



Contribution ID: 11

Type: **Poster**

## Asymmetric longitudinal flow decorrelations in proton-nucleus collisions

*Tuesday 14 June 2022 17:40 (1 minute)*

We perform the first study on asymmetric longitudinal decorrelations of elliptic, triangular and quadrangular flows in proton-nucleus collisions at the LHC and RHIC energies. To measure the longitudinal flow decorrelations for asymmetric collision systems, we propose a new set of rapidity-asymmetric flow decorrelation functions. Our event-by-event hydrodynamic calculations show that the flow decorrelations in proton-going direction are larger than those in nucleus-going direction. We also find that proton-nucleus collisions at RHIC have larger longitudinal flow decorrelation effects than those at the LHC. Our study opens a new window to probe the longitudinal properties and the origin of flows in relativistic nuclear collisions.

### Present via

Online

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**Session Classification:** Poster

**Track Classification:** Bulk matter phenomena, QCD phase diagram, and Critical point