Introduction

Ricardo Goncalo

HSG5 H->bb weekly meeting, 22 November 2011

News! News! News!

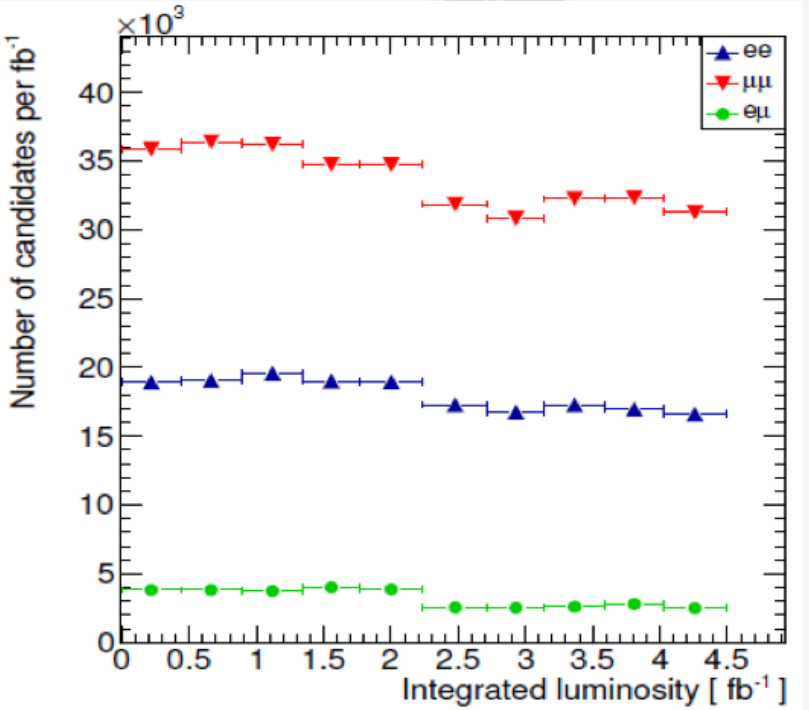
- First meeting of the Jet Substructure and Jet-by-Jet Tagging group: https://indico.cern.ch/conferenceDisplay.py?confId=163049
- Boosted Higgs analyses please make sure tofollow these meetings closely!

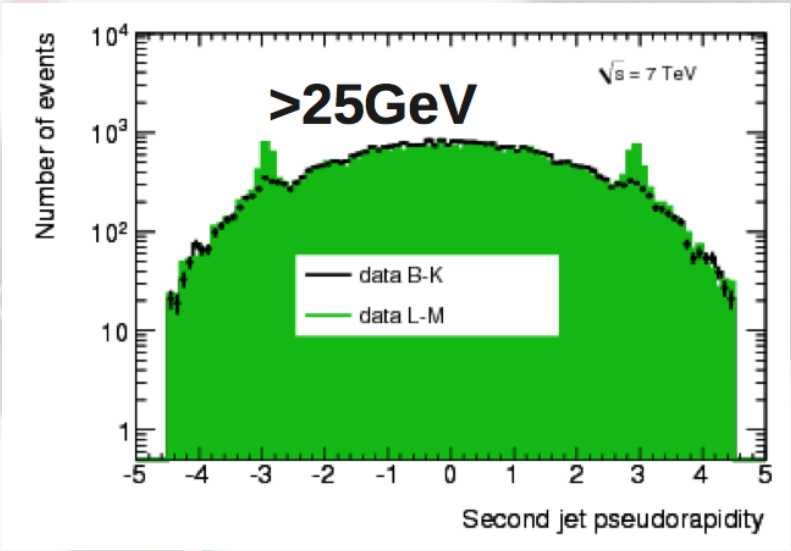
- Open EB today (2pm, replacing ATLAS Weekly) will focus on LHC running scenarios for 2012: https://indico.cern.ch/conferenceDisplay.py?confId=106722

