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Systematic Extraction of QGP Properties

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One of the motivations for the RHIC beam energy scan program was its capability of providing data for the determination of the temperature- and baryon-density dependence of QGP transport coefficients, such as the specific shear viscosity. This task is complicated by the rich set phenomena that computational models commonly used for the determination of the transport coefficients need to address, ranging from pre-equilibrium evolution to fluctuations around the QCD critical point.

In my talk I will demonstrate an new method for determining the physics parameters that drive the dynamics of computational models, utilizing Bayesian statistics and a multi-parameter model to data comparison. We shall use a state-of-the-art hybrid model for calculating the time-evolution of a heavy-ion collision, including that of the QGP phase and its subsequent decay into the hadronic final state. RHIC-BES data will be utilized to extract first hints for a possible baryo-chemical potential dependence of the QGP specific shear viscosity.

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