



Contribution ID: 34

Type: **not specified**

Studying collective phenomena in pp, p-Pb and Pb-Pb collisions with the ALICE experiment

Tuesday, 19 September 2017 17:20 (20 minutes)

In late 2015, the ALICE collaboration recorded data from Pb-Pb collisions at the unprecedented energy of $\sqrt{s_{NN}} = 5.02$ TeV as well as data from pp collisions at the same energy, to be used as a reference for heavy-ions. In Pb-Pb collisions a strongly coupled Quark Gluon Plasma (QGP) is produced which gives rise to collective phenomena whose signatures can be retrieved in final state hadronic observables. Recent observations in small systems, such as pp and p-Pb collisions, show remarkable similarities among these systems, which are highly suggestive of the presence of collectivity. Current research therefore tries to identify whether a unified description of the pp, p-A and A-A data can be established.

Hydrodynamic and recombination models are tested against the measured spectral shapes at low and intermediate transverse momenta. In particular, the Boltzmann-Gibbs blast-wave is a three-parameter simplified hydrodynamical model whose parameters (kinetic freeze-out temperature, average transverse velocity, exponent of the velocity profile) can be studied for various collision systems and energies.

In this talk, an overview of the new ALICE results which contribute to the understanding of collective phenomena will be presented. Pion, kaon, proton p_T -spectra and the result of a blast-wave fit are presented for pp collisions at $\sqrt{s} = 7$ TeV, Pb-Pb at $\sqrt{s_{NN}} = 2.76$ TeV, p-Pb and Pb-Pb at $\sqrt{s_{NN}} = 5.02$ TeV.

The dependence of the blast-wave model parameters on the event multiplicity is also discussed.

Primary author: RAVASENGA, Ivan (Politecnico di Torino (IT))

Co-author: ALICE COLLABORATION

Presenters: ALICE COLLABORATION; RAVASENGA, Ivan (Politecnico di Torino (IT))

Session Classification: Small systems / Azimuthal anisotropies