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Measurement of heavy-flavour jets and correlations and elliptic flow in small systems with ALICE

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The ALICE Collaboration studied extensively heavy-flavour production at mid- and forward rapidities in small systems at the LHC. The data provide precise tests for pQCD calculations based on the factorization approach and set constraints to Cold Nuclear-Matter effects that can modify heavy-flavour production in p-Pb collisions with respect to pp collisions. At mid-rapidity the study of the angular correlation of heavy-flavour particles with charged particles produced in the event allows us to further characterize charm and beauty production and fragmentation processes in pp collisions and investigate their possible modifications due to nuclear effects in p-Pb and Pb-Pb collisions. In p-Pb collisions these studies can also set constraints on the dependence of Cold Nuclear-Matter effects on the collision geometry and on the density of final-state particles. In addition, the study of the angular correlation pattern in p-Pb collisions as a function of the event multiplicity allows studying the features of long-range correlations similar to the one found in heavy-ion collisions whose origin is still debated. Finally, the measurement of heavy-flavour jets, besides constituting the necessary baseline for similar studies in the Pb-Pb collision system, gives more direct access to the initial parton kinematics and can provide further constraints on pQCD based models.

In this contribution, the latest ALICE results from pp and p-Pb collisions collected during the LHC Run 2 will be presented. In particular, measurements of the angular correlation of D mesons and heavy-flavour decay electrons with charged particles in pp and p-Pb collisions will be shown. The measurement of heavy-flavour decay leptons elliptic flow in p-Pb collisions at high multiplicity at mid-and forward rapidities will also be presented together with the D-meson central to peripheral ratio (Q_{CP}). Finally, ALICE measurements on D-tagged jets will be discussed both in pp and p-Pb collisions together with the status of b-jet measurements. All the results shown will be compared with theoretical models.

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