

Minutes of the NLO MC Kickoff Meeting

Feb. 23, 2010

Participants: Fabio, Paolo, Jae, Sven, Rei and Vika

1. The scope of this group is to identify most optimal state-of-the-art event generator tools with the proper order of calculation to interface to cross section calculations of each signature groups' and provide them with guidance on the input parameters and specifics on them, such as mass line shapes and widths. (Many of existing event generators do not include them a priori but incorporating them, at least, into POWHEG is relatively simple.) The group will investigate tools that go beyond the LO+Parton Showering (Pythia, HERWIG), NLO with PS (MC@NLO, POWHEG, etc) and ME+PS (Sherpa, Madgraph+PS, Alpgen_+PS).
2. Study the proceedings from Les Houches workshop which contain comparisons on least one of the channels and use it as the guidance to examine other exiting event generators. Fabio will circulate the link to the proceeding to all members for this work.
3. The information on event generators will be compiled on the group wiki page.
4. A discussion on modularizing Higgs production and decay as a longer term project but this would require special attention on the interferences between initial and final state particles. This study should be performed at the level of the signature channel working groups and with x-sec calculators. If such a tool is found, the relevant MC implementation should be discussed/proposed. Paolo suggested an idea of decay database of reference events for the best prediction of Higgs decays.
5. One of the questions that need to be addressed is the multiplicity of final state particles from the power showering from radiations and what the impact to experimental searches are, such as jet veto in $WW^* \rightarrow l\nu\nu$ searches.
6. All processes will be covered in one of the available NLO w/ PS, except for ttH.
7. We agreed to have the next meeting a few weeks prior to the Freiburg workshop in mid March to see where we are.
8. Tentative goals for the Freiburg meeting:
 - a. Identify most accurate event generators for each Higgs production channel
 - b. Identify what the specific parameters are for each of the optimal event generators
 - c. Compile these information on the WiKi page and present this compiled information to the other groups

- d. Determine what can be improved and plan for the future
- e. (Perhaps) Write up this compilation in a paper shortly after the Freiburg meeting.