

PAUL SCHERRER INSTITUT



Particle Theory Seminar

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“NLO QCD corrections to the production of a weak boson pair with a jet”

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Abstract:

Precise phenomenological studies for signals and backgrounds to new physics are required by the Tevatron and the upcoming Large Hadron Collider. One of these is the Next-to-Leading Order correction to the production of a weak boson pair (W, Z bosons) with one jet. The QCD corrections to this process, which is on the top of “Les Houches wishlist 2005” for important missing NLO predictions, represent an important background for the Higgs boson and new physics searches. With these one-loop multi-leg calculations an enormous growth of complexity appears and automated calculations for a numerically stable evaluation are needed. The technique used for this calculation, which is based on the GOLEM method, will be presented.