Contribution ID: **51** Type: **Contributed Talk**

Multi-strange hadrons and the precision extraction of QGP properties in the RHIC-BES domain

Tuesday, 28 June 2016 15:00 (20 minutes)

We systematically compare an event-by-event transport+viscous hydrodynamics hybrid model to data from the RHIC beam energy scan using a general Bayesian method. We probe multiple model parameters characterizing the initial state as well as fundamental quark-gluon plasma properties, calibrate the model to optimally reproduce experimental data, and extract quantitative constraints for all parameters simultaneously.

Due to their low hadronic cross sections, multi-strange hadrons phi and Omega are potential probes of the transition stage between partonic and hadronic medium in relativistic heavy ion collisions. We demonstrate how their inclusion affects the outcome of the Bayesian analysis and conduct an in depth analysis of the viability of phi and Omega as probes of the phase transition region in heavy ion collisions at higher-end RHIC collision energies. Utilizing UrQMD to model the final hadronic interactions, we examine the collision rates of phi and Omega and the modification to their transverse momentum spectra due to these interactions. In addition, we determine the fraction of phi mesons which can be reconstructed from their decay products (kaons).

On behalf of collaboration:

None

Primary author: AUVINEN, Jussi (Duke University)

Co-authors: BERNHARD, Jonah; REDLICH, Krzysztof (University of Wroclaw); Prof. BASS, Steffen A. (Duke University)

Presenter: AUVINEN, Jussi (Duke University)

Session Classification: Strangeness Production