



# XXIV QUARK MATTER DARMSTADT 2014

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## $D^+$ -meson reconstruction in pp collisions at $\sqrt{s} = 8$ TeV with the ALICE detector

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Heavy quarks (charm and beauty) are a powerful probe to investigate the properties of the medium created in heavy-ion collisions. Due to their large mass, heavy quarks are produced as a result of partonic scattering processes with large momentum transfer, occurring in the early stages of the collisions. The produced heavy quarks travel through the medium, experiencing all the stages of its evolution and finally they hadronize inside or outside the medium. The measurement of the charm production cross section in pp collisions provides an interesting insight in QCD processes and the necessary reference for heavy-ion studies.

ALICE (A Large Ion Collider Experiment) is an experiment at the Large Hadron Collider (LHC) designed to carry out comprehensive measurements of the particles produced in high energy nucleus-nucleus collisions, in order to study QCD matter at high temperature and energy density and the transition between confined matter and the Quark-Gluon Plasma (QGP). D mesons are reconstructed through their hadronic decay channels. The detectors used for the D-meson reconstruction and selection are: the Inner Tracking System (ITS), the Time Projection Chamber (TPC) and the Time-of-Flight (TOF). In addition the Electromagnetic Calorimeter (EMCal) was used, with energy threshold ranging from 1.5 to 2 GeV, to trigger on events with a high energy particle, which allows us to have a data sample enriched of events with heavy flavours.

We present the analysis status of the  $D^+$ -meson production in the data sample of pp collisions at  $\sqrt{s} = 8$  TeV collected in 2012.  $D^+$  mesons are reconstructed in the hadronic decay channel  $D^+ \rightarrow K^- \pi^+ \pi^+$ . We focus on the studies of the  $D^+$  signals obtained from the invariant mass distributions of triplets of tracks originating from secondary vertices displaced from the interaction point and on the performance of the EMCal trigger.

### **On behalf of collaboration:**

ALICE

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