



● Bachelor

- ➔ Adaptation Luigi/LAW workflow to NLOJet++ for 1-, 2-, 3-jet NLO predictions
- ➔ Adaptation of Luigi/LAW workflow with NNLOJET to CERN lxplus cluster
- ➔ Extension of Luigi/LAW workflow for NP corrections to Pythia or Sherpa
- ➔ Re-implementation of reference cross sections in fastNLO
- ➔ Merging of fastNLO interpolation bins
- ➔ Work on converter routines for fastNLO interpolation grids at NNLO
- ➔ Performance studies with fastNLO
- ➔ Studies with Rivet routines for data comparisons

● Master & PhD

- ➔ 3D Z+jet analysis Run 2 UL (Master Cedric)
- ➔ 3D Dijet production Run 2 UL (PhD Aayushi, with Punjab)
- ➔ Dijet angular search for new physics (with UHH & Chicago) Run 2 UL or Run 3
- ➔ R3/2, R4/3 incl. jet cross section ratios
- ➔ On-the-fly creation of interpolation grids
- ➔ Validation of Sherpa MCgrid interface to fastNLO interpolation grids
- ➔ Creation of Herwig7 interface to fastNLO (with ITP Stefan Gieseke & Wien Simon Plätzer)
- ➔ Studies with xfitter and/or Alpos for simultaneous fits of α_s and PDFs to multiple published datasets