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Strangeness production in light-ion collisions with ALICE at the LHC

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Measurements in pp and p–A collisions have revealed that small collision systems exhibit most of the signs traditionally attributed to heavy-ion collisions, such as the smooth increase of the strange hadron yields with the collision multiplicity (strangeness enhancement). A key question is how these effects evolve with system size and whether they can be described within a unified framework.

The recently collected data by ALICE of OO collisions at $\sqrt{s_{NN}} = 5.36$ TeV provide an unprecedented opportunity to explore an intermediate-size system that naturally bridges the gap between pp/p–A and Pb–Pb collisions. In this contribution, we present results on the production of strange particles (K_S^0 , Λ , Ξ , and Ω) as a function of charged-particle multiplicity in OO collisions. This allows us to investigate strangeness enhancement across different system sizes at comparable multiplicities, providing new insights into the mechanisms of strangeness production. The experimental results are compared with model predictions from various Monte Carlo generators.

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