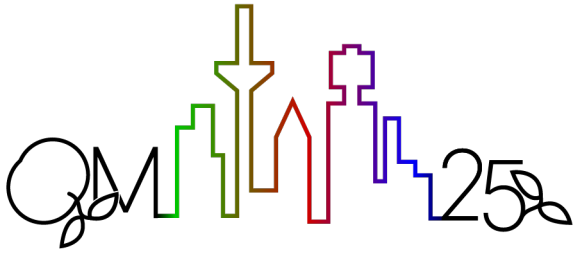

Contribution ID: **482** Type: **Poster**

First multiplicity and m_{T} differential measurement of the common particle-emitting source using pp collisions at 13.6 TeV with ALICE

The large minimum bias (MB) dataset of pp collisions at
$\sqrt{s}$ = 13.6 TeV collected by ALICE during Run 3 provides an unprecedented opportunity to measure, for the first time, the transverse mass (m_{T}) scaling of the femtoscopic source of proton–proton pairs as a function of the event multiplicity.
A common source size dependence on m_{T} , typically attributed to collective phenomena, was previously measured by ALICE in Run 2 using various baryon–baryon, baryon–meson, and meson meson pairs in high-multiplicity pp collisions. Now, with Run 3 data, the study is extended, reaching the low multiplicity regime. The resonance source model, which accounts for the effects of strong decaying resonances, allows comparison of source size dependence on multiplicity in pp collisions with results from larger systems.
These results provide a new framework for exploring radial flow effects on source scaling and offer a benchmark for theoretical models on collective phenomena in small colliding systems. They are also essential for coalescence models addressing nuclear cluster productio and serve as a crucial reference, by fixing the emission source, for high-precision studies of interaction potentials in hadron–hadron pairs with strangeness and charm using ALICE Run 3 data.

Category

Experiment

Collaboration (if applicable)

ALICE

Authors: COLLABORATION, ALICE; RIEDEL, Anton Albert (Technische Universitaet Muenchen (DE))

Presenter: RIEDEL, Anton Albert (Technische Universitaet Muenchen (DE))

Session Classification: Poster session 2

Track Classification: Collective dynamics & small systems