ttH(bb) Analysis Update

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February 10th, 2016

My introduction

- Status of overall analysis
- Timeline heading toward ICHEP

Current Status

- Combined limits are slightly worse than resolved-only limit
- First test: run boosted and resolved MVA in boosted SR to compare separations
- Several optimization studies:
  - -- Improved input variables
- First draft of INT note ready
- Create common code and small input ntuples to distribute work, parallelize the processes

See Sam Crawley's Talk for details.

Common Code

- Common ntuple-analysis code to produce MVA input trees
- Make work on MVA easier to add new variables, tweak parameters yet maintain consistency with baseline
- Make it easier to share workspaces for fit and crosscheck

See Sam Crawley's Talk for details.

Long-term Schedule

- 23 March: Full Analysis Review
- 7-14 June: Check with new data ($\sim \mathcal{O}\left(1/\text{fb}\right)$)
- 22 June: HTop Pre-Approval
- 30 June: Unblinding Approval
- $\sim$ 1 July: ICHEP Dataset ($\sim \mathcal{O}\left(3 - 8/\text{fb}\right)$)
- 7-14 July: Higgs approval with full dataset
- 21 July: Final Date for ATLAS Circulation of all CONF notes

Middle-term Schedule (by 23 March)

- Optimised selection

  -- jet p_T
  -- b-tagging point
  -- lepton p_T and isolation

- Experience with TRF needed (ongoing)

- Bottlenecks include:

  -- QCD estimate
  -- tt+light model systematics and corrections
  -- tt+cc systematics

Summary & Plans

- Finish isolation studies
- Syncronizing with Matteo
  - -- Found a potential source for discrepency, reduces to $\sim 10\%$ with ``Grad''. Examining other isolation settings.