

Diphoton production at LHC: the main background for Higgs boson searches

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Diphoton production is the main background in searches and studies for a low mass Higgs boson, decaying in a pair of photons. Due to current searches and studies at the LHC, it is desirable to count with the best theoretical tool to describe this background. In this talk we will present the details behind the calculation, which is based on the transverse momentum subtraction formalism, and show different results obtained using a code

that calculates diphoton production at NNLO in perturbative QCD. We will talk about the comparison with the LHC data and Tevatron data and discuss why the NNLO is necessary to understand the phenomenology of this process.

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