

XVth Quark Confinement and the Hadron Spectrum



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ALICE explores strangeness and nucleosynthesis in hadronic collisions

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The ALICE experiment at the LHC has extensively studied the production of light flavour particles from small to large hadronic collision systems. In particular, ALICE measured the production of rare probes, such as strange and multistrange hadrons, light (anti-)nuclei, such as (anti-)deuterons, (anti-)triton, (anti-)helium, together with their strange counterparts, i.e. (anti-)hyper-nuclei.

Studying strangeness hadronization and (anti)nucleosynthesis in hadronic and heavy-ion collisions is crucial to shed light on differences and similarities between small and large collision systems. In addition, understanding the production mechanisms of these particles has direct applications in cosmic ray physics, particularly for indirect dark matter searches in space.

This talk will present an overview of recent ALICE measurements in the light flavour sector in pp and AA collisions. These measurements address several open points, including the continuous enhancement of strange to non-strange particle production with the event multiplicity observed from small to large collision systems at the LHC and the different production scenarios for light nuclei and hyper-nuclei in hadronic collisions, such as thermal statistical production or coalescence of nucleons. The experimental results will also be compared with predictions from state-of-the-art theoretical models.

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