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BHAC-QGP: A New Code for Magnetic Fields in Heavy-Ion Collisions

Non-central heavy-ion collisions produce some of the strongest magnetic fields in the universe and hence provide a unique setting to study QCD matter under extreme conditions. I will introduce BHAC-QGP, a derivation of the (3+1)D GRMHD Black Hole Accretion Code that is designed to investigate the influence of magnetic fields on final state observables and anomalous transport phenomena. Besides giving an overview of the main features of the code and illustrating the implemented physics, I will demonstrate its robustness and present results for final hadron flows in Au+Au collisions at $\sqrt{s} = 200$ GeV with different initial conditions. Lastly, I will end with a brief outlook on future improvements and more realistic modeling.

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