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Measurements of azimuthal anisotropy of charged particles in Pb+Pb collisions with the ATLAS detector

Saturday 14 December 2024 17:45 (15 minutes)

The azimuthal anisotropy of the final-state particles in nuclear-nuclear collisions arises from the geometry of the quark-gluon plasma fireball. In this talk, I will present flow coefficients v_2 and v_3 of charged particles measured in the Pb+Pb collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ TeV recorded by the ATLAS experiment in 2018. This measurement uses the scalar product and multi-particle cumulant methods to probe the momentum dependency of the flow coefficients. Thanks to the high integrated luminosity, the data allows us to explore the high-p_{T} regime.
Moreover, I will discuss a method to reconstruct charged particles with low p_{T} in high-multiplicity events, enabling future measurement of the flow coefficients to cover an even broader range of p_{T}.

Author: BALEK, Petr (AGH University of Krakow (PL))

Presenter: BALEK, Petr (AGH University of Krakow (PL))

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