

ϕ meson production at forward rapidity in pp and Pb-Pb collisions with ALICE at the LHC

Thursday 13 July 2017 11:30 (20 minutes)

Quantum Chromodynamics predicts the occurrence of a phase transition from the hadronic matter to a plasma of deconfined quarks and gluons (Quark-Gluon Plasma) at extreme conditions of temperature and energy density. Ultrarelativistic heavy-ion collisions provide the means to study this phase of matter in the laboratory.

Strangeness production is a key tool to understand the properties of the medium formed in heavy-ion collisions: an enhanced production of strange particles was early proposed as one of the signatures of the QGP. The ϕ meson, due to its $s\bar{s}$ valence quark content, provides insight into strangeness production.

The ALICE experiment has measured ϕ meson production in the dimuon channel at the forward rapidity ($2.5 < y < 4$) in pp and Pb-Pb collisions at several center of mass energies.

Results in pp collisions at center of mass energies $\sqrt{s} = 5.02, 8$ and 13 TeV will be reported. They will complement the previously published results at $\sqrt{s} = 2.76$ and $\sqrt{s} = 7$ TeV, providing a solid baseline for Pb-Pb collisions. In Pb-Pb, the preliminary ϕ meson p_T spectra for different centrality classes and the yield as a function of the collision centrality in the transverse momentum range $2 < p_T < 7$ GeV/c are presented. These results are also compared with the final ones previously obtained in Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV.

List of tracks

Strangeness production at low baryon densities

Author: ALICE COLLABORATION

Presenter: DE FALCO, Alessandro (Universita e INFN, Cagliari (IT))

Session Classification: Parallel Strangeness

Track Classification: Strangeness production at low baryon densities