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## Topological studies of light-flavor hadron production in pp, p-Pb and Pb-Pb collisions with ALICE at the LHC

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Recent results for high multiplicity pp and p-Pb collision systems have revealed that they exhibit collective-like behaviors. These were formerly thought to be achievable only in heavy-ion collisions. To understand the origins of these unexpected phenomena, event shape observables such as transverse sphericity ( $S_0$ ) and the relative transverse activity classifier ( $R_T$ ) can be exploited as a powerful tool to disentangle soft and hard particle production.

Results on the production of light flavor hadrons ( $\pi$ , K p,  $K^{*0}$ ,  $\varphi$  and  $\Xi$ ) as a function of  $S_0$  and  $R_T$  in high multiplicity pp collisions at  $\sqrt{s} = 13$  TeV measured with the ALICE detector at the LHC are presented. The evolution of particle ratios and average transverse momentum ( $\langle p_T \rangle$ ) with multiplicity,  $S_0$  and  $R_T$  is also discussed in the context of radial flow and flow-like effects. In addition, the system size dependence of charged particle production in pp, p-Pb and Pb-Pb collisions at  $\sqrt{s} = 5.02$  TeV will be presented. The evolution of the transverse momentum spectra, integrated yields and  $\langle p_T \rangle$  in different topological regions as a function of  $R_T$  are presented. These are compared with event generators such as EPOS-LHC and PYTHIA8 (ANGANTYR). Finally, within the same approach, we present a search for jet quenching behavior in small collision systems.

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