Contribution ID: **19** Type: **not specified**

Towards the Little Bang Standard Model

Friday, 7 December 2012 12:00 (45 minutes)

The Little Bangs created in ultrarelativistic heavy-ion collisions share many characteristic features with the cosmological evolution after the Big Bang. I will demonstrate how quantum fluctuations in the initial state of the Little Bang propagate via hydrodynamic evolution (supplemented by an early pre-equilibrated thermalization and a late kinetic freeze-out stage) into the experimentally observed final state, manifesting themselves as fluctuations in the final flow pattern. A harmonic analysis of the final flows, their transverse momentum dependence and their flow angles (the "Little Bang flow fluctuation spectrum") provides detailed information from which the spectrum of gluon fluctuations in the initial state and the transport coefficients of the quark-gluon plasma fluid created in the collisions can be quantitatively extracted.

Presentation Type

Talk

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