

Heavy quark studies in single-muon measurements from heavy ion collisions in ATLAS

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Heavy quarks are very important probes to study the hot, dense medium produced in heavy ion collisions. Heavy quarks are produced at a relatively early stage of the nucleus-nucleus collision and they may have a reduced level of gluon radiation due to a suppression of small angle gluon radiation known as the 'dead cone effect.' The first results on the suppression of the J/ψ as a function of the collision centrality were reported by the ATLAS experiment in 2011. Semi-leptonic decay muons from the heavy flavor hadrons can be employed as a proxy for the heavy flavor quarks by making use of the high precision and high efficiency of the ATLAS muon system. In this talk, we present the nuclear modification factor for the muons coming from the semi-leptonic decays of heavy flavor particles. The results are measured separately for the b and $c \rightarrow \mu$ decay channels as a function of the transverse momentum of the muon in the range from 4 to 14 GeV for different centralities of Pb+Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV.

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