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Measurement of He^3 and hypertriton flow in Pb–Pb collisions at $\sqrt{s_{\text{NN}}} = 5.36 \text{ TeV}$ with ALICE

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Among the various light-flavoured species produced in heavy-ion collisions, light (anti)nuclei present a unique challenge to hadronization models due to their small binding energies compared to the chemical freeze-out temperature of the system. The statistical hadronization model describes their production as part of the same thermal framework that successfully reproduces the yields of all light-flavoured hadrons. In contrast, coalescence models assume that nuclear clusters form from nearby nucleons being close in phase space. Recent measurements of the absolute yields of A=3 (hyper)nuclei in Pb–Pb collisions by the ALICE Collaboration show a slight preference for the coalescence picture, although no definitive conclusion has been reached, motivating further investigations of the production mechanism. In this contribution, the ALICE Collaboration presents measurements of the elliptic flow of ${}^3\text{He}$ and ${}^3\text{H}$. This observable, which quantifies the transverse-momentum anisotropy arising from the initial collision geometry, provides additional means to constrain models of (hyper)nuclear formation. The results, obtained from Pb–Pb collisions at 5.36 TeV collected during Run 3 of the LHC, are compared with state-of-the-art hydrodynamical calculations, also including nuclear coalescence effects in the final state, providing new insights into the production of loosely bound states in heavy-ion collisions.

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