

Feasibility studies of multi-charm baryons in perspective of the ALICE 3 upgrade

Friday, November 5, 2021 2:00 PM (20 minutes)

Measurements of charm hadrons in pp collisions typically provide insights into the production process of charm in the initial scattering, while those measurements in Pb-Pb collisions aim to understand the role of charm in the equilibration process of the hot and dense medium. Especially states of multi-charm baryons are expected to offer a unique sensitivity to these phenomena, but so far, extensive studies by current experiments are not available.

The upgrade strategy for a future heavy-ion experiment called “ALICE 3” emphasizes an excellent tracking performance as well as a large acceptance and will result in a layout which offers the possibility to implement a new approach in the reconstruction of particles called strangeness-tracking. Its physics program includes the study of multi-charm baryons and the feasibility of such a measurement is studied in simulations, which indicate that a significant measurement of the Ξ_{cc}^{++} and Ω_{cc}^{+} yield in both pp and Pb-Pb collisions is possible.

Primary author: HOHLWEGER, Bernhard

Presenter: HOHLWEGER, Bernhard

Session Classification: Parallel 2A