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Measurement of ω meson production in pp and p-Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV with ALICE

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The ALICE experiment at the LHC investigates the properties of the hot and dense nuclear matter created in heavy-ion collisions. By comparing the particle production in pp and p-Pb collisions, possible nuclear initial state effects can be isolated. Measurements of the ω meson p_{T} -spectra in pp and p-Pb collisions not only allow for a determination of the nuclear modification factor R_{pA} , but also provide insights into the fragmentation process and serve as vital input for direct photon cocktail simulations.

The ω mesons can be reconstructed in ALICE via their primary decay channel into three pions ($\omega \rightarrow \pi^+ \pi^- \pi^0$). While the two charged pions are being directly identified by the tracking detectors, i.e. the Time Projection Chamber and the Inner Tracking System, the π^0 is reconstructed from its two decay photons. These photons can either be detected in the calorimeters or via tracks in case they convert to an electron-positron pair in the detector material.

In this poster, the measurement of the ω meson production in pp and p-Pb collisions at $\sqrt{s_{\text{NN}}} = 5.02$ TeV will be presented. This includes the signal extraction and various corrections of the ω meson yields, as well as comparisons to theory calculations.

Experiment/Theory

ALICE

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