

## Overview of hypernuclei measurements at the LHC

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### Content

The extreme energy densities reached in heavy-ion collisions at the LHC lead to an abundant production of nuclei and antinuclei. Of particular interest among these are the light (anti-)hypernuclei, as the study of their internal structure provides a direct probe of the strong interaction between hyperons and nucleons. This talk is focused on the production and properties of light hypernuclei with mass number  $A < 5$  at the LHC, including recent results from both Run 2 and Run 3, with contributions from both ALICE and LHCb. The use of large datasets and advanced reconstruction techniques, such as machine learning, has enabled increasingly precise measurements of key observables characterizing these loosely bound systems. In addition to reviewing the current experimental landscape, the talk will also explore future directions for hypernuclei studies at the LHC, including searches for  $\Sigma$ ,  $\Xi$ , and  $\Omega$  hypernuclei.

**Field of Research:** Hypernuclei in heavy ion collisions / Future experiments and facilities

**Experiment / Theory:** Experiment

**Contribution Type:** Invited talk