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Constraining QGP properties with CHIMERA IRAKLI GARISHVILI, BETTY ABELEV, MICHAEL CHENG, ANDREW GLENN, RON SOLTZ, LLNL — Understanding essential properties of strongly interacting matter is arguably the most important goal of the relativistic heavy-ion programs both at RHIC and the LHC. In particular, constraining observables such as ratio of shear viscosity to entropy density, η/s, initial temperature, T_{init}, and energy density is of critical importance. For this purpose we have developed CHIMERA, Comprehensive Heavy Ion Model Reporting and Evaluation Algorithm. CHIMERA is designed to facilitate global statistical comparison of results from our multi-stage hydrodynamics/hadron cascade model of heavy ion collisions to the key soft observables (HBT, elliptic flow, spectra) measured at RHIC and the LHC. Within this framework the data representing multiple different measurements from different experiments are compiled into single format. One of the unique features of CHIMERA is, that in addition to taking into account statistical errors, it also treats different types of systematic uncertainties. The hydrodynamics/hadron cascade model used in the framework incorporates different initial state conditions, pre-equilibrium flow, the UVH2+1 viscous hydro model, Cooper-Frye freezeout, and the UrQMD hadronic cascade model. The sensitivity of the observables to the equation of state (EoS) is explored using several EoS's in the hydrodynamic evolution. The latest results from CHIMERA, including data from the LHC, will be presented.

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