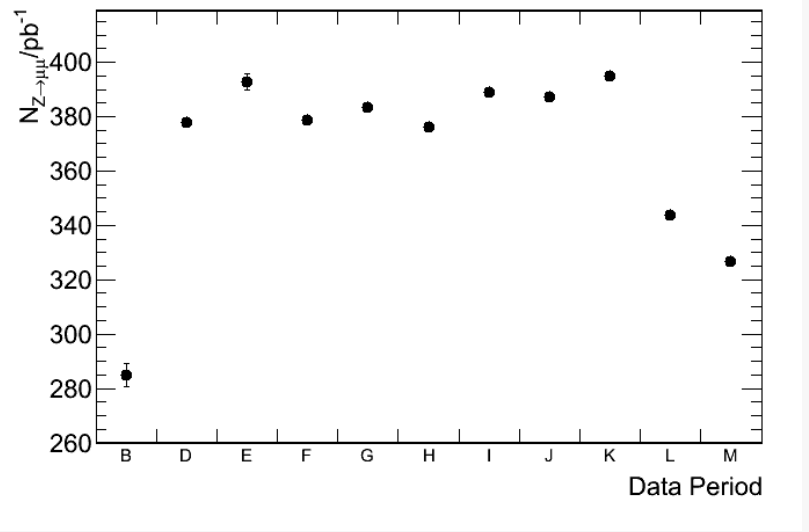
- 5th LHC Higgs cross section workshop http://events.lal.in2p3.fr/conferences/LHC-Higgs-Workshop/

2011 Data Issues

- Period dependence of rates
  - Top right: ll events in H->WW analysis
  - Bottom right: Z->μμ in H->4l analysis
    - Staco Comb+Segment-tag; p_T>20GeV; rel. trackIsolation(ΔR<0.2)<0.15
- Bottom left: "ears" at |η|=3 have been growing?
  - Effect decreases with increasing jet p_T
- https://indico.cern.ch/getFile.py/access?contribId=7&resId=0&materialId=1&confId=163361







December Note(?)

- First editorial board meeting – introduced issue
- **Not yet done:**
  - Run on all 2011 data (missed part of period M and some other data files)
  - Run on MC11b datasets – status?
  - Move to METRefFinal done in analysis software but unchecked
  - Apply recommended electron fudge factors (appeared on Friday – see text file attached to agenda)
  - Treatment of inefficiency due to bad muon trigger region in period L (trigger muon scale factors appeared on Saturday – attached to agenda)

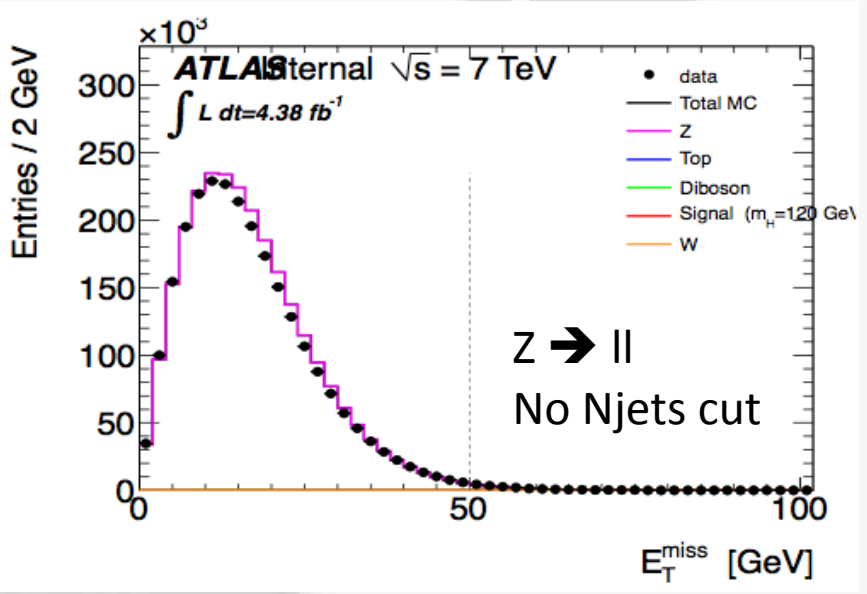
- **Points of concern/to follow up**
  - Availability of MC11b datasets
  - Vertex multiplicity/MET/pile-up due to pythia 8 minbias events in mc11 (ongoing)
  - Data/MC agreement in 0-jet bin of WH analysis (note analysis cut on Njet>2)
  - b-tagging scale factors - p_T-dependence may sculpt signal, especially due to bin edges
  - Jet systematics – recommendations?

