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Multiplicity dependence of strange particle production in pp collisions with the ALICE detector

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Recent measurements in high-multiplicity proton-proton (pp) and proton-lead (p-Pb) collisions show several features that are similar to those observed in heavy-ion collisions. In this respect strangeness production may provide a valuable investigative tool.

Baryon-to-meson ratios, such as Λ/K_S⁰, have been measured differentially in *p*_T and show an evolution with increasing charged particle multiplicity in small systems similar to the one observed with centrality in heavy-ion collisions, where this behaviour is interpreted to be strongly related to the hydrodynamical evolution of the system. Furthermore the production rate of strange and multi-strange hadrons relative to pions exhibits a significant increase with multiplicity in pp collisions, similarly to that observed in p-Pb. This increase is observed to be more pronounced for hadrons with a larger strangeness content.

In this talk strange (K_S⁰,Λ,Λ) and multi-strange (Ξ,Ω) hadron production measurements at mid-rapidity, in pp collisions at √s = 7 TeV, will be shown as a function of charged-particle multiplicity. Perspectives for similar studies at √s = 13 TeV will also be discussed.

Collaboration

ALICE

Primary author: FIONDA, Fiorella (Universita e INFN (IT))

Presenter: FIONDA, Fiorella (Universita e INFN (IT))

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