

12th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions

Contribution ID: 85

Type: **Oral presentation**

Quarkonium polarization in hadronic collisions with ALICE

Tuesday 24 September 2024 11:30 (20 minutes)

Polarization is a key observable to study the quarkonium production mechanism in elementary hadronic collisions. Its very small value measured at the LHC challenges the commonly-used theoretical models and it still represents a major standing issue in the field. In nuclear collisions, heavy quarks are produced at the initial stage collisions, on a time scale shorter than the QGP formation time, and they are sensitive to the large initial magnetic field and angular momentum of the medium produced in non-central events. We will present the measurements of quarkonium polarization in pp collisions at 13 TeV and in Pb-Pb collisions at 5.02 TeV, exploiting the large data samples collected by the ALICE Collaboration in LHC Run 2. Results will be compared with existing theoretical models and with recent results from the heavy-flavor sector. In addition, preliminary results from LHC Run 3 will be discussed.

Category

Experiment

Collaboration

ALICE

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Session Classification: Parallel 15: heavy quarks, spin polarization

Track Classification: 3. Heavy quarks and quarkonia