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Exploring strangeness enhancement through strange-hadron correlation studies at ALICE

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Interesting features in the production of strange hadrons have been revealed in heavy-ion collisions. Observations include: the development, with centrality, of a peak in the Λ/K_S^0 ratio at intermediate p_T ; and the enhanced yield of strange and multi-strange baryons, compared to minimum bias pp collisions. These features have been further investigated by studying pp collisions as a function of the produced charged particle multiplicity. Both features exhibit changes in this multiplicity range with the increase in the yield of the multi-strange Ξ and Ω baryons, normalised to the pion yield, being particularly striking.

The origin of these phenomena remains an open question. Are they related to particles produced in soft interactions or is a growth hard processes, such as jets, responsible?

The ALICE experiment has extended this study to look differentially at particle production by selecting regions of events associated with hard scattering in both pp and p-Pb collisions. New measurements in this area are presented including: the measurement of strange and multi-strange particle production in pp and p-Pb collisions in and outside of jets, using the standard jet reconstruction technique; two-particle azimuthal correlations of high- p_T charged hadrons with strange and multi-strange particles; and strangeness production in defined different regions with respect to the azimuthal direction of leading particle (R_T). They indicate that soft (out of jet) processes are the dominant contribution to strange particle production.

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