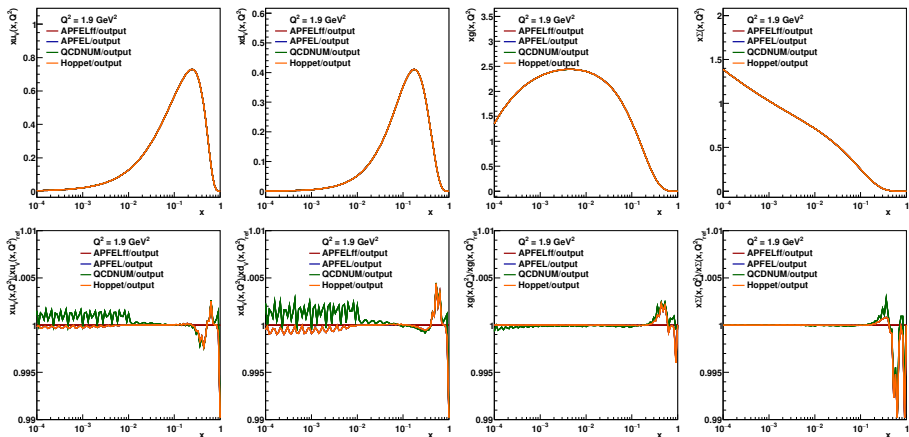
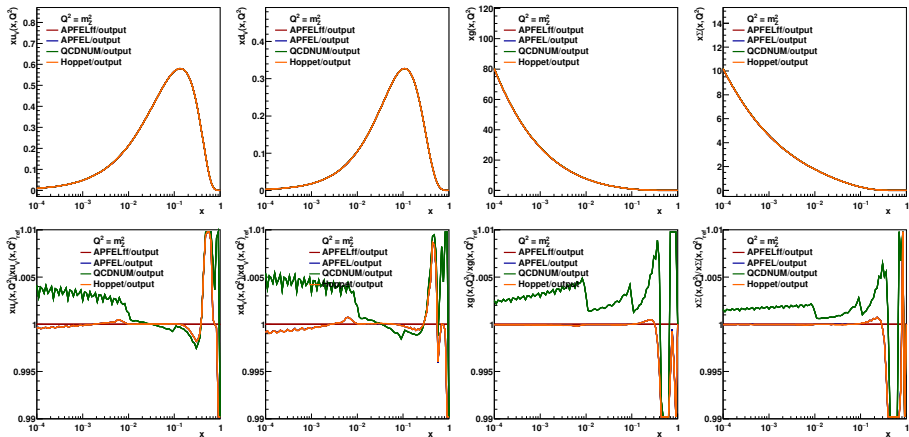


Benchmark of PDF evolution codes in xFitter

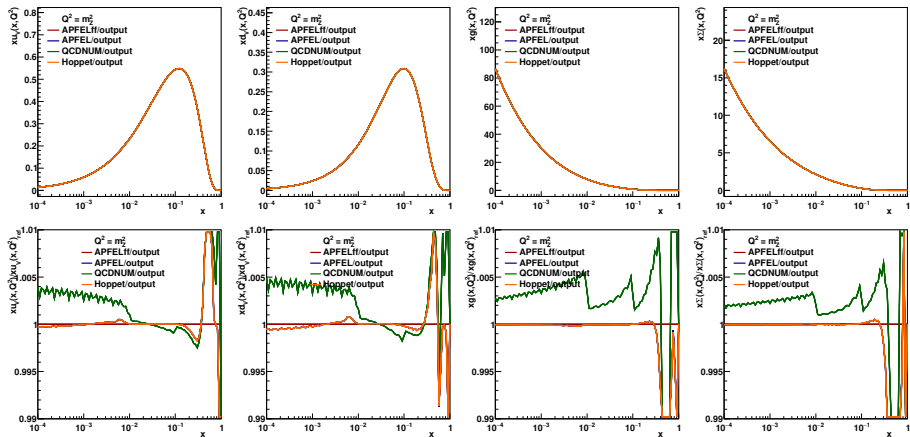
- Compared `APFELff` (FORTRAN), `APFEL` (C++), `QCDNUM` and `Hoppet` at LO, NLO, NNLO
- Based on `Hoppet_test` branch (code to be cleaned up)
- All settings are xFitter default, VFNS with $n_f = 5$
- Same PDF parametrization at starting scale $Q_0^2 = 1.9 \text{ GeV}^2$



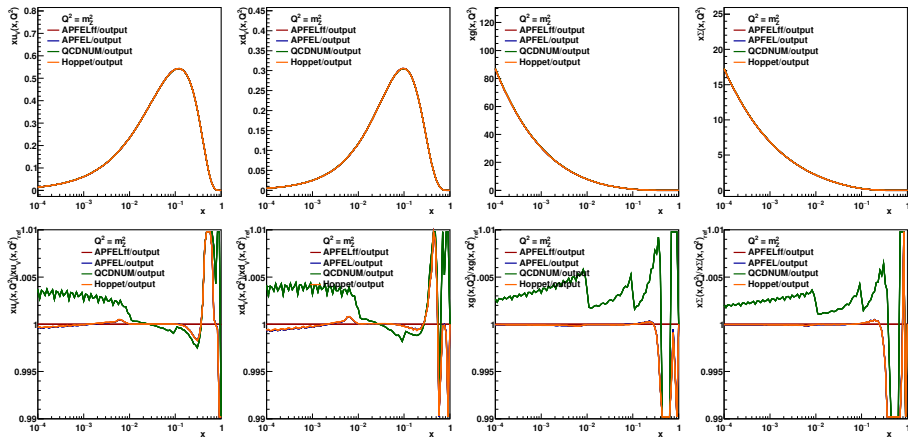
Benchmark of PDF evolution codes in xFitter: LO



Benchmark of PDF evolution codes in xFitter: NLO



Benchmark of PDF evolution codes in xFitter: NNLO



- Agreement between all codes within 0.5%
- Best agreement between APFEL and Hoppet $\ll 0.1\%$
- Agreement between APFELff, APFEL and Hoppet $\sim 0.1\%$
- QCDNUM: up to 0.5% differences vs. other codes
- Next steps: benchmark of N3LO evolution (APFEL, Hoppet) and DIS structure functions