

# Event topology dependence of the event-by-event mean $p_T$ fluctuations in high multiplicity pp collisions at 13 TeV

Event-by-event fluctuations contain information on the dynamics and correlations in pp and heavy-ion collisions. In nuclear collisions event-by-event fluctuations of the mean transverse momentum ( $p_T$ ) are used to study collective phenomena. To contribute to the understanding of the collective effects in pp collisions which have been recently shown by experiments at the LHC, and to obtain more details about the origin of the non-statistical fluctuations, in this work we report the multiplicity dependence of the  $\langle p_T \rangle$  event-by-event fluctuations in pp collisions at  $\sqrt{s} = 13$  TeV using the ALICE detector. The obtained results for charged particles are consistent with the previous published ALICE results at lower energies. To understand the origin of the  $\langle p_T \rangle$  fluctuations we have implemented a selection based on transverse sphericity to disentangle the contribution from isotropic and pencil-like events. The results are compared with PYTHIA 8 and EPOS 3.

## Preferred Track

Correlations and Fluctuations

## Collaboration

ALICE

**Primary author:** BAUTISTA GUZMAN, Irais (Autonomous University of Puebla (MX))

**Presenter:** BAUTISTA GUZMAN, Irais (Autonomous University of Puebla (MX))

**Session Classification:** Poster Session