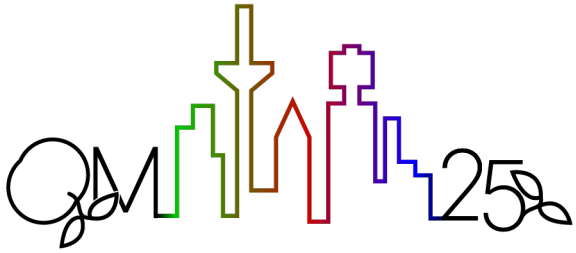

Contribution ID: **372** Type: **Poster**

Study of multiplicity-dependent ρ(770)0 production in pp collisions at 13.6 TeV with ALICE

Short-lived resonances are ideal probes to study the properties of the hadron gas phase created in heavy-ion collisions in the post-hadronization phase. Since the resonance lifetime is comparable to that of the hadron gas phase, their yields are affected by the competing rescattering and regeneration effects. These can be studied experimentally by measuring the yield ratios of resonances to the corresponding long-lived hadrons as a function of the charged-particle multiplicity, a proxy of the system size. In this context, the $\rho(770)^0$ resonance is particularly interesting due to its very short lifetime of about 1.3 fm/c for the study in small collision systems, corresponding to a very short duration of the hadron gas phase. This study serves as a fundamental reference for measurements in heavy-ion collisions. This contribution presents the study of the $\rho(770)^0$ production in pp collisions at 13.6 TeV with the ALICE detector as a function of multiplicity. The results are discussed together with existing measurements in other collision systems in the context of the state-of-the-art phenomenological models used to describe particle production at LHC energy.

Category

Experiment

Collaboration (if applicable)

ALICE

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Session Classification: Poster session 2

Track Classification: Light and strange flavor physics & nuclei