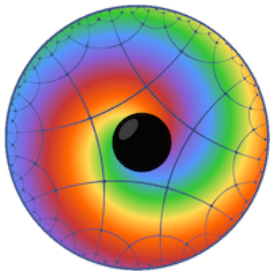

Contribution ID: **63** Type: **not specified**

Thermoelectric Conductivities at Finite Magnetic Field and the Nernst effect

Wednesday, 15 April 2015 16:20 (30 minutes)

We study electric, thermoelectric, and thermal conductivities of a strongly correlated system in the presence of magnetic field by gauge/gravity duality. We consider a general class of Einstein-Maxwell-Dilaton theory with axion fields imposing momentum relaxation. Analytic general formulas for DC conductivities and the Nernst signal are derived in terms of the black hole horizon data. For an explicit model study we analyse in detail the dyonic black hole modified by momentum relaxation. In this model, the Nernst signal shows a typical vortex-liquid effect when momentum relaxation effect is comparable to chemical potential. We compute all AC electric, thermoelectric, and thermal conductivities by numerical analysis and confirms that their zero frequency limits precisely reproduce our analytic formulas, which is a non-trivial consistency check of our methods. We discuss the momentum relaxation effect on conductivities including cyclotron resonance poles.

Presenter: SEO, Yunseok

Session Classification: Parallel Session