

Investigating the system size dependence of hypernuclei production with $A < 5$ using the ALICE detector

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The production of (anti)hypernuclei is among the most promising probes for studying the production mechanism of light nuclei in high-energy hadronic collisions. According to coalescence, the production of ${}^3\text{H}$, ${}^4\text{H}$, and ${}^4\text{He}$ in small colliding systems (pp and p-Pb) is extremely sensitive to their internal wave function, while in the Statistical Hadronisation Models (SHMs) the nuclear structure does not enter explicitly in the prediction of the yields.

In this contribution, the production measurements of ${}^3\text{H}$, ${}^4\text{H}$, and ${}^4\text{He}$ from pp to the most central Pb-Pb collisions are presented. The results are based on the data samples collected by ALICE during the LHC Run 2 and Run 3. For the ${}^3\text{H}$, in addition, an innovative method to extract its properties starting from the system size dependency of its production yield will also be presented.

Auteur principal: WANG, Yuanzhe

Co-auteur: COLLABORATION, ALICE

Orateur: WANG, Yuanzhe

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