

# 11th International Conference on Hard and Electromagnetic Probes of High-Energy Nuclear Collisions



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Typ: Poster

## Measurement of $\omega$ mesons in pp collisions in $\sqrt{s} = 13$ TeV at the LHC with ALICE

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

Measurements of neutral mesons in small collision systems can serve as a baseline to understand modifications in heavy-ion collisions, where a QGP is formed.

These measurements can also be used to test pQCD predictions and to constrain fragmentation functions as well as parton distribution functions.

Furthermore, a precise knowledge of the  $\omega$ -meson production improves the measurement of direct photons, as photons produced in  $\omega$  meson decays represent the third largest contribution of decay photon background.

This poster presents the invariant cross section of the  $\omega$ -meson in pp collisions at a center-of-mass energy of  $\sqrt{s} = 13$  TeV measured by ALICE via its dominant decay channel  $\omega \rightarrow \pi^+ \pi^- \pi^0$ .

While charged pions can directly be measured by the ALICE central barrel tracking detectors, neutral pions are reconstructed using their decay channel into two photons.

This reconstruction is realized with several complementary methods using the ALICE calorimeters as well as the central barrel tracking detectors.

The combined result covers an unprecedented  $p_T$  range with competitive statistical and systematic uncertainties.

### Experiment/Theory

ALICE

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**Track Klassifizierung:** Electromagnetic and electroweak probes