



Contribution ID: 246

Type: **Poster**

## Differential studies of multi-harmonic $v_n$ correlations in heavy-ion collisions with ALICE

*Tuesday 5 September 2023 17:30 (2h 10m)*

Results from heavy-ion collisions confirmed the scenario in which the deconfined state of nuclear matter, dubbed the quark–gluon plasma (QGP), undergoes a collective expansion. Collective anisotropic flow, quantified with Fourier harmonics of azimuthal distribution of particles,  $v_n$ , is one of the most sensitive experimental probes to constrain QGP properties. Recently developed multi-harmonic flow observables, Symmetric Cumulants (SC) and Asymmetric Cumulants (AC) of  $v_n$  amplitudes, provide new and independent information from their correlations and fluctuations, since they satisfy all fundamental properties of multivariate cumulants in a strict mathematical sense.

In this contribution, the first differential measurements of SC and AC observables in Pb–Pb collisions measured with ALICE as a function of kinematic variables are presented. The analysis is performed in parallel using the legacy code and the newly deployed O2 framework for Run 3 analyses in ALICE.

### Category

Experiment

### Collaboration (if applicable)

ALICE Collaboration

**Primary author:** BILANDZIC, Ante (Technische Universitaet Muenchen (DE))

**Presenter:** BILANDZIC, Ante (Technische Universitaet Muenchen (DE))

**Session Classification:** Poster Session

**Track Classification:** Collective Dynamics