

Higher-order QCD corrections to vector boson production at hadron colliders.

Thursday 16 July 2009 14:30 (15 minutes)

We consider QCD radiative corrections and their to the production of vector bosons in hadron collisions.

We present a fully exclusive calculation up to next-to-next-to-leading order (NNLO) in QCD perturbation theory. Our calculation is implemented in a parton level Monte Carlo program which allows the user to apply arbitrary kinematical cuts on the final-states and to compute the corresponding distributions in the form of bin histograms. We show selected numerical results at the Tevatron and the LHC.

We discuss the resummation of logarithmic-enhanced QCD corrections at small values of q_T and the matching procedure to consistently combine resummation with the fixed order perturbative result at intermediate and large q_T . We present a study of the scale dependence and of the perturbative uncertainty of our results. We compare numerical results for e^+e^- pairs from the decay of Z bosons with the available Tevatron data.

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Session Classification: V. QCD at Colliders

Track Classification: QCD at Colliders