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Non-equilibrium properties of the QGP with a magnetic field: a holographic approach

Monday 12 September 2016 18:00 (20 minutes)

Lattice data for the QCD equation of state and magnetic susceptibility at zero magnetic field are used to engineer a holographic system dual to the QGP with a magnetic field near the crossover region. This holographic setup is a five dimensional black hole whose dynamics is given by an Einstein-Maxwell-Dilaton action. Our results for equilibrium quantities such as entropy density and pressure at finite magnetic field are in quantitative agreement with current lattice data. We then proceed to compute how the inclusion of the magnetic field alters the momentum transport (non-equilibrium quantities that are currently out of reach of lattice QCD), such as viscosity and the drag force experienced by a heavy quark, in the QGP.

Summary

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Author: CRITELLI, Renato (University of Sao Paulo - Institute of Physics)

Co-authors: NORONHA, Jorge (University of Sao Paulo); ZANIBONI SIQUEIRA, Maicon (USP - Universidade de Sao Paulo); ROUGEMONT, Romulo; FINAZZO, Stefano Ivo (Universidade de São Paulo)

Presenter: CRITELLI, Renato (University of Sao Paulo - Institute of Physics)

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