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Study of charm jet tagging using D^{*+} mesons with ALICE in pp collisions at the LHC

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Heavy-flavour hadrons and jets are effective probes for the characterisation of the strongly interacting matter formed in high-energy heavy-ion collisions, known as Quark-Gluon Plasma. Tagging jets by looking for a D meson within their cone provides a sample of jets originating from charm quark fragmentation and thus allowing us to improve our understanding of heavy-quark fragmentation, both in pp and Pb-Pb collisions.
This poster presents the strategy and the observables under study, together with the current status of the D^{*+}-jet correlation measurement in pp collisions at $\sqrt{s} = 8$ TeV. The high statistics required for D-meson measurements and jet spectrum corrections demand for a large data sample. In 2012, the ALICE experiment recorded pp events triggering with its electromagnetic calorimeter, hence preferentially selecting events with jets and heavy-flavour signals. A set of Monte Carlo studies is presented with the aim of assessing the feasibility of the measurement in pp with the current data and with larger integrated luminosities in pp and Pb-Pb collisions as they are expected to be available from Run 2 at the LHC.

On behalf of collaboration:

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