Soutenance de thèse de doctorat

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Jeudi 21/09/2017, 14h30

Orme des Merisiers Amphi Claude Bloch, Bât. 774

Lais Sarem-Schunk

IPhT

Understanding jet substructure at the LHC

Jets are collimated structures emerging from high-energy quarks and gluons. They are ubiquitous in colliders physics, like at the LHC. As we probe higher energies (boosted regimes), new objects are seen as jets. To separate them from quarks and gluons, it is necessary to access the internal dynamics of jets, that is to explore their substructure. These methods are used in a variety of measurements and searches at the LHC.

In my PhD thesis I study jet substructure techniques at the LHC, focusing on the identification of two-pronged jets like boosted W/Z/H bosons. I adopt an analytical approach based on all-order resummation techniques in perturbative QCD. I will present studies of different methods and use the insight from these calculations to propose new variants and tools that have a better separation performance and are more resilient to model-dependent non-perturbative effects.