

D mesons suppression in Pb–Pb collisions at $\sqrt{s_{NN}}=2.76$ TeV measured by ALICE

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The production of the prompt charm mesons D^0 , D^+ , D^{*+} , and their antiparticles, in Pb–Pb collisions at the LHC, at a centre-of-mass energy $\sqrt{s_{NN}} = 2.76$ TeV per nucleon–nucleon collision, has been measured with the ALICE detector. The p_t -differential production yields in the range $2 < p_t < 16$ GeV/c at central rapidity, $|y| < 0.5$, were used to calculate the nuclear modification factor RAA with respect to a proton–proton reference obtained from the cross section measured at $\sqrt{s} = 7$ TeV and scaled to $\sqrt{s} = 2.76$ TeV. For the three meson species, RAA shows a suppression of a factor 3–4, for transverse momenta larger than 5 GeV/c in the 20% most central collisions. The suppression is reduced for peripheral collisions. Prospects for extending these measurements using the Pb–Pb data collected during the 2011 data taking period will also be discussed.

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