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Type: Talk

Event-by-event fluctuations, elliptic and triangular eccentricities, and novel A-dependence of anisotropic flow harmonics (in very central A+A collisions)

Friday, 27 August 2021 10:00 (30 minutes)

Elliptic ε_2 and triangular ε_3 eccentricities arising in initial state of relativistic heavy-ion collisions are studied within the framework of a geometrical model with event-by-event fluctuations. Elliptic eccentricity is shown to be determined mainly by the average collision geometry, whereas the triangular one is related merely to the fluctuations. Assuming the linear dependence of the second v_2 , and third, v_3 , harmonics of anisotropic flow on ε_2 and ε_3 , respectively, the model provides a fair description of the ALICE results for Pb+Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV. Similar to spatial eccentricities, elliptic flow weakly depends on the fluctuations everywhere but in very central collisions, while triangular flow is mostly determined by the event-by-event fluctuations. For the collisions with centrality 0-2% a novel scaling dependence for the magnitudes of the flow harmonics v_n on atomic number A , $v_n \propto A^{-1/3}$, is predicted. This prediction agrees well with the available experimental data.

Is this abstract from experiment?

No

Name of experiment and experimental site

N/A

Is the speaker for that presentation defined?

Yes

Details

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Internet talk

Maybe

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