First look at Spring15 MC

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Outline

- We have made a first estimate of the expected limits using Spring15 samples, and compared them to the PHYS14 and 8 TeV results:
  - PHYS14: 10/fb and
  - Spring15: 3/fb scenario

- Starting point:
  - Latest CMSSW_7_4_12_patch4
  - Latest Spring15 MC samples ([slide 3](#))
  - Latest preselection, PHYS14 - like final selection
  - The PHYS14 lepton MVA with the 0.8 WP

- Produced:
  - Number of jets and BDT output
  - 2lss (ee, em, mumu), 3l, 4l final states
  - Expected 50% C.L. limits

nJets and BDT distributions for the 2lss
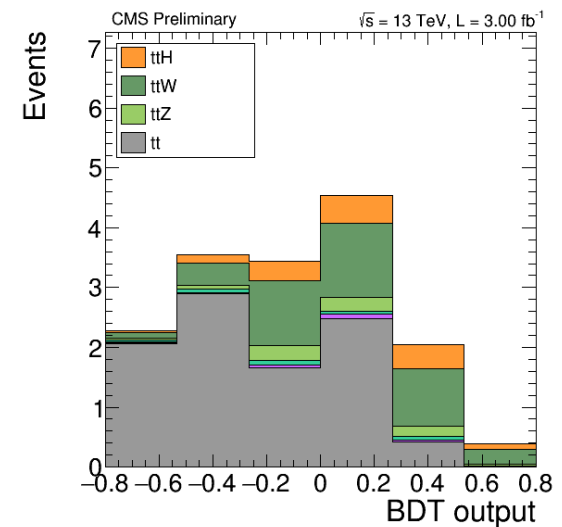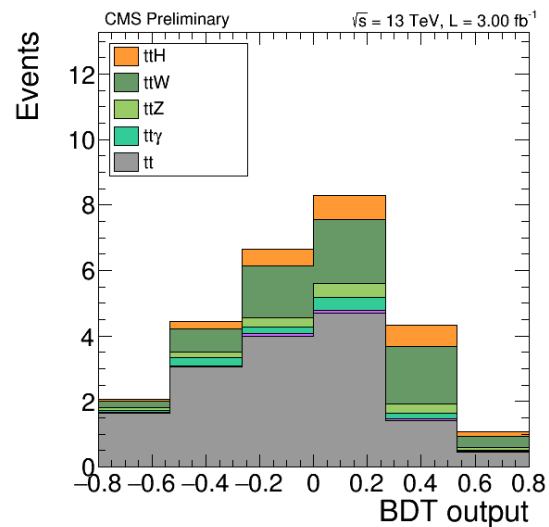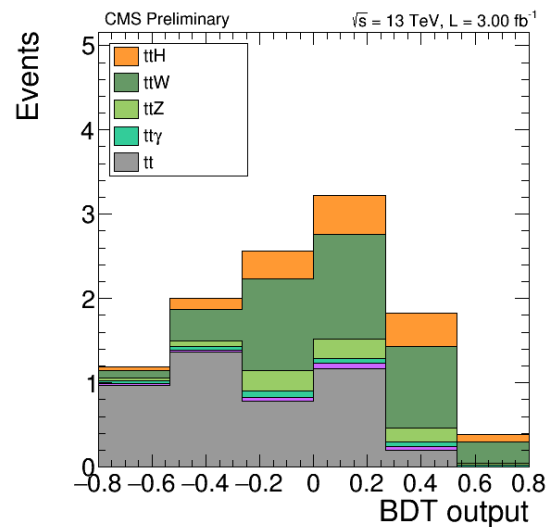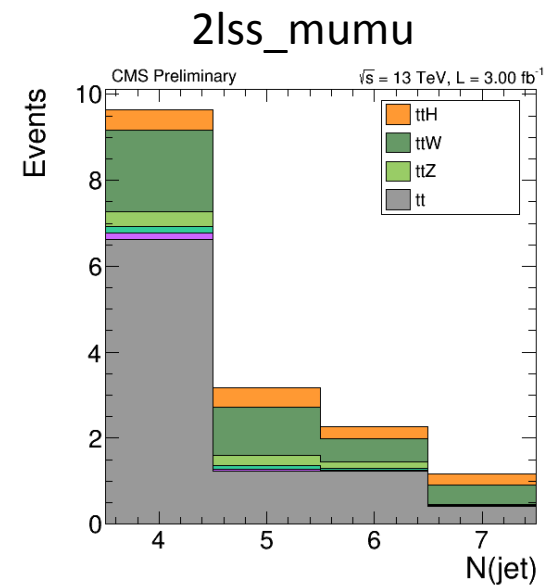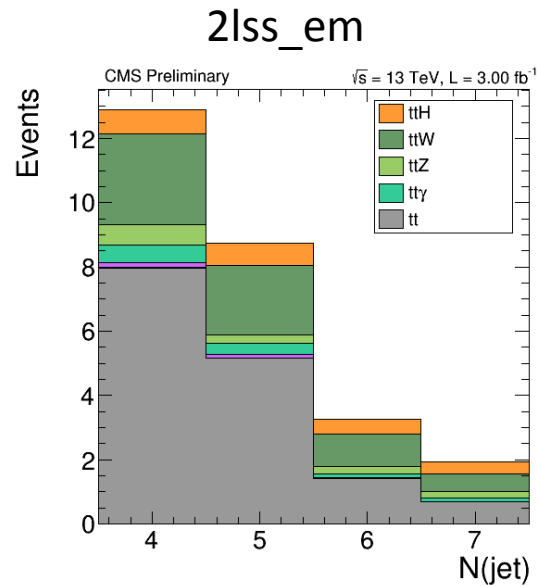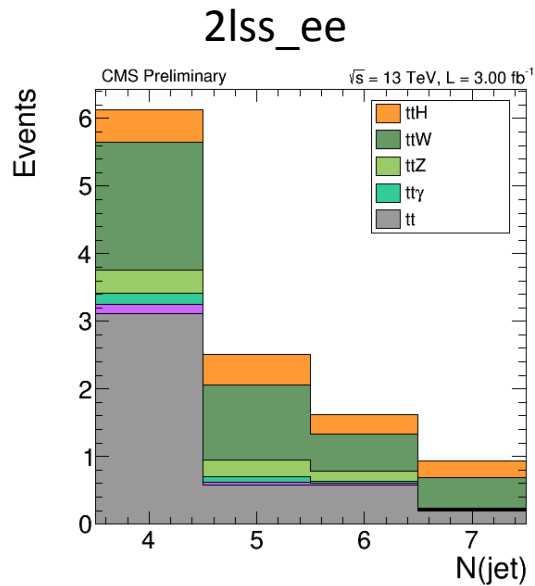
3l_tight and 4l

