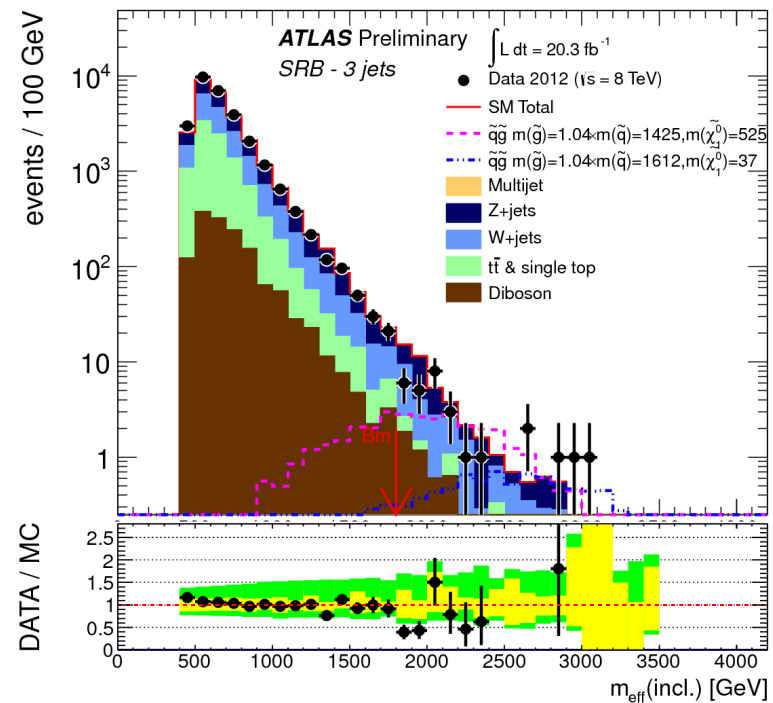
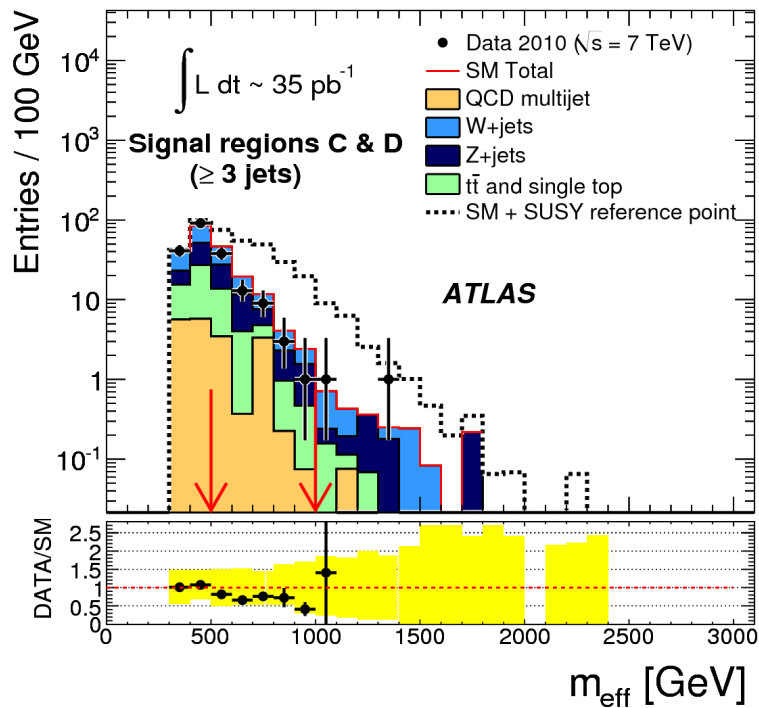


Treatment of Uncertainties

- I would like some clear feedback of how we should be treating uncertainties.
- I think we might have different approaches for different scenarios:
 - eg. for searches – we want theory uncertainties at detector level and constrain these if possible/feasible.
 - eg. for unfolding – we want to re-weight MC to match data, constrain things and then compare unfolded measurement with full theory uncertainties
- We also have different types of MC.
 - NLO MC:
 - Scale variations – should off-diagonal terms be ignored?
 - What happens if we require more jets than present in the ME?
 - Other things that we should vary, PS starting scale, MPI, etc.
- Pure parton shower (Pythia, Herwig++ etc.)
 - James showed how ATLAS varies parameters for $t\bar{t}$ and how we have reduced uncertainty using data.

Treatment of Uncertainties

- LO ME+PS (what we use the most):
 - Which scales should be varied together / separately.
 - What about going beyond the number of partons in the ME – currently look at varying the number considered.
 - Can scales be constrained across phase-space. CMS does this a lot, ATLAS currently avoids it (other than Higgs analyses).



- MEPS @ NLO:
 - Which scales should be varied together / separately.
 - What about scales of additional LO legs.