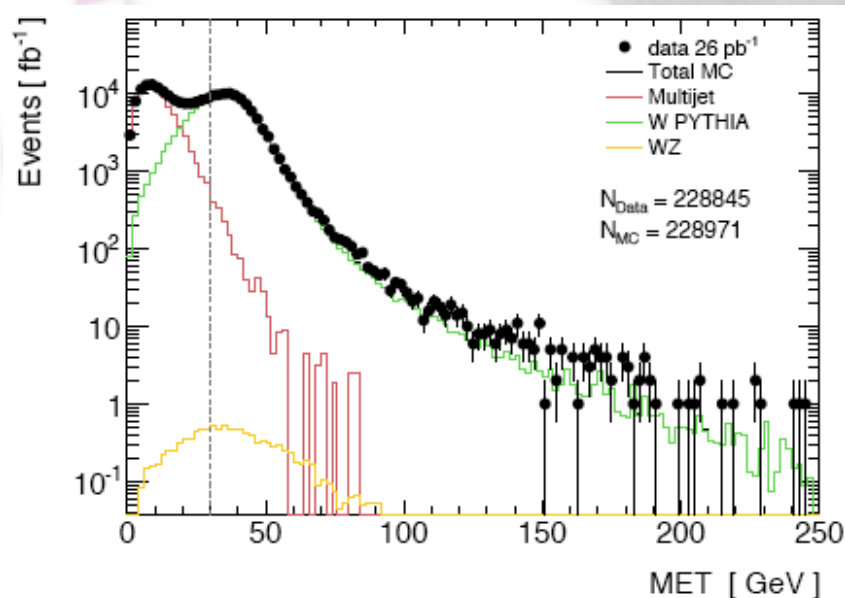


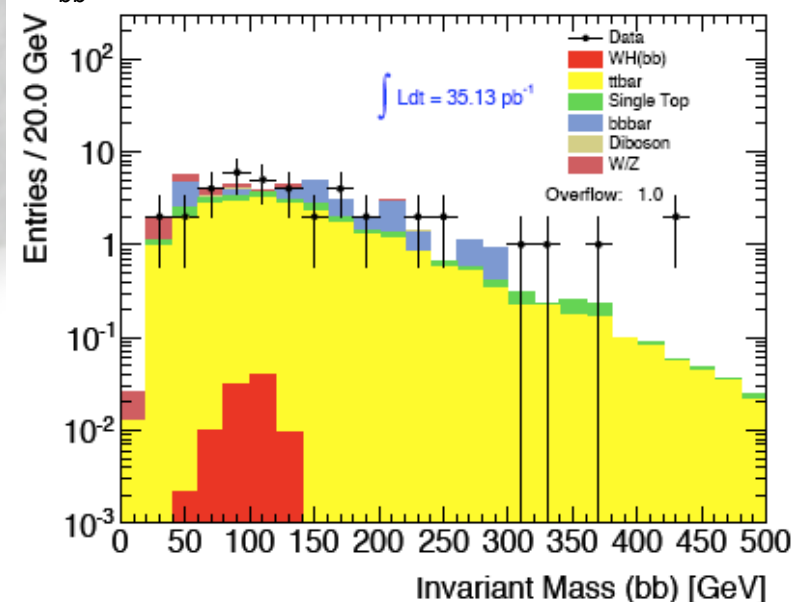
# H->bb activity - I

- No notes for Winter conferences – aiming to have WH, ZH, possibly ttH for Summer
- **WH and ZH** analyses progressing in parallel – concentrating on **non-boosted** for now
  - Most activity from Birmingham/Liverpool, Wisconsin, LMU Munich, Lisbon at the moment – also from Carleton, Argonne, Glasgow and Royal Holloway
  - Several groups showed cut flows agree to reasonable level; description of backgrounds reasonably under control; currently moving to rel.16, then reproduce results
- First impression of sensitivity, definitely NOT to be quoted:
  - Exclude 56 x SM in WH and 139 x SM in ZH with  $35\text{pb}^{-1}$  (e &  $\mu$  channels combined)
  - IP3D+SV1,  $m_{bb} \in [70, 130]$  GeV, assuming 10% uncertainty in S & B  $\oplus$  11% Lumi

First look at rel.16



$m_{bb}$  in WH  $\rightarrow$   $\mu\nu b\bar{b}$  channel – rel.15



# H->bb activity - II

- **Boosted WH/ZH** to follow – more relevant for higher lumi
  - Activity in UCL London at the moment – commission jet substructure observables
  - Much interest from rest of group currently involved in non-boosted analyses
- **ttH** analysis progressing – developing multivariate analysis
  - Glasgow involved, Edinburgh just joined... a Scottish Higgs channel!
- **VBF H->bb** – recent activity from Victoria
  - Rough estimate: sensitivity between hh and ll channels of VBF H->ττ (no trigger, 30fb<sup>-1</sup>)
  - Trigger is crucial in this analysis – currently working on this, in contact with jet trigger
- **SUSY H->bb** – activity in Freiburg within SUSY
  - See ATL-COM-PHYS-2011-030 – Atlfast II study
  - Challenging: no discovery at  $\sqrt{s} = 10$  TeV, 10fb<sup>-1</sup>
  - Becomes quite interesting for  $\sqrt{s} = 14$  TeV, 30pb<sup>-1</sup>, at  $m_0 \approx 500$ GeV,  $m_{1/2} \approx 350$ GeV (mSUGRA)
  - Trigger is crucial in this analysis – ongoing work

