Contribution ID: **18** Type: **not specified**

Z-boson pair + 1-jet production at NLO QCD

Tuesday 14 September 2010 15:45 (30 minutes)

A fully differential calculation of the next-to-leading order QCD corrections to the production of Z-boson pairs in association with a hard jet at the Tevatron and LHC is presented. This process is an important background for Higgs particle and new physics searches at hadron colliders. We find sizable corrections for cross sections and differential distributions, particularly at the LHC.
Residual scale uncertainties are typically at the 10\% level and can be further reduced by applying a veto against the emission of a second hard jet.
Our results confirm that NLO corrections do not simply rescale LO predictions.
[Phys.Lett.B683:154-159,2010]
+
successful comparison with ZZj calculation of Dittmaier, Kallweit, Uwer
[Les Houches Workshop SM and NLO Multileg WG procs., arXiv:1003.1241]
+
additional work:
- additional differential distributions
- comparison of dynamic with fixed scale definitions
- comparison of Kt and SISCone jet algorithms
investigate source of large residual scale uncertainty at LHC:
- contributions of different initial state channels
- independent variation of \mu_R and \mu_F
[in progress]

Primary author: KAUER, Nikolas (RHUL)

Co-authors: ARCHIBALD, Jennifer (IPPP Durham); KARG, Stefan (RWTH Aachen University); GLEISBERG, Tanju (SLAC); BINOTH, Thomas (University of Edinburgh)

Presenter: KAUER, Nikolas (RHUL)

Session Classification: Afternoon I