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Type: **Parallel Talk**

Centrality and impact parameter in nucleus-nucleus collisions

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In heavy-ion collision experiments, the centrality of a collision is defined according to the transverse energy or number of tracks observed in a given detector. We propose a procedure to relate this experiment-defined centrality to the true centrality of the collision, defined according to impact parameter, in a way which does not need require the introduction of a Glauber model or the concept of participant nucleons. Our method allows to accurately reconstruct the probability distribution of impact parameter at a fixed value of the experiment-defined centrality, up to 5%. We argue that in central collisions, the fluctuations of impact parameter have specific signatures in the centrality dependence of the cumulants of elliptic flow, $v_2\{2\}$ and $v_2\{4\}$, and that these effects are clearly visible in experimental data.

Extension to proton-nucleus collisions is discussed (work in progress).

[Based on arXiv:1708.00081]

Content type

Theory

Collaboration

Centralised submission by Collaboration

Presenter name already specified

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