



Contribution ID: 30

Type: **not specified**

Flow as an interplay of fluid-like and non-fluid like excitations

Wednesday, 20 November 2019 11:50 (20 minutes)

To study the microscopic structure of quark-gluon plasma produced in hadronic collisions, data must be confronted with models that go beyond fluid dynamics. In order to illustrate the importance of non-fluid like excitations in small systems such as pp and pA collisions, I shall discuss the interplay of fluid-like and non-fluid like excitations in a simple kinetic theory model that encompasses fluid dynamics but contains also particle-like excitations in a boost invariant setting with no symmetries in the transverse plane and with large initial momentum asymmetries. This kinetic theory is confronted with data on azimuthal flow coefficients over a wide centrality range in PbPb collisions at the LHC, in AuAu collisions at RHIC, and in pPb collisions at the LHC. In this way, I shall present the evidence that non-hydrodynamic excitations make the dominant contribution to collective flow signals in pPb collisions at the LHC and contribute significantly to flow in peripheral nucleus-nucleus collisions, while fluid-like excitations dominate collectivity in central nucleus-nucleus collisions at collider energies.

Primary authors: KURKELA, Eero Aleks (CERN); WIEDEMANN, Urs (CERN); WU, Bin (CERN)

Presenter: WU, Bin (CERN)

Session Classification: Heavy Ions

Track Classification: Heavy Ions