QUARK MATTER 2015
Sep. 27 – Oct. 3, 2015 Kobe, Japan

Contribution ID: **147** Type: **Poster**

Holographic calculation of the QCD crossover temperature in a magnetic field

Tuesday 29 September 2015 16:30 (2 hours)

Lattice data for the QCD equation of state and the magnetic susceptibility computed near the crossover phase transition (at zero magnetic field) are used to determine the input parameters of a five dimensional Einstein-Maxwell-Dilaton holographic model. Once the model parameters are fixed at zero magnetic field, one can use this holographic construction to study the effects of a magnetic field on the equilibrium and transport properties of the quark-gluon plasma. In this talk we use this model to study the dependence of the crossover temperature with an external magnetic field. Remarkably, our results for the pressure of the plasma and the crossover temperature [1] are in quantitative agreement with current lattice data for values of the magnetic field $0 < eB < 0.3$ GeV^2, which is the relevant range for ultrarelativistic heavy ion collision applications.

Reference:

[1] R. Rougemont, R. Critelli and J. Noronha,
"Holographic calculation of the QCD crossover temperature in a magnetic field," arXiv:1505.07894 [hep-th], submitted for publication in JHEP.

Primary author: NORONHA, Jorge (University of Sao Paulo)

Presenter: NORONHA, Jorge (University of Sao Paulo)

Session Classification: Poster Session

Track Classification: QCD at High Temperature