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## Multiple photon production in double parton scattering at the LHC

The high density of gluons in the initial state of hadronic collisions at LHC implies that the probability of multiple parton interactions within one proton - proton collision increases. In particular, the probability of having two or more hard interactions in a collision is not significantly suppressed with respect to the single interaction probability. It has motivated a rapid development of the theory of double parton scattering (DPS) processes and several estimates of the cross sections for different processes have been presented in recent years.

In this contribution we study the production of prompt photons in DPS processes. In particular, we estimate the rapidity and transverse momentum distribution for the double Compton processes, which lead to two photons plus two jets in the final state, and the production of three and four photons in the final state, which are backgrounds to physics beyond the Standard Model. Our predictions for the total cross sections are compared with those for the production of the same final states in single parton scattering processes.

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