

# Soft gluon resummation for associated top-quark pair production with a photon at the LHC

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The associated top-quark pair production with a photon  $t\bar{t}\gamma$  represents an important process to further test the Standard Model. Among others, it allows to directly probe the electric charge of the top quark, as well as the top-photon coupling. Therefore, precise predictions are of utmost importance.

In this talk, I will discuss the application of QCD resummation techniques to improve the precision of the theoretical predictions for the total cross section for this process at the LHC. The reported calculations are carried out in the framework of invariant mass threshold resummation and the results are matched to the complete next-to-leading order calculation, including QCD and electroweak effects.

## Alternate track

### I read the instructions above

Yes

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