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Multi-strange baryon production in pp, p-Pb and Pb-Pb collisions measured with ALICE at the LHC

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Multi-strange baryons are of particular interest in the understanding of particle production mechanisms, as their high strangeness content makes them more susceptible to changes in the hadrochemistry of the colliding systems. In this talk, Ξ and Ω production rates measured with ALICE are reported as a function of p_T in proton-proton (pp), proton-lead (p-Pb) and lead-lead (Pb-Pb) collisions. Multi-strange baryons were reconstructed via the detection of their weak decay products, which were identified through their measured energy loss and momenta in the ALICE Time Projection Chamber. For p-Pb and Pb-Pb, the Ξ and Ω spectra were analysed as a function of charged particle multiplicities, which range over several orders of magnitude. In the p-Pb system in particular, it is possible to investigate a multiplicity region in which relative strangeness production changes significantly, as seen when comparing peripheral Pb-Pb to pp collisions. In order to investigate the phenomenon of strangeness enhancement, we study how the singly-strange and multi-strange baryon production relative to non-strange particles evolves with multiplicity. Finally, the results from these various colliding systems are also compared to each other as well as to Monte Carlo predictions.

On behalf of collaboration:

ALICE

Primary author: ALEXANDRE, Didier (University of Birmingham (GB))

Presenter: ALEXANDRE, Didier (University of Birmingham (GB))

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