Summary of LPCC MB&UE WG Meeting

Deepak Kar

23rd November, 2015
MPI@LHC, Trieste
LPCC MB&UE WG
Joint ATLAS/CMS Underlying Event/Minimum Bias Meeting

Friday, 14 August 2009 from 08:00 to 17:30 (Europe/Zurich)

CERN (40-4-C01)

Friday, 14 August 2009

08:30 - 09:50 Overview

08:30 Welcome/Introduction 10’
Speaker: Rick Field (Univ. of Florida)

08:45 New Analysis Centre 15’
Speaker: Michelangelo Mangano (CERN)

09:00 Introduction to UE and MB studies 30’
Speaker: Rick Field (Univ. of Florida)

09:35 Brief review of Tevatron Results 15’
Speaker: Deepak Kar (Inst. fuer Kern- und Teilchenphysik (IKTP)-Technische Universita)

http://indico.cern.ch/event/65178/
Brief Timeline

• Evolved from a cross-collaboration meeting organised by Rick, Arthur and D.K before first LHC data taking

• Was very useful in synchronising Run 1 analysis strategies from different experiments, enabling us to cross check each others results

• Hoping to carry on to Run 2
The emphasis is on common...

- Selection (analysis phase space)
- Object definition
- Binning
- Plots
- MC model(s) to compare to
But not...
Common Plots from Run 1

Very good agreement between the experiments
Common Plots from Run 1

Similarly for UE, we all agree!
Run 2

- First open meeting on 19th November (last Thursday) [http://indico.cern.ch/event/393716/](http://indico.cern.ch/event/393716/)
- Only preliminary results from the experiments, not much common yet.
- What did we agree on*?  

*I hope we did ;-)
Suggestions

- No longer consider charged particles $30 < \tau < 300$ ps as primary particles: decays treated as secondary particles. (then providing MC-dependent correction factors will be redundant for cross-experiment comparison)

- Common phase spaces: $|\eta| < 0.8$, $p_T > 0.5$, 1 GeV

- Low $p_T$: 100 or 150 MeV? Extrapolate to zero?
New Primary particle definition in ATLAS

- Strange Baryon production rates described better by EPOS (ALICE: arXiv: 1406.3206)

As seen in Roberto’s talk earlier
Ideas/Discussion Points

- Any unfolded distribution from inelastic cross-section measurement? (ATLAS) MBTS hits is not a physical observable.

- Forward tagging events? ATLAS+LHCf/ALFA, CMS +TOTEM/CASTOR, ALICE, LHCb (proposed common region $3.1 < \eta < 4.5$. Different trigger, $p_T$ measurement capabilities)

- More coordination about tuning, tune uncertainties among experiments

- How to reconcile measured lower inelastic cross-section with Pythia8 higher values
Fixing H++ on the fly!

Andrzej Siodmok
Hard to find a discriminating variable using jets in Z+3jet events

UE activity is affected and (MPI) can be tuned to give a similar description

http://arxiv.org/abs/1511.03215
Tasnuva Chowdhury and D.K