Electroweak corrections to high p_T jets

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Abstract

The production of electroweak (EW) bosons in association with jets has been extensively studied at particle colliders. The EW boson is considered the outcome of the hard process and the jets a product of parton evolution. These events are a great test of quantum chromodynamics and allow to study parton density functions and parton evolution equations. So far, light quarks and gluons are considered in the parton evolution. However, with increasing centre-of-mass energies the probability of radiating heavier particles increases.

In this analysis, the production of EW bosons in association with jets is studied specifically with the aim to investigate EW boson emitted in the parton shower. For that, events with high transverse momentum jets are studied, events with two or more jets. Then, the contribution of EW boson emissions is measured.

Preliminary results are presented with data collected in 2016, corresponding to an integrated luminosituy of 36.3 fb^{-1}. The contribution of the Z boson is studied in the leptonic decay channel.