Session 1 writeup

I INTRODUCTION	4		
II NLO AUTOMATION AND (N)NLO TECHNIQUES	8	2011 writeup	
1. PJFry – a C++ package for tensor reduction of one-loop Feynman integrals	8	•	
2. The GoSam approach to Automated One-Loop Calculations	12	18. Uncertainties in the simulation of $W+$ jets – a case study	115
3. Automation and numerical loop integration	18	· · · · · · · · · · · · · · · · · · ·	110
4. Towards the automation of one-loop amplitudes	23	V EXPERIMENTAL DEFINITIONS AND CORRECTIONS	165
5. The two-loop QCD virtual amplitude for W pair production with full mass dependence	27	19. Photon isolation and fragmentation contribution20. Event-by-event pileup subtraction using jet areas	165
6. Computation of integrated subtraction terms numerically	31		179
		VI MC TUNING AND OUTPUT FORMATS	189
III PARTON DISTRIBUTION FUNCTIONS	36	21. Tune killing: quantitative comparisons of MC generators and tunes	189
7. Which experiments constrain the gluon PDF in a global QCD fit?	36	22. Compact ASCII output format for HepMC	195
8. PDF constraints from Electroweak Vector Boson production at the LHC	44		
9. Heavy Quark Production in the ACOT Scheme at NNLO and N ³ LO	50	Note the separation not by group	
IV PHENOMENOLOGICAL STUDIES OF OBSERVABLES AND UNCERTAIN TIES	- <u>55</u>	but by topic.	
10. Finite-width effects in top-quark pair production and decay at the LHC	55	Can we do the same for 2013?	
11. Strong and Smooth Ordering in Antenna Showers	63		
12. Perturbative Uncertainties and Resummation for Exclusive Jet Cross Sections	67	Same topic structure?	
13. A NLO benchmark comparison for inclusive jet production at hadron colliders	77		
14. Phenomenological studies with aMC@NLO	89		
15. Probing corrections to dijet production at the LHC	92		
16. W+jets production at the LHC: a comparison of perturbative tools	97		
17. W Production in Association with Multiple Jets at the LHC	108		

What are we expecting?

- Introduction
 - includes NNLO wishlist, general discussion of advances in the last two years, and where Les Houches fits in
- NLO automation/NNLO techniques
 - update of Binoth Les Houches accord
- PDFs
 - snapshot of PDF uncertainty for gg->Higgs study
 - Apfel, and photon PDFs
 - meta-PDFs, PDF fits by reweighting
 - update of LHAPDF
- Phenomenology
 - Higgs+jets
 - W+jets(?)
- MC tuning and tools
 - anything from Rivet?
 - Mcgrid? Advances in re-weighting technology?

SVN

- Major problems in the past getting document to compile, dealing with conflicts between many individual contributions (even with a common tex format)
- SVN may help with that
- We can set up the framework with the outline and allow people to place their writeup where appropriate
 - or is that going to lead to problems?
- Still needs careful monitoring