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Determination of the curvature of the QCD pseudo-critical line using hadronic observables

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In this talk I will present a new method to study the QCD phase diagram at finite baryon chemical potential, using hadronic correlators. Specifically, the approach exploits the degeneracy between the vector and axial vector channels upon chiral symmetry restoration. The temperature at which this degeneracy occurs shifts as μ_B is increased, allowing us to follow the change of T_c along the pseudo-critical line in the $T - \mu_B$ plane. The curvature of this line is encapsulated in the second-order coefficient kappa and our results are in good agreement with kappa values obtained using thermodynamic quantities. This work employs lattice QCD ensembles produced by the FASTSUM collaboration on anisotropic lattices, using an improved Wilson action for the fermions.

Author: SMECCA, Antonio (Swansea University)

Co-authors: JÄGER, Benjamin; ALLTON, Chris (Swansea University); Prof. AARTS, Gert (Swansea University); SKULLERUD, Jon-Ivar; WU, Liang-Kai (Jiangsu University); BIGNELL, Ryan (Trinity College Dublin); NAM, Seung-il; KIM, Seyong (Unknown)

Presenter: SMECCA, Antonio (Swansea University)

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