Contribution ID: **446**　　　　　　　　　　　　　　　　Type: **Oral Presentation**

Multi-system Bayesian constraints on the transport coefficients of QCD

Tuesday 5 November 2019 17:40 (20 minutes)

We present state-of-the-art constraints on the properties of the quark-gluon plasma by performing a comprehensive Bayesian model-to-data comparison of heavy-ion measurements. Soft observables from both RHIC and the LHC are combined into a global Bayesian analysis, enabling us to obtain more reliable constraints on the transport coefficients of QCD, in particular for the temperature dependence of shear and bulk viscosity.

We study multiple different mappings of the hydrodynamic fields to hadronic momentum distributions (i.e. viscous effects on particlization) and for the first time quantify the resulting theoretical uncertainty on the Bayesian analysis. Uncertainties originating from modeling the late hadronic rescattering stage of the collisions are also investigated by preliminary comparisons of SMASH and UrQMD as afterburners. The newly obtained Bayesian constraints are validated by comparisons with additional measurements, including high-statistics observables that are currently too challenging to include in Bayesian calibrations.

Author: PAQUET, Jean-Francois (Duke University)

Presenter: PAQUET, Jean-Francois (Duke University)

Session Classification: Parallel Session - Collective dynamics III

Track Classification: Collective dynamics and final state interaction