Contribution ID: **12**   Type: **not specified**

Multivariate Analysis Techniques for charm reconstruction with ALICE

Wednesday, 11 April 2018 15:30 (20 minutes)

ALICE is the experiment at the LHC dedicated to heavy-ion collisions. One of the key tools to investigate the strongly-interacting medium (Quark-Gluon Plasma, QGP) formed in heavy-ion collisions is the measurement of open-charm particle production. In particular, charmed baryons, such as ΛC, provide essential information for the understanding of charm thermalisation and hadronisation in the QGP. Data from proton-proton and proton-Pb collisions are needed as a reference for interpreting the results in Pb-Pb collisions, as well as to study charm hadronisation into baryons "in-vacuum". The relatively short lifetime of the ΛC baryon, $c\tau \~ 60\mu m$, makes the reconstruction of its decay a challenging task that profits from the excellent performance of ALICE in terms of secondary vertex reconstruction and particle identification. The application of multivariateanalysis (MVA) techniques through Boosted Decision Trees can facilitate the separation of the ΛC signal from the background, and as such be a complementary approach to the more standard technique based on topological and kinematical cuts. In this contribution, the analysis and results of the ΛC -baryon production with MVA in pp collisions at $\sqrt{s}$ = 7 TeV and in p-Pb collisions at $\sqrt{s_{NN}}$ = 5.02 TeV will be shown.

Intended contribution length

20 minutes

Primary author: ZAMPOLLI, Chiara (CERN)

Presenter: ZAMPOLLI, Chiara (CERN)

Session Classification: Session 6