

# Phenomenology 2018 Symposium



Contribution ID: 526

Type: parallel talk

## CTEQ-TEA parton distributions, LHC constraints, and LHC predictions

*Tuesday 8 May 2018 14:00 (15 minutes)*

I give a lightning tour of recent developments in CTEQ-TEA parton distribution functions (PDFs) and of a new program PDFSense for visualization of experimental constraints on the PDFs. The PDFSense tool allows a user to identify and plot individual measurements in the CTEQ-TEA analysis constraining the PDF dependence of a QCD observable of interest, such as a precision electroweak or new-physics cross section at the LHC. With the help of PDFSense, many physics insights about the PDFs can be gained or reinforced. As one of many examples, it is employed to rank the projected impact of new LHC measurements in jet, vector boson, and  $t\bar{t}$  cross sections on the PDFs, and to evaluate the potential of future deep-inelastic scattering experiments for constraining the nucleon structure.

### Summary

The most relevant tracks are “QCD” and “SM”. The talk also overlaps with the “Higgs” and “Tools” tracks.

**Primary authors:** HOBBS, TIMOTHY J (Southern Methodist University); WANG, Bo Ting (Southern Methodist University); DOYLE, Sean (Southern Methodist University); GAO, Jun (Shanghai Jiao Tong University); Dr HOU, Tie-Jiun (Southern Methodist University); NADOLSKY, Pavel (Southern Methodist University); OLNESS, Fred (Southern Methodist University (US))

**Presenter:** NADOLSKY, Pavel (Southern Methodist University)

**Session Classification:** QCD & EW I