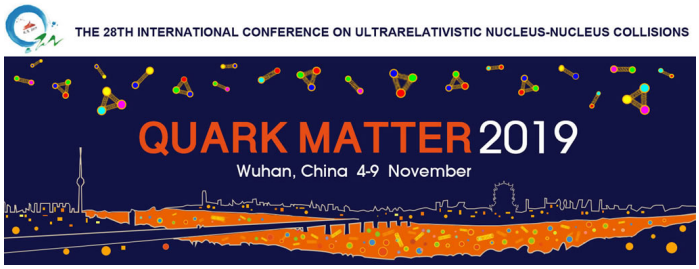

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Using Event Shape Engineering to study anisotropic flow of inclusive and identified particles in Pb-Pb collisions with ALICE

Monday 4 November 2019 17:40 (20 minutes)

Heavy-ion collisions produce asymmetric pressure gradients which convert via interactions the initial spatial asymmetry into an anisotropy in final state momentum space, a phenomenon referred to as anisotropic flow. Anisotropic flow is characterized using the harmonic coefficients v_{n} in a Fourier decomposition of the azimuthal distribution of produced particles relative to the symmetry plane in a collision. It is found that flow fluctuates event-by-event due to fluctuations in the initial geometry, which allows for an efficient selection of events that correspond to a specific initial geometry. This technique, called Event Shape Engineering, was applied to select events within the same centrality but having very different values of the elliptic (v_2) and triangular (v_3) flow coefficients. For those events, we present results on centrality, transverse momentum (p_{T})nbsp;and event-shape dependence of anisotropic flow for inclusive and identified ($\pi^{\pm}$, $K^{\pm}$, $\mathrm{p}+\overline{\mathrm{p}}$, $\Lambda+\overline{\Lambda}$, $\mathrm{K}^0_{\mathrm{S}}$, $\Xi^- + \overline{\Xi}^+$, and $\Omega^- + \overline{\Omega}^+$) particles in Pb–Pb collisions at $\sqrt{s_{\mathrm{NN}}} = 5.02$ TeV recorded by the ALICE detector in 2015 and 2018. We also investigate the correlation between v_2 of inclusive and identified particles averaged over low and high p_{T} ranges.

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