## WPCF 2024 - 17th Workshop on Particle Correlations and Femtoscopy



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## Event-by-event mean transverse momentum fluctuations in pp collisions at $\sqrt{s}$ = 13 TeV with ALICE

Event-by-event fluctuations of mean transverse momentum  $(p_{\rm T})$  of relativistic charged particles are studied in terms of two-particle correlator,  $\sqrt{C_m}/M(p_T)_m$ . High-multiplicity triggered pp data at  $\sqrt{s}$  = 13 TeV, collected by the ALICE detector, are being analyzed for this intended purpose. The main motivation behind such studies is to search for the fluctuations of dynamical origin which can be associated to the QGP droplet formation in small systems, like pp, the traces of which have been reported in earlier investigations. The values of the correlator are observed to decrease with increasing charged particle density and follow a power-law behavior similar to those observed for small and large systems at lower energies. In order to look for effects of thermal (jets/minijets) and non-thermal (radial flow), dependence of  $\sqrt{C_m}/M(p_T)_m$  on the charged particle multiplicities is examined in  $p_{\rm T}$  windows of varying widths and positions. The findings based on the data are also compared with the predictions of various Monte Carlo models, e.g., PYTHIA and EPOS.

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