Contribution ID: **243** Type: **3a) Heavy-flavours and quarkonia (TALK)**

Measurements of heavy-flavour decay leptons production in Pb–Pb and Xe–Xe collisions with ALICE at the LHC

Tuesday 2 October 2018 15:00 (20 minutes)

Charm and beauty quarks are expected to form on a shorter time scale with respect to the strongly interacting matter, Quark-Gluon Plasma (QGP), produced in high-energy heavy-ion collisions. Therefore, witnessing the full evolution of the collision, they are effective probes to study the mechanisms of parton energy loss and hadronisation in the hot and dense medium, giving insight on the QGP evolution and its transport coefficients. The heavy flavour nuclear modification factor ($R_{\rm AA}$) and the elliptic flow (v_2) allow investigating the interaction strength of heavy quarks with the constituents of the expanding medium. The comparison of the $R_{\rm AA}$ of charm, beauty and light-flavour hadrons provide information about the colour-charge and parton- mass dependence of parton energy loss. At low $p_{\rm T}$ the v_2 is expected to give insights into the degree of thermalisation of heavy quarks in the deconfined medium, and at high $p_{\rm T}$ it carries information on the path-length dependence of in-medium parton energy loss.

In this talk, measurements of $R_{\rm AA}$ and v_2 of open heavy-flavour hadrons via semi- leptonic decays to electrons at mid-rapidity and muons at forward rapidity in Pb–Pb collisions at LHC energies will be discussed. The progresses on the analysis of the production and anisotropy of electrons from beauty-hadron decays will be also discussed. In addition the $R_{\rm AA}$ of heavy- flavour hadron decay leptons in Xe–Xe collisions will be presented, along with the prospects for measuring the total charm cross section in this collision system. Comparisons with model calculations including the interaction of heavy quarks with the hot, dense, and deconfined medium will be also shown.

Summary

Authors: ZHANG, Zuman (Central China Normal University CCNU (CN)); ALICE COLLABORATION

Presenter: ZHANG, Zuman (Central China Normal University CCNU (CN))

Session Classification: Parallel 3