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Electroweak corrections to vector-boson + jet production at the LHC

Saturday, 7 July 2012 18:00 (1 hour)

A review of the recent progress in the theory predictions for vector-boson plus jet(s) production at the LHC is given, focussing on the discussion of electroweak corrections, where all off-shell effects due to the vector-boson decay are included consistently. The electroweak contributions amount up to several tens of percent at high transverse momenta and thus significantly affect the V+jet production rates. We present new results on the electroweak corrections to single-jet production with missing transverse momentum in the Standard Model, since the corresponding monojet signature is predicted by many new-physics models and therefore needs a reliable SM prediction. In order to further improve the theory prediction for the V+jet cross section, we additionally discuss the correct combination of EW corrections with "standard" QCD Monte Carlo simulations, which is an important issue in view of the high experimental accuracy expected in the future of LHC physics.

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