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

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Low-mass dimuon production, including 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 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 collisions at $\sqrt{s_{NN}} = 2.76$ and 5.02 TeV allowed for the characterisation of ϕ -meson production in the p_T range $2 < p_T < 5$ GeV/c and $2 < p_T < 7$ GeV/c, respectively, giving insight on strangeness production at forward rapidity. ϕ -meson production 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.

Content type

Experiment

Collaboration

ALICE

Centralised submission by Collaboration

Presenter name already specified

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