HL/HE-LHC yellow Report WG1 SM/Top Activities

Patrizia Azzi (CMS)
Stephen Farry (LHCB)
Paolo Nason (TH)
Alessandro Tricoli (ATLAS)
Dieter Zeppenfeld (TH)

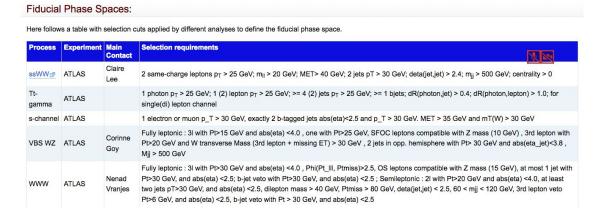
May Topical Meeting

Current Activities

- February / March meetings helped list analysis topics and identify contributors
- Since then we have attempted to bring together interested parties across experimental and theory communities on specific topics
 - To prompt discussions on specific topics
 - Share of experience, tools, MC samples and workload among contributors
 - o If you have not received e-mails from us that linked you to other collaborators, let us know!
- Immediate goal is to advance studies as fast as possible
 - Experimental HL-LHC analyses will need collaboration approval and need to keep on schedule
 - Stand-alone HE-LHC studies, that do not need collaboration approval, have looser time-scale but should get in shape soon
 - Theoretical calculations should become available (e.g. tables) soon to be used in experimental analyses
 - Experimental systematics approach should become available soon as well
 - Plan now for inputs needed from experimental groups for pseudo-data interpretations, e.g. distributions and uncertainties for PDF and EFT
- Work in parallel on chapter layout and sections that discuss theoretical tools

Documentation

- TWiki pages: https://twiki.cern.ch/twiki/bin/view/LHCPhysics/HLHEWG1
 - List of Contributors per section:
 https://twiki.cern.ch/twiki/bin/view/LHCPhysics/HLHEWG1#Draft_Table_of_Contents_of_repor
 - Table with experimental analysis phase spaces:
 https://twiki.cern.ch/twiki/bin/view/LHCPhysics/HLHEWG1#Fiducial Phase Spaces
 - Input to theorists to start calculations with same phase spaces as in experimental analysis
 - We invite more experimental teams to post more entries



Chapter draft

- Skeleton of WG1 chapter draft is already in overleaf
 - Strategy: contributors will provide convenors with LaTex text and we will integrate it in overleaf
- Target for whole chapter: ~150 pages.
- Page allocation per section is approximate
 - Introduction 10 pages
 - Theoretical Tools 25 pages
 - MC Generators (5 pages), High Order QCD calculations (5 pages), EW corrections (5 pages), PDF tools (5 pages), EFT tools (5 pages)
 - Electroweak processes 35 pages
 - Vector boson fusion processes (5 pages), Vector Boson scattering (10 pages), Triboson production (5 pages), Precision EW measurements (10 pages), Forward EW physics (5 pages)
 - Strong Interactions 26 pages
 - Jets and photons (8 pages), Ultimate Parton Densities (10 pages), Forward and Soft QCD physics (8 pages)
 - Top Physics 36 pages
 - Top cross section (5 pages), Top properties (10 pages), Top couplings (5 pages), Top mass (8 pages), FCNC (8 pages)
 - Effective coupling interpretations 10 pages

Schedule

- Next WG1 topical meetings:
 - o 14th May: EW meetings: https://indico.cern.ch/event/721951/
- Focus now is on fast progress on analyses
- Preparation for June 18th-20th meeting at CERN: https://indico.cern.ch/event/686494/
- Afterwards, focus will shift on analysis completion and draft write-up
- September 2018: Full Draft Chapters
- December 2018: Submission