## $\phi$ meson production relative to hard scatterings in pp collisions using the ALICE detector

Friday 19 July 2024 16:45 (15 minutes)

As the  $\phi$  meson is composed of a pair of strange-antistrange quarks, it puts implicit constraints on modelling the hadronization procedure itself. Perturbative QCD inspired models, such as PYTHIA 8, describe hadronization through parton showers where strangeness is conserved on a quark-by-quark basis. In contrast, quark-gluon plasma inspired models, such as EPOS-LHC and EPOS4, model hadronization by statistical/thermal processes through microcanonical ensembles: as the  $\phi$  meson is inherently neutral in strangeness, it is predicted to have similar dynamics to particles with comparable hadronic masses. Measuring the  $\phi$  meson yield in association with a hard scattering can be used to test which paradigm best describes the underlying dynamics of  $\phi$  meson production. This contribution will highlight new results from ALICE comparing the  $\phi$  meson production in-and-out of jets from pp collisions at  $\sqrt{s}=13.6$  TeV.

## Alternate track

## I read the instructions above

Yes

Author: LIM, Bong-Hwi (Universita e INFN Torino (IT))

Co-author: COLLABORATION, ALICE

Presenter: LIM, Bong-Hwi (Universita e INFN Torino (IT))

Session Classification: Strong interactions and Hadron Physics

Track Classification: 06. Strong Interactions and Hadron Physics