

Production of nuclei and anti-nuclei in pp and Pb-Pb collisions with ALICE at the LHC

We present the first results on the production of nuclei and anti-nuclei such as (anti)deuterons, (anti)tritons, (anti) ^3He and (anti) ^4He in pp collisions at $\sqrt{s} = 7$ TeV and Pb-Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV. These particles are identified using their energy loss (dE/dx) information in the Time Projection Chamber of the ALICE experiment. The Inner Tracking System gives a precise determination of the event vertex, by which primary and secondary particles are separated. The high statistics of over 350 M events for pp and 16 M events for Pb-Pb collisions give a significant number of light nuclei and anti-nuclei (Pb-Pb Collisions: anti-deuterons $\sim 30,000$ and anti-alpha ~ 4).

The study of these particles will help to understand their production mechanism. Various particle ratios obtained from these collisions and their comparison with different predictions from statistical and coalescence models will also be discussed.

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