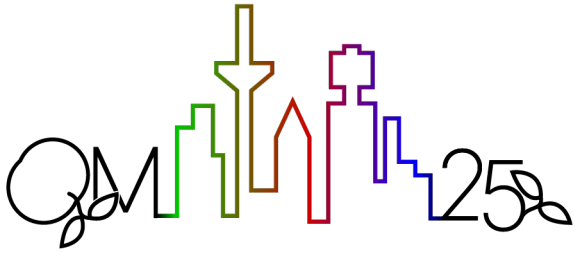

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Study of Hypernuclei Production Mechanisms and Formation Regions with HADES

Tuesday 8 April 2025 16:30 (20 minutes)

In this report, we present measurements of ${}^{3}_{\Lambda}H$ and ${}^{4}_{\Lambda}H$ in Ag+Ag collisions at $\sqrt{s_{NN}}$ = 2.55 GeV, conducted with the HADES experiment at GSI. While at RHIC and LHC energies hypernuclei production is typically discussed with a focus on two scenarios, statistical production in full equilibrium versus production via coalescence, at SIS energies, the spatial region of hypernuclei formation is also considered, distinguishing between production in the participant zone and formation in the spectator matter fragmentation region.
We address both of these aspects by performing a multi-differential analysis of the kinematic distributions of hypernuclei, hyperons, and light nuclei. These studies provide crucial insights into the dynamics of nuclear matter and the interactions between hyperons and nucleons in a dense, strongly interacting medium, enhancing our understanding of hypernuclei production mechanisms in low-energy heavy-ion collisions.

Category

Experiment

Collaboration (if applicable)

The HADES Collaboration

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