

## Two-loop mixed QCD-EW corrections to charged-current Drell-Yan

*Tuesday, 10 September 2024 11:00 (25 minutes)*

The charged current Drell-Yan process plays a crucial role at hadron colliders since it provides the environment for a precise study of the gauge sector of the Standard Model and, in particular, for the determination of the W-boson mass. In this talk, we will present our recent computation of the mixed QCD-EW two-loop virtual amplitudes for this process, which constitute one of the main bottlenecks for the complete calculation of NNLO mixed QCD-EW corrections. We present the details of our calculation, performed via semi-analytical methods, with an emphasis on the evaluation of all the relevant two-loop Feynman integrals where the presence of one additional mass, compared to the neutral current case, makes the computation extremely challenging.

**Primary author:** ARMADILLO, Tommaso (UCLouvain, UNIMI)

**Presenter:** ARMADILLO, Tommaso (UCLouvain, UNIMI)

**Session Classification:** Electroweak and Higgs Physics, EFT and BSM

**Track Classification:** Electroweak and Higgs Physics, EFT and BSM