Beitrag ID: **84** Typ: **Poster**

First results of dielectron analyses with ALICE in Run 3

Dienstag, 28. März 2023 18:15 (2 Stunden)

The ALICE experiment has been upgraded over the last years during the LHC Long Shutdown 2.
With the new and upgraded detectors ALICE is now capable of reading out the data of the collisions in a continuous way. With a data acquisition rate 100 times larger than before, an integrated luminosity of more than 10 nb^{-1} is expected to be collected for Pb–Pb collisions during the Run 3 (2022-2025) and Run 4 (2029-2032) data taking periods. In these heavy-ion collisions, we produce a quark-gluon plasma which radiates virtual thermal photons which mainly decay into dielectrons (electron-positron pairs).
Since dielectrons do not interact strongly, they are excellent probes of the hot, strongly-interacting matter produced in heavy-ion collisions. Not only the improved readout of the detectors but also the reduced material budget, as well as the improved pointing resolution of the detectors, are crucial for the dielectron analysis. They will help controlling the background from photon conversions and heavy-flavor hadron decays within the dielectron spectra.

This poster will give an overview of the first performance studies for dielectron analyses with the ALICE experiment based on Run 3 data. It will summarize the techniques used to track, identify and select electrons and positrons. Furthermore, first results of the dielectron spectra and their corresponding signal-to-background ratios and significances will be presented together with a comparison to the results in Run 2.

Experiment/Theory

ALICE

Affiliation

Goethe University Frankfurt am Main

Hauptautor: EISENHUT, Florian

Vortragende(r): EISENHUT, Florian

Sitzung Einordnung: Poster Session

Track Klassifizierung: Electromagnetic and electroweak probes