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Production of light (anti-)(hyper-)nuclei at LHC energies with ALICE

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The ALICE experiment has measured a variety of (anti-)(hyper-)nuclei produced in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV and at 2.76 TeV. In addition, a large sample of high-quality data was recorded in pp collisions at $\sqrt{s} = 5.02, 7$ and 13 TeV and in p-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV. These data are used to study the production of (anti-)deuteron, (anti-) ^3He , (anti-) ^4He and (anti-)hypertriton.

The identification of these (anti-)(hyper-)nuclei is based on the energy loss measurements in the Time Projection Chamber and the velocity measurements in the Time-Of-Flight detector. In addition, the Inner Tracking System is used to distinguish secondary vertices originating from weak decays away from the primary vertex. An interesting collection of results on deuteron production as a function of multiplicity in pp, p-Pb and Pb-Pb collisions will be presented, as well as the measurement of ^3He in p-Pb and Pb-Pb collisions. Special emphasis will be put on new results on the production and lifetime of the hypertriton.

The large variety of measurements at different energies and system sizes allows us to constrain the models of the production mechanism of light flavour baryon clusters, in particular those based on coalescence and the statistical hadronisation approaches.

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