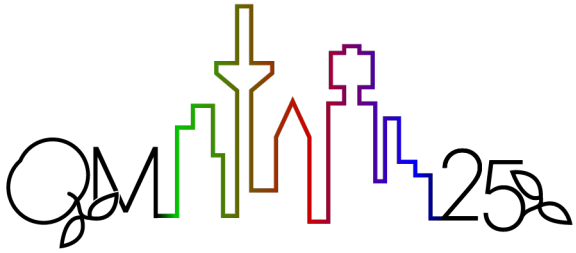

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Strangeness production in γ-Pb collisions as a new probe of cold nuclear matter effects with ALICE

The improved read-out system implemented in ALICE in Run 3 opens the possibility to study photonuclear production of strange particles in a new and unique energy range. The study of strange hadrons across various collision systems and sizes has received renewed interest, particularly in understanding hadronization models. Systematic studies of baryons with varying strangeness content has served to distinguish cold nuclear matter effects from those associated with the quark–gluon plasma. Photoproduction of strangeness on proton targets has been studied at HERA, including measurements of non-diffractive $\rho^0(770)$, $K^*(892)$, and $\varphi(1020)$ mesons at an average photon-proton center-of-mass energy of 210 GeV. By analyzing data from inelastic photonuclear reactions in Run 3, ALICE can probe even higher energies with nuclear targets and thereby provide new constraints on cold nuclear matter effects in heavy-ion collisions. In this talk, we will present the first studies on the transverse momentum and rapidity dependence of strange hadrons in inelastic photonuclear interactions. The data will be compared to previous experimental results and theoretical predictions.

Category

Experiment

Collaboration (if applicable)

ALICE

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