



Laboratoire LEPRINCE-RINGUET
Ecole polytechnique IN2P3/CNRS

Séminaire

Probing extended Higgs and Dark Sectors with b-jets at the LHC

The top quark is more than forty times heavier than the next heaviest fermion included in the standard model of particle physics. This large mass makes it a very sensitive probe to particles with Yukawa-like interactions. This includes Higgs bosons, but also a large variety of new particles predicted by theories beyond the standard model and connected to the dark sector. By virtue of the $t \rightarrow bW$ branching ratio being close to 100%, top quarks at the LHC are inferred by the presence of hadronic jets initiated by b-quarks, called b-jets, in the final state. I will introduce b-jet identification at the LHC and show how we currently use it to study the coupling of the Higgs boson to third-generation fermions and probe the dark sector. I will highlight the importance of b-jet identification for the future steps of the LHC physics program and discuss the main experimental challenges.

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Responsables séminaires

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