

Study of the nuclear modification factor of electrons from B meson decays at mid-rapidity in Pb-Pb collisions at $\sqrt{s_{\text{NN}}} = 2.76$ TeV with ALICE

Heavy quarks are relevant probes of the QCD medium produced in high-energy heavy ion collisions. Indeed, medium-induced energy loss is expected to depend on the parton mass and color charge. Charm and beauty quarks are created early in the collision and should thus traverse much of the QCD medium created. In 2010 and 2011, pp collisions at $\sqrt{s} = 7$ TeV and PbPb collisions at $\sqrt{s_{\text{NN}}} = 2.76$ TeV have been recorded by the ALICE experiment at the LHC. The electrons produced by the collision can be separated from the other particles via the excellent Particle Identification capabilities of ALICE. Due to the large proper decay length ($c\tau \approx 500\mu\text{m}$) of beauty hadrons and a hard momentum spectrum, electrons from their decays have a wider impact parameter distribution compared to background electrons. By taking into account the different impact parameter distribution shapes, the p_t spectrum of electrons from beauty hadron decays can be obtained. We present a method to measure the p_t dependence of the nuclear modification factor R_{AA} of electrons from beauty hadron decays in Pb-Pb collisions using the central barrel ($|\eta| < 0.8$) of ALICE and discuss the current status of the analysis.

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