



**DIPARTIMENTO DI FISICA "E.Fermi"**  
UNIVERSITÀ DI PISA  
**CORSO DI DOTTORATO IN FISICA**  
Largo B.Pontecorvo, 3 - Edificio B-C  
56127 PISA - ITALY



## **AVVISO DI SEMINARIO**

**Martedì 7 Aprile 2009**  
ore 15.00

INFN - Sezione di Pisa  
L.go B.Pontecorvo, 3 - Edificio C  
Aula 131 (Piano Terra)

**Massimiliano Grazzini**  
INFN Sezione di Firenze

# **"Higher order QCD corrections to the W and Z production at the Tevatron and the LHC"**

Abstract: Vector boson production at hadron colliders (the Drell-Yan process) is important for physics studies within and beyond the Standard Model.

In this seminar I will review the current knowledge of radiative corrections to vector boson production and I will present new results for the transverse momentum spectrum of W and Z bosons at the Tevatron and LHC

Then, I will discuss a new computation of radiative corrections to W and Z boson production up to next-to-next-to-leading order in QCD perturbation theory.

This calculation includes gamma-Z interference, finite-width effects, the leptonic decay of the vector boson and the corresponding spin correlations. Our calculation is implemented in a parton level Monte Carlo program that allows the user to apply arbitrary cuts on the final state leptons and the associated jet activity, and to plot the corresponding distributions in the form of bin histograms.