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Searching for viscous effects in small systems with ALICE

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Two-particle differential correlators of particle numbers (R_2) and particle transverse momenta (P_2 and G_2), recently measured in Pb-Pb collisions, emerged as powerful tools to gain insights into particle production mechanisms and infer transport properties such as the ratio of shear viscosity to entropy density of the medium created in Pb-Pb collisions. In this talk, recent ALICE measurements of these correlators in pp collisions at $\sqrt{s}$ = 7 and 13 TeV and p-Pb collisions at $\sqrt{s_{\rm NN}}$ = 5.02 TeV are presented to provide baseline references to measurements in Pb-Pb collisions and seek evidence, in particular, for viscous effects expected to arise in fluid-like systems produced in these collisions. Additionally, these measurements in small systems also probe particle correlations associated with jets as well as low-$p_{\rm T}$ processes and their change with system size. The strength and shape of the correlators are studied as a function of produced particle multiplicity to identify evidence for longitudinal broadening that might reveal the presence of viscous effects in these smaller systems. The measured correlators and their evolution from pp and p-Pb to Pb-Pb are additionally compared to predictions from Monte Carlo models, and the potential presence of viscous effects is discussed.

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