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(Anti-)deuteron production and anisotropic flow measured with ALICE at the LHC

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The high abundance of (anti-)deuterons in the statistics gathered in run 1 of the LHC and the excellent performance of the ALICE setup allow for the simultaneous measurement of the elliptic flow and the deuteron production rates with a large transverse momentum (p_{T}) reach.
The (anti-) deuterons are identified using the specific energy loss in the time projection chamber and the velocity information in the time-of-flight detector. For nuclei of higher energies, the High Momentum Particle IDentification (HMPID), a ring-imaging Cherenkov detector, is also utilized. The elliptic flow of (anti-)deuterons could provide insight into the production mechanisms of particles in heavy-ion collisions. While one of the approaches to describe the elliptic flow of hadrons and light nuclei, is given by quark coalescence, the production of light nuclei is also depicted as a coalscence of nucleons, i.e. hadron coalescence. Differences should be visible for those two approaches when the elliptic flow is measured simultaneously with the p_{T} spectra, especially when they are scaled by the number of nucleons and quarks. The results are compared to expectations from coalescence and hydrodynamic models which aim at describing both the p_{T}-spectra and the elliptic flow.

On behalf of collaboration:

ALICE

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