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Modeling of modifications induced by jets in the relativistic bulk nuclear matter

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This work is focused on the influence of energy deposited by jets in the medium on the behavior of bulk nuclear matter.

In the heavy ion reactions jets are widely used as probes in the study of Quark-Gluon-Plasma (QGP). Modeling using relativistic hydrodynamics with jets perturbation is employed to extract the properties of the QGP.

In order to observe a modification of the collective characteristic of the matter, we use our (3+1) relativistic hydrodynamic code and jet energy loss algorithm implemented on the Graphics Cards (GPU).

The program uses 7th order WENO algorithm and the Cartesian coordinate system to provide high spatial resolution and high accuracy in hydrodynamic simulations required to analyze the propagation of jets in the nuclear matter. We present how the propagation of jets in the medium could affect the measurements of the properties of a strongly interacting nuclear matter.

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