

Numerical threshold subtraction in physical amplitudes

Thursday 18 April 2024 17:00 (30 minutes)

We present numerical loop (and phase-space) integration for the virtual correction to the process $q\bar{q} \rightarrow \gamma\gamma\gamma$ and $q\bar{q} \rightarrow \gamma^*\gamma^*\gamma^*$ at one-loop and two-loop N_f orders. The approach involves employing infrared and ultraviolet local subtraction counterterms to achieve a locally finite amplitude in 4 dimensions. Subsequently, this locally finite amplitude is numerically integrated in loop momentum space using the cross-free-family representation and the threshold subtraction technique. Finally, the infrared and ultraviolet counterterms are analytically integrated to obtain the complete result.

Author: VICINI, Matilde (ETH zurich)

Co-author: KERMANSCHAH, Dario

Presenter: VICINI, Matilde (ETH zurich)

Session Classification: Parallel 8