



Contribution ID: 202

Type: Poster

$K^{*\pm}$ production in Pb–Pb collisions with ALICE at the LHC

Wednesday 6 April 2022 18:10 (4 minutes)

Short-lived hadronic resonances are very useful to probe the late-stage evolution of ultra-relativistic heavy-ion collisions. Since their lifetimes are comparable to the hadronic phase timespan, their measured yields are modified via rescattering and regeneration processes. The suppression of the K^{*0}/K ratio in central Pb–Pb collisions compared to pp interactions already hints at the dominance of rescattering effects over regeneration effects in the hadronic phase. The mass and lifetime of $K^{*\pm}$ are comparable to those of K^{*0} . Hence, systematic measurements of K^{*0} and $K^{*\pm}$ enable us to investigate further the dynamics of the hadronic phase, to study its lifetime and to probe in-medium parton energy loss with high p_T resonances.

We report on the first measurement of $K^{*\pm}$ production in midrapidity for Pb–Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV. The results include the transverse momentum spectra, integrated yields, mean transverse momenta, particle ratios, and nuclear modification factor as a function of charged-particle multiplicity. These results will be compared with published K^{*0} measurements at the same energy.

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Session Classification: Poster Session 1 T14_1

Track Classification: Hadron production and collective dynamics