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## Parton discrimination using jets with ALICE at the LHC

## Abstract content

The LHC is providing proton-proton collisions that will be a benchmark for the study of the properties of the hot and dense matter produced during heavy ion collisions. Using the excellent tracking capabilities of ALICE, it may be possible to disentangle jets produced by quarks or gluons. In this way we could be able to compare the properties, such as energy loss, of the partons produced in the vacuum with those produced in heavy ion collisions.

The first results from a study performed on simulated proton-proton collisions, where the approach should be first tested, are presented. The study has been developed using Pythia Monte Carlo jet events with the full simulation of ALICE. The jet-parton identification method is based on the differences in the fragmentation properties of jets produced by quark or gluons. In this study, we use the fact that gluon jets are expected to contain a larger multiplicity than quark jets of the same energy. Other approaches for the study will also be discussed. The results of applying cuts to select quark/gluon jets are presented.

## Summary

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