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Effects of Time Evolution and Fluctuating Initial Conditions on Heavy Flavor electron R_{AA} in Event-by-Event Relativistic Hydrodynamics

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Effects on the heavy quarks dynamics due to the medium formed in heavy ion collisions are investigated, on an event-by-event basis, using a newly developed 2D+1 Lagrangian ideal hydrodynamic code which is based on the Smoothed Particle Hydrodynamics (SPH) algorithm. An energy loss model is used on top of the evolving space-time energy density distributions for two different schemes: fluctuating and smooth initial conditions (IC) events. The calculations are also performed for static space-time energy density distributions for these schemes. We find that the nuclear modification factor $R_{\rm AA}$ is affected by hydrodynamic evolution in comparison with the static IC as expected due to the medium quenching. Furthermore, we showed how the spectrum is affected when fluctuations on the medium were considered in comparison with the smooth profile.

On behalf of collaboration:

None

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