

Lead PDF and Errors

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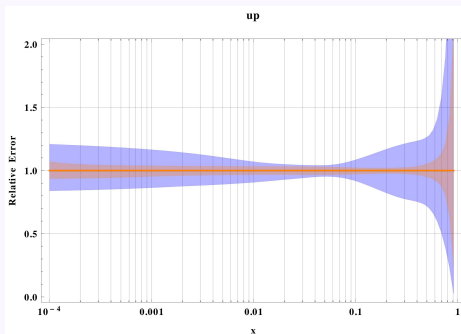
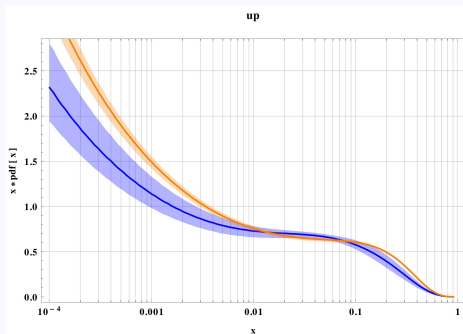
HERAFitter Meeting, DESY

10 Dec 2013

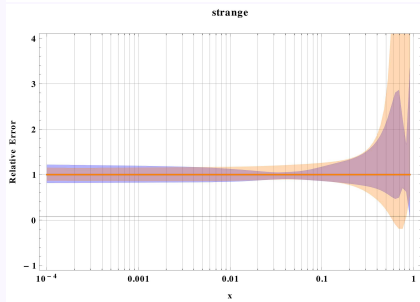
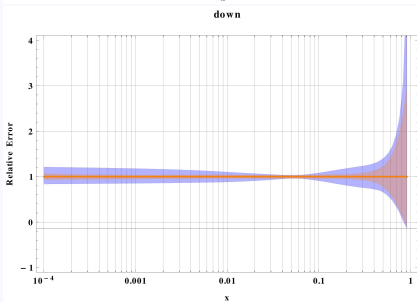
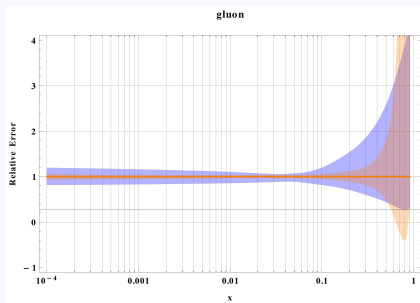
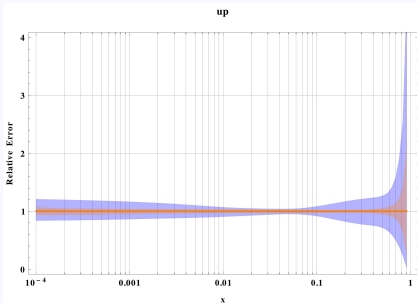


nCTEQ Errors vs CT10 Errors

- Error sets have been created for the nCTEQ PDFs by Aleksander Kusina and Fred Olness.
- The error sets are over 17 eigenvectors. Each family contains 35 PDS files.

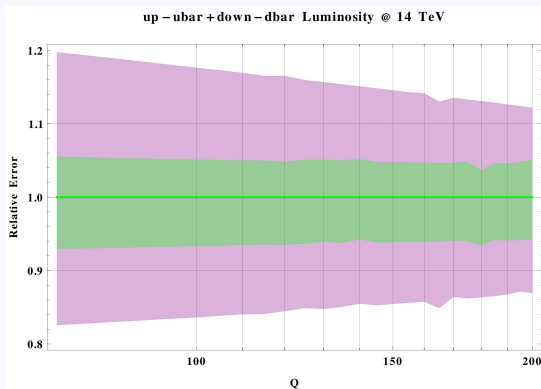


nCTEQ Lead PDFs and Errors



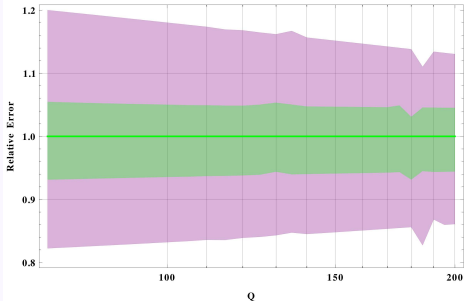
Parton-Parton Luminosity

- Luminosities can be calculated with the nCTEQ Lead set.
- A precise understanding of their uncertainties is critical to making accurate predictions at the LHC and discovering new physics.

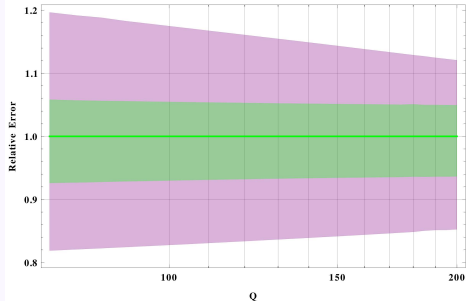


Luminosities for Electroweak Measurements

up - dbar Luminosity @ 14 TeV



ubar - down Luminosity @ 14 TeV



Mathematica Interface

- We have developed a set of Mathematica packages to manipulate PDF/nPDF sets.
- the package will be available on the nCTEQ main page.
- FEATURES OF PACKAGE:
 - ▶ light and flexible
 - ▶ efficient
 - ▶ able to handle several pdf arrays at once
 - ▶ for use with cteq 6.6 and later .pds files
- We are in the process of adding a package that allows for the manipulation of lhaPDF 6 files.

