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Studying (multi-)strange hadron angular correlation with associated particles and their production with event topology using the ALICE detector

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The angular correlation between (multi-)strange and associated identified hadrons is measured in pp collisions with the ALICE detector to give insight into the particle production mechanisms and balancing of quantum numbers at the microscopic level. These measurements are expected to be sensitive to whether strangeness is produced through string breaking or in a thermal production scenario. The results are compared to predictions from the string-breaking model PYTHIA 8, including tunes with baryon junctions and rope hadronisation enabled, the cluster hadronisation model HERWIG 7, and the core-corona model EPOS-LHC. In addition, the connection of strange hadron production to hard scattering processes and to the underlying event is also studied. For this purpose, the production of strange hadrons is also measured in each event in the direction of the highest- p_T particle (trigger particle), related to hard scattering processes, and in the direction transverse to it, associated with the underlying event, in pp collisions.

Authors: DE MARTIN, CHIARA; DE MARTIN, Chiara

Co-author: COLLABORATION, ALICE

Presenter: DE MARTIN, Chiara

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