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Enhanced strangeness production in high-multiplicity pp collisions

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Content

The ALICE experiment at CERN was designed to study the properties of the strongly-interacting hot and dense matter created in heavy-ion collisions at LHC energies. Smaller collision systems such as proton-proton (pp) and proton-nucleus (p-Pb) provide reference samples for nucleus-nucleus collisions (Pb-Pb) and allow to unveil features attributed to the formation of a deconfined Quark-Gluon Plasma state.

The study of strangeness production as a function of charged-particle multiplicity in pp collisions is a powerful tool for understanding similarities and differences between small and large interacting systems. In this respect, one of the most intriguing effects recently observed by ALICE is the relative enhancement of the strange particle yields in high-multiplicity proton-proton collisions with respect to low-multiplicity events. In this contribution a review of the multiplicity dependence of strange and multi-strange particle production in pp collisions at 7 and 13 TeV will be presented: the comparison with results in p-Pb and Pb-Pb collisions shows remarkable similarities among systems and energies. Comparisons with the predictions from commonly used QCD-inspired models will be also reported. Finally, the extension of such measurements to very high multiplicity pp events will be discussed.

Session

Collectivity in high energy collisions

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Session Classification : Collectivity in high energy collisions: jets, flow and other aspects (I)