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Bayesian inference of holographic transport and energy loss for the hot and baryon dense QGP

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We use the Einstein-Maxwell-Dilaton model, which is based on the gravity/gauge duality framework, supplemented by Bayesian inference to calculate key transport coefficients and energy loss of the quark-gluon plasma including baryon conductivity, baryon diffusion, bulk viscosity, shear viscosity, drag force, heavy quark diffusion coefficient and jet quenching parameter. Our model is calibrated to match the lattice QCD equation of state at zero chemical potential. The model, with updated parametrization, exhibits a line of first-order phase transition at high chemical potential, with a critical point located at T = 103.5 MeV and ⌧⌧= 597.5 MeV [1]. Here we focus on studying the transport coefficient and energy loss in a baryon-rich quark-gluon plasma, particularly along the line of first order phase transition and in the vicinity of the critical point.
[1] Hippert, M., Grefa, J., Manning, T. A., Noronha, J., Noronha-Hostler, J., Portillo Vazquez, I., Ratti, C., Rougemont, R., Trujillo, M., Phys.Rev.D 110 (2024) 9, 094006

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