

# Seminários de Física

CFUM, LIP-Minho, DF

## NNLO QCD predictions for inclusive jet production at the LHC

**João Pires**

Instituto Superior  
Técnico

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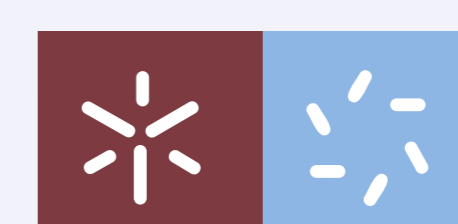
14h30

Anfiteatro Dep. Física  
Campus de Gualtar  
Braga

### Summary:

\_Fixed order perturbation theory has been a reliable tool for improving the accuracy of the Standard Model predictions and establish its range of validity. In this talk I will present the calculation of the next-to-next-to-leading order (NNLO) QCD corrections to inclusive jet production and related observables at hadron colliders. To perform the calculation we employ the antenna subtraction scheme which allows for an analytic cancellation of infra-red (IR) singularities between real and virtual corrections at NNLO. High-precision differential QCD predictions are discussed and compared to recent measurements of jet production at the LHC. We show that the NNLO correction significantly reduces the scale uncertainty compared to next-to-leading order (NLO) opening the path towards jet precision QCD phenomenology with the LHC. Prospects for jet production at the High-Luminosity and High-Energy HL/HE-LHC stages are briefly presented.

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