



The smallest, hottest and most perfect fluid on Earth

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In this presentation I will talk about how we create the state of matter where quarks and gluons are deconfined, the so-called Quark Gluon Plasma QGP, in heavy ion collisions in heavy ion collisions at relativistic energies. I will show that we need the relativistic hydrodynamic description to understand this state of matter, and that we can use the experimental data to extract some thermodynamic quantities from the QGP in order to access its equation of state. I will also discuss that theoretical studies on the viscosity, both for shear and bulk, of this matter lead us to the interpretation that we have the most perfect fluid known. Finally, I will show that recent analyses of the state created in collisions smaller than two heavy ions, as in a proton and another heavy ion (p + Pb), indicate that under some conditions we also have deconfined matter.

References

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