

International Conference on Physics and Astrophysics of Quark Gluon Plasma (ICPAQGP-2023)



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Measurement of collective dynamics in small and large systems with the ATLAS detector

This talk presents the latest ATLAS measurements of collective phenomena in various collision systems, including pp collisions at 13 TeV, Xe+Xe collisions at 5.44 TeV, and Pb+Pb collisions at 5.02 TeV. These include measurement of v_n -[pT] correlations in Xe+Xe and Pb+Pb, which carry important information about the initial-state geometry of the Quark-Gluon Plasma and can potentially shed light on any quadrupole deformation in the Xe nucleus. This talk will present measurements of flow decorrelations differential in rapidity probing the longitudinal structure of the colliding system and study of the sensitivity of collective behavior in pp collisions to the presence of jets, which seek to distinguish the role that semi-hard processes play in the origin of these phenomena. Furthermore, the measurement of two-particle long-range azimuthal correlations in photo-nuclear Pb+Pb collisions will be discussed. This study can shed light on the QCD dynamics of the novel, extremely asymmetric colliding systems.

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Session Classification : Tea Break + Poster Session I (abstract ids mentioned in the overview page)

Track Classification : Collectivity in small and large systems