

## Strangeness in Quark Matter 2019



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# Hadrochemistry of particle production in small systems with ALICE at the LHC

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Strangeness production has long been considered a golden observable to characterize the chemical composition of the deconfined state of matter produced in heavy ion collisions. One of the key results of the LHC Run 1 was the observation of an enhanced production of strange particles in high multiplicity pp and p-Pb collisions at 7 and 5.02 TeV, respectively. In addition, the multiplicity dependent results on particle production in pp collisions allowed the discovery of collective-like behaviour in small systems at the LHC.

In order to provide further insights into the origin of these new phenomena, new measurements of the multiplicity dependence of the transverse momentum ( $p_T$ ) distributions of inclusive and identified charged particles from Run 2 at the top LHC energy will be presented. The  $p_T$  spectra are measured at mid-rapidity and over a broad transverse momentum range, providing important input to study particle production mechanisms in the soft and hard regime of QCD and to better understand the hard component of particle spectra. New results on  $\Xi$  and  $\Omega$  production in p-Pb collisions at the unprecedented center-of-mass energy of 8.16 TeV will also be presented. These results allow a connection between the lowest multiplicities probed in elementary pp collisions to the peripheral and mid-central centrality ranges probed in Pb-Pb interactions to be made. They can also help to understand the interplay between canonical suppression and strangeness enhancement.

The energy and system-type invariance of light-flavor hadron production will be discussed and an extensive comparison with statistical hadronization and QCD-inspired models will be presented.

### Collaboration name

ALICE Collaboration

### Track

Collectivity in small systems

**Primary author:** WILLSSHER, Emily Jade (University of Birmingham (GB))

**Presenter:** WILLSSHER, Emily Jade (University of Birmingham (GB))

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