

UPC2025: The second international workshop on the physics of Ultra Peripheral Collisions

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LbLatNLO: light-by-light at NLO

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In this talk I plan to discuss the next to leading order corrections to light by light scattering process in QCD+QED. Recent experimental observation of this fundamental process in ultra peripheral collision at LHC has revived the interest to precisely predict its cross-section. We discuss two radically different computational approaches, both exact in the fermion mass dependence, thus offering a strong cross-check of our results. Our two calculations agree with each other and conclude that including the exact fermion mass contribution typically increases the size of the NLO corrections. We also discuss the comparison of our results with ATLAS and CMS measurements in ultra-peripheral lead-lead collisions.

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