

# 11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



Beitrag ID: 69

Typ: Talk

## Looking for collective origin of strangeness enhancement in small collision systems with ALICE at the LHC

*Dienstag, 28. März 2023 09:00 (20 Minuten)*

The main goal of the ALICE experiment is to study the physics of strongly interacting matter, including the properties of the quark-gluon plasma (QGP). The increase of relative production of strange hadrons with respect to non-strange hadrons is historically considered as one of the signatures of QGP formation during the evolution of the system created in heavy-ion collisions. Recent measurements performed in high-multiplicity proton-proton (pp) and proton-lead (p-Pb) collisions have shown features that are reminiscent of those observed in lead-lead (Pb-Pb) collisions. The microscopic origin of this phenomenon is still not fully understood: is it related to soft particle production or to hard scattering events, such as jets? To separate strange hadrons produced in jets from those produced in soft processes, the angular correlation between high- $p_T$  charged particles and strange hadrons has been exploited. The near-side jet yield and the out-of-jet yield of  $K_S^0$ ,  $\Xi$ , and  $\phi$  have been studied as a function of the multiplicity of charged particles produced in pp collisions at  $\sqrt{s} = 13$  TeV and p-Pb collisions at  $\sqrt{s_{NN}} = 5.02$  TeV. New results suggest that out-of-jet processes are the dominant contribution to strange particle production. The results of these measurements are compared to expectations from state-of-the-art phenomenological models implemented in commonly used Monte Carlo event generators.

### Experiment/Theory

ALICE

### Affiliation

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**Sitzung Einordnung:** Parallel: High-Momentum Hadrons & Correlations

**Track Klassifizierung:** High momentum hadrons and correlations