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Observables from a 3+1D relativistic hydro solution

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In the last several years it has been revealed that the matter produced in the collisions of the Relativistic Heavy Ion Collider (RHIC) is a nearly perfect fluid, i.e. it can be described with perfect fluid hydrodynamics. There was a long search for exact hydrodynamic models (solutions of the partial differential equations of hydrodynamics) and several models proved to be applicable. There are 1+3 dimensional models, as well as relativistic models - but no 1+3 dimensional and relativistic model has been tested yet. We extract observables for the first time from a 1+3 dimensional relativistic hydro model. We use the relativistic, ellipsoidally symmetric model of Csorgo, Csernai, Hama and Kodama. We calculate momentum distribution, elliptic flow and correlation radii and compare them to RHIC data.

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