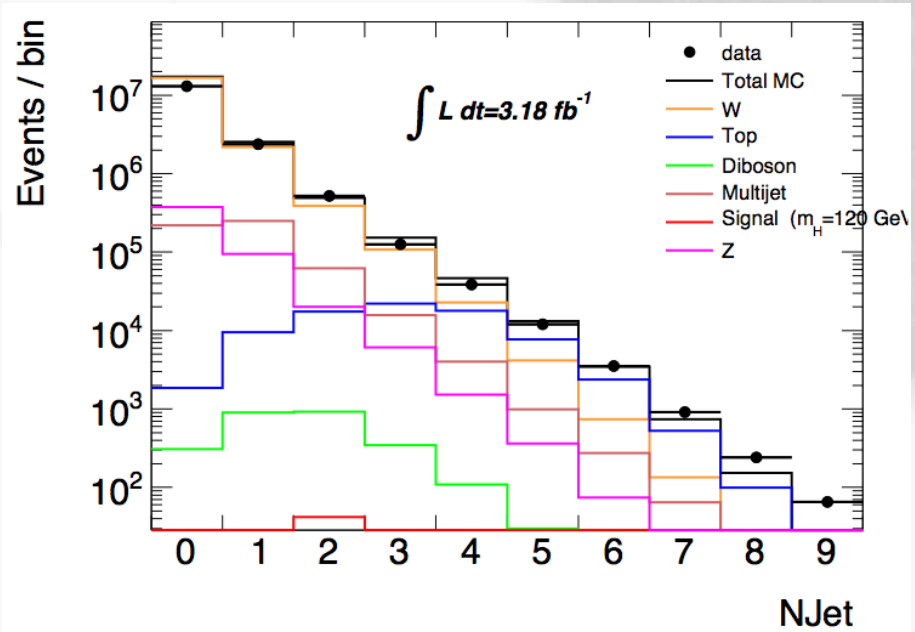
- **Reminder of timeline:**
  - Higgs approval: aim for 25, but no margin!
  - Circulation to ATLAS for 1 week for comments (up to 2 Dec. at latest)
    - Can be reduced to 3 days if we find a nice peak at 115 GeV, confirmed by H->γγ ☺
  - Public presentation plus 1 week for last comments (9 Dec. at latest)
  - CERN Council meeting starts 12 December

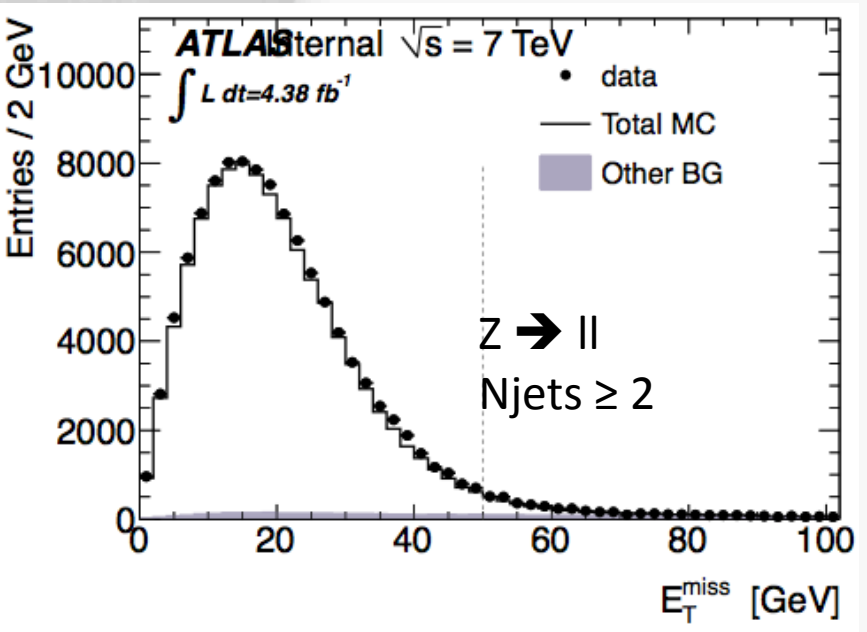
MC11 vs release 17 data

A.Mehta

- E_T^{miss} in release 17 – **MC11a**
- In ZH analysis (fake E_T^{miss}) effect only visible before cut on $N_{jets} \geq 2$ – $p_T^{jet} > 25$ GeV
  - Seems to confirm soft activity as source of mismatch
  - Means we're dominated by jet energy deposition and not sensitive to soft activity
  - Suggests use of cut on MET significance ($E_T^{miss}/\sqrt{\Sigma E_T}$) to avoid problem
- Disagreement (≈x2) in WH for Njets = 0
  - But no vertex reweighting applied yet etc etc
  - Not there in ZH







Backup