Contribution ID: **188** Type: **Oral presentation**

ALICE search for the collective origin of strangeness enhancement

Thursday, 7 April 2022 17:50 (20 minutes)

One of the key challenges of hadron physics today is understanding the origin of strangeness enhancement in high-energy hadronic collisions, i.e. the increase of (multi)strange hadron yields relative to non-strange hadron yields with increasing charged-particle multiplicity. In particular, what remains unclear is the relative contribution to this phenomenon from hard and soft QCD processes and the role of initial-state effects such as effective energy. The latter is the difference between the total centre-of-mass energy and the energy of leading baryons emitted at forward/backward rapidities. The superior tracking and particle-identification capabilities of ALICE make this detector unique in measuring (multi)strange hadrons via the reconstruction of their weak decays over a wide momentum range. The effective energy is measured using zero-degree hadronic calorimeters (ZDC).

In this talk, recent results on K^0_s and Ξ production in- and out-of-jets in pp collisions at $\sqrt{s}$ = 13 TeV using the two-particle correlation method are presented. To address the role of initial and final state effects, a double differential measurement of (multi)strange hadron production as a function of multiplicity and effective energy is also presented. The results of these measurements are compared to expectations from state-of-the-art phenomenological models implemented in commonly-used Monte Carlo event generators.

Primary authors: CONFERENCE COMMITTEE CHAIRS, ALICE; DE MARTIN, Chiara (Universita e INFN Trieste (IT))

Presenter: DE MARTIN, Chiara (Universita e INFN Trieste (IT))

Session Classification: Parallel Session T14: Hadron production and collective dynamics

Track Classification: Hadron production and collective dynamics