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On the differences among Initial Conditions and their role in the distribution of particles

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There are several theoretical models for initial conditions, which intend to describe the matter created in ultra-relativistic heavy-ion collisions. In this work, we will perform hydrodynamics computations using different initial conditions, as Wood-Saxon, Glauber, Mckln, Nexus and Gubser [1], and calculate several observables, as for instance, anisotropic flows v_n [2], eccentricities ε_n , symmetric cumulants $SC(n, m)$ [3], event-plane correlations, and others quantities, in order to understand the hydrodynamics response to different initials geometry in heavy-ion collisions.

[1] Different references, but you can see “The Fate of the Initial State Fluctuations in Heavy Ion Collisions. II The Fluctuations and Sounds”. Pilar Staig, Edward Shuryak. Phys.Rev. C84 (2011) 034908

[2] “Anisotropic flow in event-by-event ideal hydrodynamic simulations of 200 GeV Au+Au collisions.” Fernando G. Gardim, Frederique Grassi, Matthew Luzum, Jean-Yves Ollitrault. Phys.Rev.Lett. 109 (2012) 202302

[3] “Hydrodynamic Predictions for Mixed Harmonic Correlations in 200 GeV Au+Au Collisions” Fernando G. Gardim, Frederique Grassi, Matthew Luzum, Jacquelyn Noronha-Hostler. Phys.Rev. C95 (2017) no.3, 034901

“This work is in progress, and will be finished up to march 2018.

Content type

Theory

Collaboration

Centralised submission by Collaboration

Presenter name already specified

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