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# Light neutral meson production at the LHC measured by ALICE

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We review production of light neutral mesons, neutral pions and eta mesons, measured in pp, pA and AA collisions at LHC energies. Neutral meson production provides exploration of various physics topics: In pp collisions one can test pQCD predictions, study structure function in proton and fragmentation functions, and build a reference for pA and AA collisions; In pA collisions, it enables to study cold nuclear matter effects; In AA collisions, high transverse momentum neutral mesons give insights of the parton energy loss in hot quark-gluon plasma. Furthermore, these two mesons are the dominant source of decay photons which need to be precisely dertemined in order to measure direct photons.
In ALICE, neutral mesons are reconstructed in the two-photon decay channel. Photons can be reconstructed via several methods, using electromagnetic calorimeters and utilizing dielectrons from photon conversion in a detector material. This allows to provide spectra in a very wide transverse momenta range and cross check of results among them. In this talk, experimental results on the light neutral meson production in pp, p–Pb and Pb–Pb collisions at LHC energies will be presented.

## Summary

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