Schematics of PDF extractions

Input parameters and flags → PDF parametrisation → PDF evolution (DGLAP)

DATA

PDF parametrisation → χ² minimisation / Error treatment
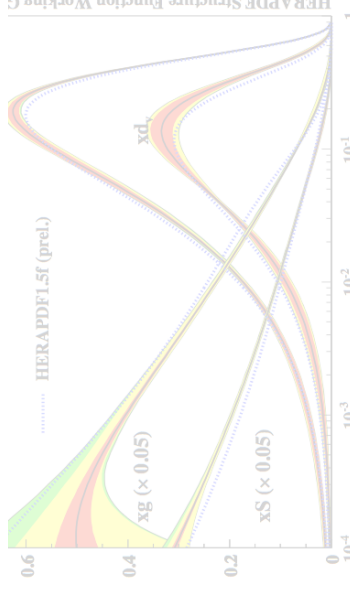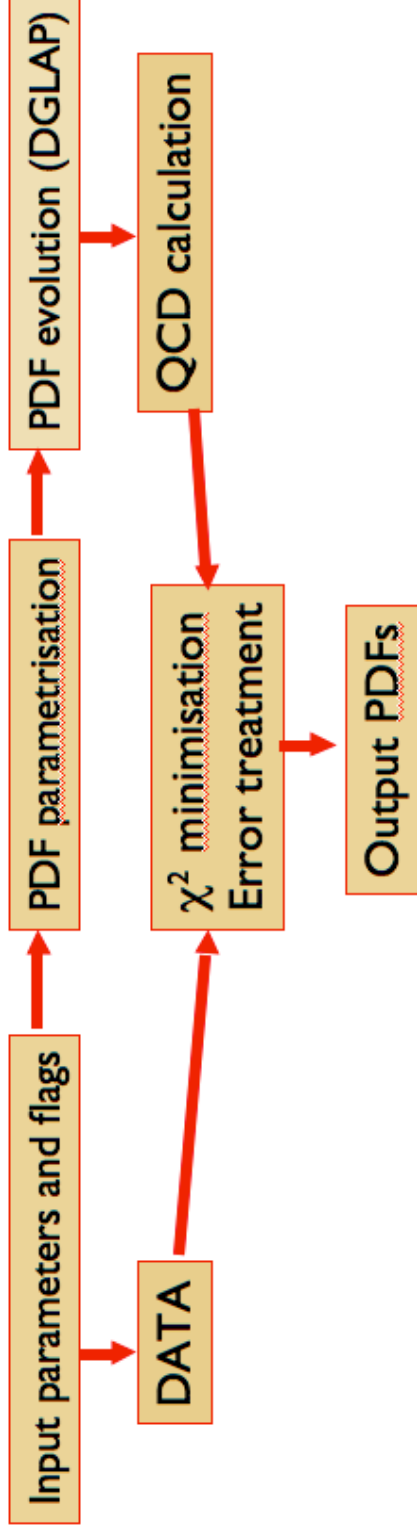
QCD calculation

χ² minimisation / Error treatment → Output PDFs

- PDFs are extracted from QCD fits to cross section data:
  - Parametrise PDFs at a starting scale by smooth functions with sufficient parameters;
  - Evolve PDFs to other scales by the evolution equations (DGLAP);
  - Compute cross sections for DIS/DY (or other processes) at NLO (NNLO);
  - Calculate χ^2 measure of agreement between data and theory model;
  - Obtain the best estimate of the PDFs by varying the free parameters to minimize χ^2