Contribution ID: **243** Type: **Poster**

Mode-by-mode evolution in Pb-Pb collisions

The observables computed in simulations of heavy ion collisions are known to be highly sensitive to the initial state of the evolution. Despite advances in the modeling, fully understanding this initial state remains a challenge. In this work, we propose a method to relate final observables to the initial state, described as the sum of an average state and a random linear combination of independent fluctuation modes. We illustrate the approach on Pb-Pb events in fixed centrality classes, and quantify how the modes contribute to final-state observables. We show the importance of both linear and quadratic responses in this evolution, and we highlight how statistical noise can affect simulations including hadronic interactions. Our results provide deeper insight into the impact of fluctuations for heavy ion collisions.

Category

Theory

Collaboration (if applicable)

Author: Ms KRUPCZAK, Renata (Universität Bielefeld)

Co-authors: Dr ROCH, Hendrik (Wayne State University); BORGHINI, Nicolas

Presenter: Ms KRUPCZAK, Renata (Universität Bielefeld)

Session Classification: Poster session 1

Track Classification: Correlations & fluctuations