

Low-mass dimuon measurements in pp and Pb-Pb collisions with ALICE at the LHC

Low-mass dimuon production, including decays of light neutral mesons η , ρ , ω , ϕ , provides key information on the hot and dense state of strongly interacting matter produced in ultra-relativistic heavy-ion collisions. The proper baseline for these observations is provided by the measurements of low-mass dimuons in pp collisions, which also allows for the tuning of light particle production models in the largely unexplored forward rapidity region at the LHC energy regime.

ALICE studies low-mass dimuon production at the CERN LHC with the Muon Spectrometer covering the forward rapidity range $2.5 < y < 4$. Observations in Pb-Pb at $\sqrt{s_{NN}} = 2.76$ and 5.02 TeV allowed for the characterisation of ϕ -meson production in the transverse momentum (p_T) range $2 < p_T < 5$ GeV/c and $2 < p_T < 7$ GeV/c, respectively. The production of ϕ mesons has also been studied in pp collisions at $\sqrt{s} = 2.76, 5.02, 7, 8$ and 13 TeV, offering the unique possibility to test the energy dependence of the production cross section in the common p_T range $1.5 < p_T < 5$ GeV/c. The large statistical sample available at $\sqrt{s} = 13$ TeV also allowed for a new, dedicated study of the p_T - y dependence of the production cross section of the low-mass mesons.

Summary

Primary author: ALICE, Collaboration (alice-cc-chairs@cern.ch)

Presenter: URAS, Antonio (Centre National de la Recherche Scientifique (FR))

Session Classification: Poster Session