

Update in codes and samples

Yang Tianyi

Analysis code

- Online now: <https://github.com/tiyang-hanyang/rDataFrameLight/tree/master>
- Providing functions:
 - Skimming
 - Histogram extraction
 - Plotting with Hanyang style
- Based on RDataFrame.
- Fully JSON control.
- TODO:
 - Add function of p_T fixing
 - According to Matteo Bonanomi, the $m_{\mu\mu}$ can be fixed by Rochester correction but the p_T shift contain one additional DY mis-modeling.

Code Improvement TODO list

- Sungbeom and Wooyeon has been using and contributing to the code as well.
- Wooyeon reported failing in skimming with different format folder, I will tune this soon.
- Welcome further usage and suggestions!

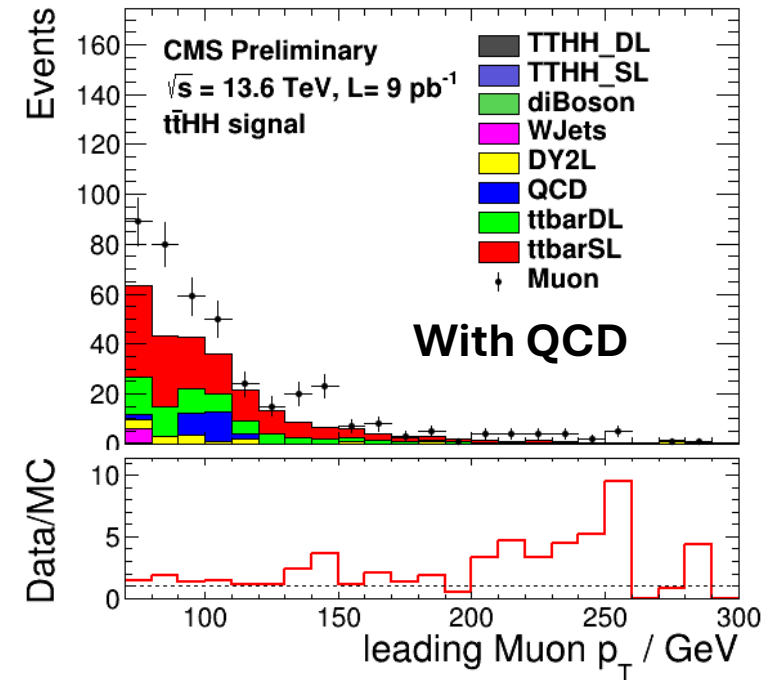
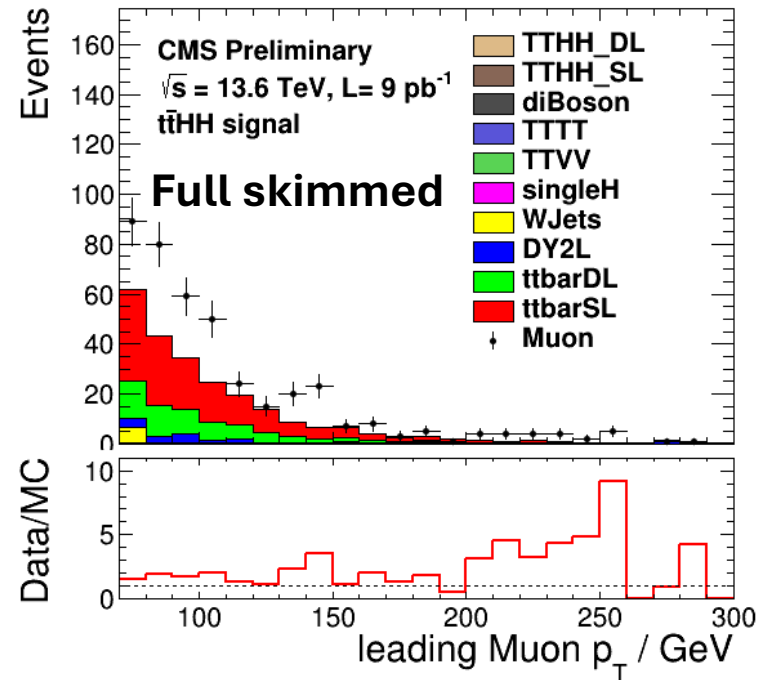
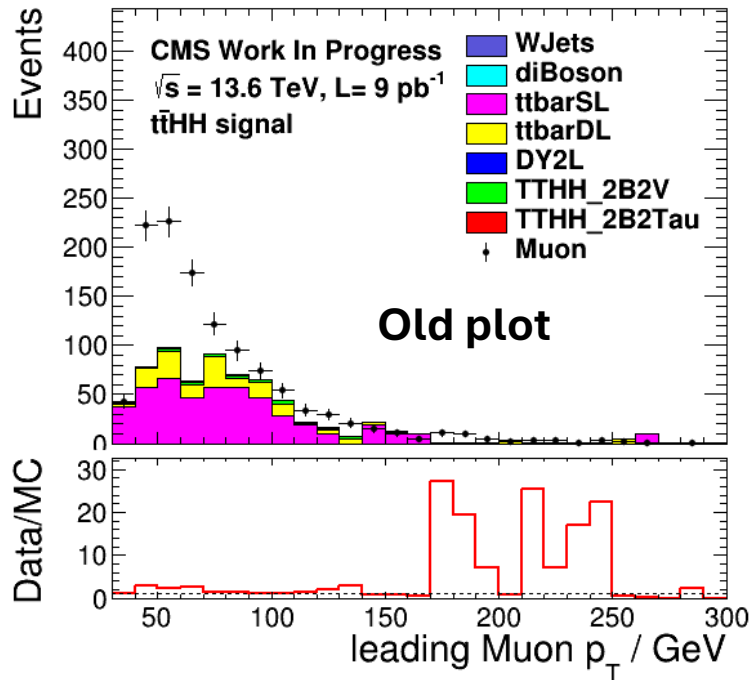
Sample

- Signal available now:
 - In /home/tiyang/sample/mc/ has 2B2V, 2B2 τ , SL, DL samples
- Background samples added:
 - TTTT, TTWH, TTZH, TTWW, TTWZ, TTZZ, TTH (Hbb and HZZ)
 - Seems no TTHWW in DAS.

Name	XS /pb (XSDB)	DAS
TTTT	0.009652	TTTT_TuneCP5_13p6TeV_amcatnlo-pythia8
TTWH	0.001252	TTWH_TuneCP5_13p6TeV_madgraph-pythia8
TTZH	0.001288	TTZH_TuneCP5_13p6TeV_madgraph-pythia8
TTH+Hbb	0.3320	TTHto2B_M-125_TuneCP5_13p6TeV_powheg-pythia8
TTH+HZZ	0.01493	TTH_Hto2Z_4LFilter_M-125_TuneCP5_13p6TeV_powheg-jhugenv752-pythia8
TTWW	0.008203	TTWW_TuneCP5_13p6TeV_madgraph-madspin-pythia8
TTWZ	0.002715	TTWZ_TuneCP5_13p6TeV_madgraph-pythia8
TTZZ	0.001579	TTZZ_TuneCP5_13p6TeV_madgraph-madspin-pythia8

MC comparing with data

- Selection the same as the previous slides



- The full skimmed dataset get the MC distribution better.
- TTTT, TTVV and single Higgs does not contribute much.
- QCD has some contribution, but small