

# Strangeness in Quark Matter 2019



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## Testing coalescence and thermal models with the production measurement of light (anti-)nuclei as function of collision system size with ALICE at the LHC

*Tuesday 11 June 2019 16:30 (20 minutes)*

The high energy pp, p-Pb, and Pb-Pb collisions at the LHC offer a unique tool to study the production of light (anti-)nuclei. The study of the production yield of (anti-)nuclei in heavy-ion collisions at the LHC energy probes the late stages in the evolution of the hot, dense nuclear matter created in the collision and serves as baseline for the search of exotic multi-baryon states.

The same measurements performed in smaller collision systems are crucial to understand how the particle production mechanism evolves going from small to large systems. Thanks to its excellent particle identification and tracking capabilities, the ALICE detector allows for the measurement of deuterons, tritons,  $^3\text{He}$ ,  $^4\text{He}$  and their corresponding anti-nuclei.

Results on the production yields of light (anti-)nuclei in pp, p-Pb, and Pb-Pb collisions at energies going from 5.02 TeV to 13 TeV center-of-mass energies will be presented. A critical comparison of the experimental results with the predictions of statistical (thermal) model and baryon coalescence approach will be given to provide insight into the production mechanisms of light anti-nuclei in ultra-relativistic collisions.

### Collaboration name

ALICE Collaboration

### Track

Hadronisation and coalescence

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