Abstract Submitted
for the SES11 Meeting of
The American Physical Society

Angular Distribution of Z^0 Bosons in Z^0+Jet Events LUIS LEBOLO, Florida International University, CMS COLLABORATION — The Z^0 boson center-of-mass angular distribution is measured in proton-proton collisions at $\sqrt{s} = 7$ TeV, at the CERN LHC. The advantage of studying the angular distribution is that the partonic cross section is solely a function of $\hat{s}$ and $cos\hat{\theta}$; it does not depend on the details of the parton distribution functions. The data sample, recorded with the CMS detector, corresponds to an integrated luminosity of approximately 36 pb^{-1}. Events in which there is a Z^0 and at least one jet, with a transverse momentum threshold of 20 GeV and absolute rapidity less than 2.5, are selected for this analysis. Only the Z^0's muon decay channel is studied. Within experimental and theoretical uncertainties, the measured angular distribution is in agreement with next-to-leading order perturbative QCD predictions. This analysis extends the phase space available to previous Tevatron studies by probing larger values of $\hat{s}$ and center-of-mass rapidities.

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Date submitted: 22 Aug 2011 Electronic form version 1.4