Prod status

- **Gridpack production @ IIHE [Gerrit]**
  - Remaining electroweak processes production is ongoing. The workload has been shared.
  - Writing a script for removing not-validated LHE or ROOT files is ongoing
    The user could supply a text file with a list of files name, a list of seeds, …
  - IIHE and IPHC do not understand the Pythia configuration for the ME/PS merging technique in exclusive mode. But the recipe works !

- **Gridpack production @ IPHC [Eric]**
  - Validating the exclusive production of processes ZToLL50 and WToLNu.
  - For small number of extra jets, no problem. Merging seems to work properly.
  - For 4 extra jets, jobs are still ongoing (it needs time).

  - Problem of integrator divergence for ZToLL50 with 3 extra jets.
    We can live with this problem (only 60% events are produced).
    To do: possible to avoid this problem by splitting the process in several subprocesses. This test could be done in parallel.
    Lorenzo does not understand why this problem occurs only fo r Z and not for W.

  - To do for validating these processes:
    - Wait for 4 extra jets production ends
    - Do the final merging validation plots
    - Validating quickly the content of ROOT files

- **Production processes with hard photons [Adam]**
  - News in the understanding of Frixionne's procedure
  - Two possible conclusions:
    - The implementation works properly but has no significant effect on the results.
    - The implementation does not work properly.

  The priority is: do we need this procedure for our sample production?
  To do: Adam + Lorenzo must read the motivations of this procedure in the literature and decide.

- **ME/PS merging in Pythia 8 [Adam]**
  - First genuine example of implementation of this technique in Pythia 8 applied to MG5 samples. Congratulations!
  - Jeremy's comment: the shapes are different. Why Pythia 6 and Pythia 8 do not give similar results?
    → one possible answer: the default configurations of theses programs are different. For comparing them, using a similar LHC tune.
  - Eric's comment: global efficiency is not relevant, efficiency for each jet contribution is better.

- **Sample cross section: Benjamin's code**
  - First C++ code with list of cross section values.
  - Some values are missing in particular single boson which must be computed by NLO generator.
  - This code is not the final one to use in the analysis but the std::map structure could be kept.
  - Jeremy's comments:
    - One ROOT sample a process is not a good idea. The key map could be the beginning of the ROOT file name:
      "ZToLL50" for "ZToLL50_sample1.root", "ZToLL50_biloute.root", …
    - Write explicitly the computation of the cross section values by specifying BR values
  - Kevin is responsible for the cross-check and the completion of this work.

  To do: The chairman would like the complete cross section table for the next meeting. If Kevin has any problems, he can contact Lorenzo for team-up. The C++ class is not the priority for the moment.

- **Number of events to produce [Eric]**
  - Excel spreadsheet with 2 tabs: inclusive and exclusive production
  - The final cross section values are missing and replaced by MG values x scale factor (= 1.2)
  - Shimaa noticed a problem with the cross section of the inclusive ZToLL50 and WToLNu. In fact, the value given in the wiki for the inclusive production is the value for 0 jet.
  - Gerrit's comment: some values are missing for Higgs samples.
  - To do: use this Excel file for the next meeting with final cross sections values → decide on the number of events to produce.

- **Higgs sample production?**
- **BSM ttbar production ?**

Simulation status

- **Resolution studies [Jeremy]**

  He looked through the Delphes code to see how resolutions are simulated.

  → Electrons and muons are not treated in a same way: absolute resolution for electron, relative for muon

  → Log normal distribution is used for smearing ECAL, HCAL energy deposits.

  Conclusion: no big problem observed, reasonable results → OK

- **Lepton & photon isolation [Eric]**

  Bug found in sumET observable in DelphesMA5tune (shame to Eric) and fixed.

  Implementation of Pflow isolation in the data format

  → new release of DelphesMA5tune & MadAnalysis5 available in SVN

  → ROOT files must be reprocessed [TTsemilep_madspin_prod1 has already done by Eric]

  To do:

  - Shimaa could apply again its isolation analysis for validating this new implementation.
  - Needs to share with IIHE the ROOT files produced by Eric ?!?
  - BSM single-top ROOT files to be reprocessed.

- **Documentation of the AnalysisHelper class [Lorenzo + Eric]**
  https://sbgcmswikidoc.in2p3.fr/doku.php?id=topfcnc_analysishelper
  To do: implementing corrections:
  - Pointer to matching parton could be null if no parton found.
  - IsTrackIsolated() return a bool.
  - Documenting the CSV method which returns an integer value.

  Lorenzo's comments:
  - People are invited to make a list of wished functions to be implemented
  - Gerrit could use the syntax of Caroline's b-tagging functions for designing c-tagging functions. Only the efficiency formula should be different …