Few thoughts to animate the round table

(thanks to the contributors)

2nd MPI@LHC

Progress with respect to the 1st MPI w/s

- First LHC papers, further papers from Tevatron, RHIC, etc.
  - Tevatron: Emphasis on high lumi DPS measurements
  - LHC: Traditional MB/UE/Diffr phenomenology + some "surprises"

  → long range correlations in high multiplicity events

  HI inspired interpretations: QG? Angular conservation in MPI?
- Progress in MC generators
  - Sherpa, Herwig++, Pythia8, EPOS, …
- Progress in MC tuning
  - Professor and manual tunes using the fresh LHC data
- MPI TH progress
  - 2009 and 2010 publications with "MPI" keyword:

  [Treleani, Strikman, Maina, Diehl, Lipari, Lusignolo, Magri, Skachkov, Abramovsky, Nagy, etc. etc. etc.]

MPI w/s Ideas for improvements

- While aiming at improving things we should not discard the good features
  - Bringing together heterogeneous communities (pp/central, pp/FWD, HI, EXP, TH, Pheno) focusing on research lines dealing with MPI
  - Plenary meetings
- Format
  - General feeling that there should be more time allowed for discussion
  - Introductory talks may be useful, not only for students
  - Talks still tend to start “in medias res” (adequate for specialists)
  - …
- Content
  - This is not the MBUE w/g, of course there are interplays but in this context we should rather try to focus on MPI concepts
  - MC models are certainly essential tools. Tuning them is important for any physics programme.
    - Having alternative tunes accounting for TH uncertainties is also important
    - Pursuing universality may also be instructive but…
  - In our context we want to go well beyond these MC-related goals!

List of requirements and Open issues

Initiatives to strengthen the contacts between the different communities: terminology, benchmarks

- Quote σ_{eff} in MC tunes and in measurements (where applicable)
  - σ_{eff} from geometry
  - σ_{eff} from interaction counting (in particular from ratio of momenta)
- …
- pT cut offs regulating divergences and the amount of MPIs in MC models are often key MC parameters, their energy dependence "reminds" important observables related to diffraction: Pomeron intercept etc. Would it be possible to make an effort to give a deeper physical meaning to them?
  - Selecting "hard" objects to measure σ_{eff} is not sufficient to describe essential observables which depend on "soft" additional interactions: UE activity, isolations, Jet pedestals etc.
- Successful MC models/tunes favor color connections between interactions
  - Quite few criticisms to this approach from the TH (not MC) community
  - Are there alternative approaches? Dynamical description of interacting hadrons?
- …

→ Let's complete at least the list of requirements early 2011 and let's try to implement the recommendations in the proceedings.

Proceedings of the 2nd MPI@LHC w/s and 3rd MPI@LHC w/s

- Proceedings (deadline April 30th 2011)
  - Paper version? → DESY-PROC
  - Electronic version?
- Candidatures for the 3rd MPI@LHC w/s
  - Desy (Zoltan Nagy)
  - …
    - Late Autumn 2011
      - Adequate for 2011 LHC high lumi run
      - An early workshop may help to avoid proliferation of similar initiatives re-directing the resources in our context
        - » Easy to predict an increasing interest in MPI bkg to seaarches
    - Late Spring 2012
      - Back-up option