

Quantum field theory meets gravity



Contribution ID: 95

Type: **not specified**

Precision calculation for the LHC

Wednesday 25 September 2019 16:30 (30 minutes)

The large quantity of data expected from the Large Hadron Collider (LHC) will allow detailed investigations of the Higgs boson, as well as searches for Beyond the Standard Model (BSM) physics through small deviations in Standard Model (SM) signatures. In order to take full advantage of this dataset, it is essential to confront the measurements with high precision theoretical predictions. These require complicated calculations in the quantum field theories that comprise the SM. I will review the current status and future prospects of these computations, focusing on next-to-next-to-leading order (and higher) calculations in perturbative QCD.

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Session Classification: Parallel Session: Particle Phenomenology