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Speed of sound and dynamics of relativistic heavy ion collisions

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Collective flow is an essential component in describing the dynamics of relativistic heavy ion collisions. The flow characteristics are intimately related to the equation of state of the thermally equilibrated matter created in these collisions through the speed of sound. Using either the Bjorken or Landau hydrodynamics or a combination thereof it is possible to relate the particle yields to the speed of sound. Here we study the flow properties using the equation of state from an effective model and discuss the possible distinctive signatures at low densities and high temperature relevant for LHC and at high densities and low temperatures relevant for FAIR. The difference in characteristics of these two scenarios may help us in identifying the region around the critical end point.

Primary authors: RAY, Rajarshi (B); ADAK, Ramaprasad (Bose Institute); Prof. GHOSH, Sanjay (Bose Institute); SAMANTA, Subhasis (Bose Institute); DAS, Supriya (Bose Institute)

Presenter: Prof. GHOSH, Sanjay (Bose Institute)

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