

Centrality and collision symmetry plane determination in ALICE at the LHC

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Investigation of physical phenomena in heavy-ion collisions requires knowledge about collision geometry. It is characterized by the energy distribution in the overlap region of the colliding nuclei. Both the signal from particles produced around mid-rapidity, and the energy of the spectator nucleons can be used to estimate the initial geometry. Due to the pressure gradients during the system evolution, the spatial anisotropy of initial state geometry is converted to an anisotropy in the momentum space, which can be estimated via measured azimuthal distributions. We study the performance of the centrality and the symmetry plane determination for different flow harmonics using the multiplicity around mid-rapidity or the forward nucleon energy measured in various detectors by the ALICE experiment at LHC

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