3l_tight
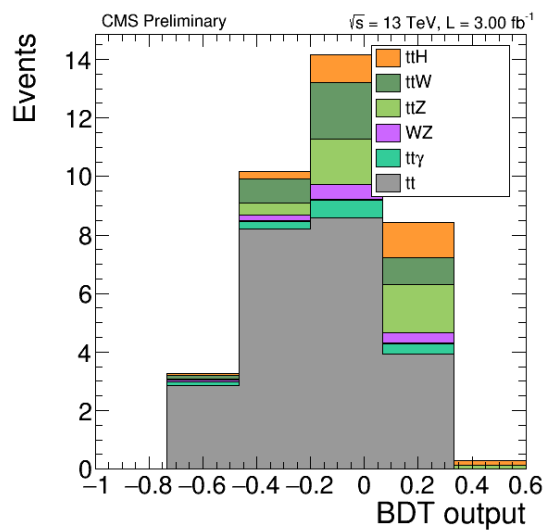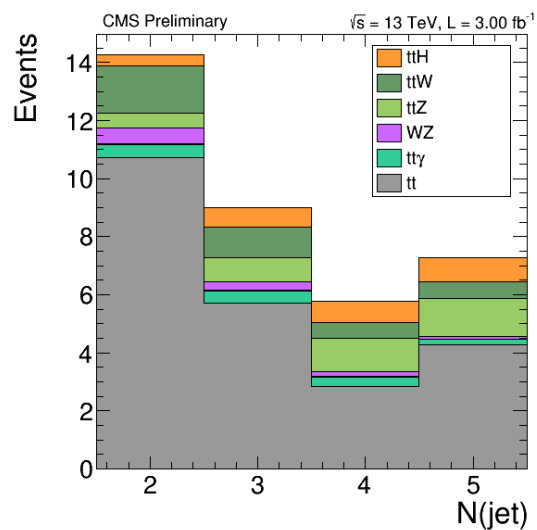
4l

Expected (50% C.L.) limits at 3/fb

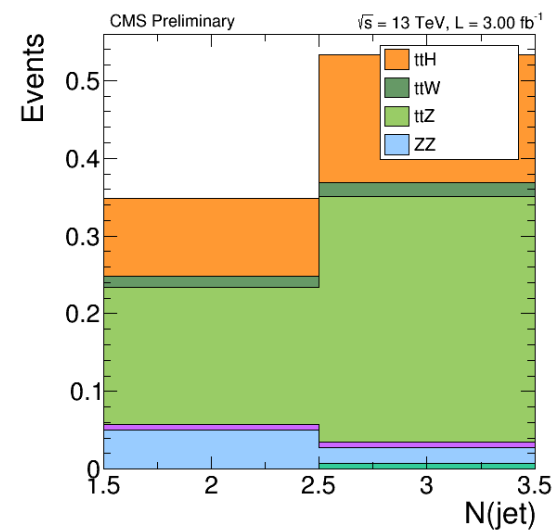|	2lss_ee	2lss_em	2lss_mumu	2lss	3l_tight	4l	comb
8 TeV (20/fb)	9.65	5.11	4.39	3.39	3.77	8.84	2.38
PHYS14 (10/fb)	4.14	2.49	2.59	1.76	2.73	6.28	1.48
Spring15 (3/fb)	10.22	4.92	5.90	3.45	4.23	12.09	2.49

- The limits obtained with Spring15 MC are about 2x larger than the PHYS14 results, as expected due to reduced luminosity (10 → 3 /fb)

Synchronization status

- Twiki:
  - https://twiki.cern.ch/twiki/bin/viewauth/CMS/TTHmultileptonsFor13TeV

- The results obtained:
  - Muons: 10197
  - Electrons: 9979
  - Taus?
  - Jets and MET?

- Changes:
  - sip3D < 8
  - Printed out: ptRelv2 and jetPtRatioV2
  - Updated Muon Eff. Areas
  - No triggers

Summary and next steps

- First try to produce the signal extraction distributions and the expected limits with Spring15 yield with the expected results

- Continue the work on the synchronization
  - Electrons and muons
  - Taus, Jets and MET

- We have produced preliminary results with the 2D MVA approach, will present them next week, together with the study of angular variables

- Categorization studies (slide 12) are also ongoing