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Charged particle production as a function of underlying event-activity and search for jet-like modifications in small systems with ALICE

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It is well-established that high-multiplicity pp and p–Pb collisions exhibit a collective-like behaviour and signatures, like the strangeness enhancement and the ridge behaviors, that were commonly attributed to the formation of the Quark-Gluon Plasma. In this contribution, the similarity between small and large collision systems will be explored by studying the underlying event (UE) properties, such as the transverse region multiplicity, $N_{\rm T}$, and the relative self-normalized observable, $R_{\rm T}$. By selecting on $R_{\rm T}$ and on the topological region, different microscopic processes contributing to the inclusive particle production can be explored. Final measurements of charged particle production as a function of $N_{\rm T}$ in pp, p-Pb and Pb-Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV will be presented in the toward, away and transverse regions. In addition, the UE contributions measured in the transverse region can be subtracted from the toward and the away regions to search for jet-like modifications in small collision systems. The jet-like signals are studied as a function of $N_{\rm T}$. Finally, the results will be compared with predictions from QCD-inspired Monte Carlo event generators such as PYTHIA and EPOS LHC.

Primary author: TRIPATHY, Sushanta (INFN, Bologna (IT))Presenter: TRIPATHY, Sushanta (INFN, Bologna (IT))Session Classification: Plasma di quark e gluoni II