



Contribution ID: 610

Type: **Parallel session talk**

Open charm and beauty production and anisotropy from small to large systems with ALICE

Monday 26 July 2021 10:30 (15 minutes)

In this talk, the nuclear modification factor (R_{AA}) and the elliptic flow (v_2) of open heavy-flavour hadrons via their hadronic and semileptonic decays to electrons at midrapidity and to muons at forward rapidity in heavy-ion collisions will be discussed. In particular, the latest results on the centrality dependence of R_{AA} of charmed hadrons, beauty-decay electrons, non-prompt D^0 and the new measurement of non-prompt D_s^+ in Pb-Pb collisions at $\sqrt{s_{NN}} = 5.02$ TeV will be shown. They provide important constraints to the energy loss mechanisms in the medium and their mass dependence, and provide information about the fragmentation of heavy quarks to strange heavy-flavour hadrons. Final and high precision measurements of elliptic flow of heavy-flavour particles provide stringent information about the thermal degrees of freedom of heavy quarks in the QGP, path-length dependence of heavy-quark in-medium energy loss and recombination effects. The elliptic flow of charmed hadrons and of the beauty-decay electrons will help test whether heavy quarks thermalise in the medium. Comparisons with model calculations including the interaction of heavy quarks with the hot, dense, and deconfined medium will be discussed. In this contribution, the final measurements of beauty production using beauty-decay electrons and non-prompt D in pp collisions at $\sqrt{s} = 5.02$ TeV are also reported. They provide important tests of perturbative QCD calculations.

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Collaboration / Activity

ALICE

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