

## Heavy Ion Collisions in the LHC Era



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# Heavy flavour and quarkonium measurements in Pb–Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV with ALICE

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The LHC heavy ion physics program aims at investigating the properties of strongly-interacting matter in extreme conditions of temperature and energy density where the formation of the Quark Gluon Plasma (QGP) is expected. In high-energy heavy ion collisions, heavy quarks and quarkonium states are regarded as efficient probes of the properties of the QGP as they are created on a very short time scale in initial hard scattering processes.

ALICE, the only detector designed and optimized for heavy ion physics at the LHC, measures open heavy flavours and quarkonia at mid-rapidity through the semi-electronic channel/dielectron decay channels and at forward rapidity through the semi-muonic/dimuon decay channels. In addition, charmed mesons are also detected at mid-rapidity via their hadronic decay channel.

After a short description of the experiment, the latest results on open heavy flavour and quarkonium nuclear modification and elliptic flow in Pb–Pb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV will be presented.

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