Weekly Report
NTUA
27/3/2020

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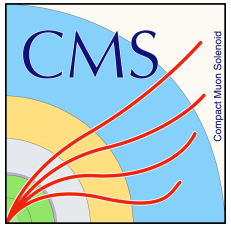


Status Report

- Analysis:
  - New Method for extracting Nqcd in signal region
    - Fit not possible because 0btag and 2btag QCD have very different shapes
  - Unfolding
    - Result of the fit has a small deviation regardless the method we are using
    - Signal Extraction--> Unfolding to parton or particle level and comparison with 2016 paper results

Measured dist from data

QCD shape taken from MC

$$S(x_{reco}) = D(x_{reco}) - N^{(2)}_{QCD,reduced} C^{shape}_{QCD}(x_{reco}) Q(x_{reco}) - B(x_{reco})$$

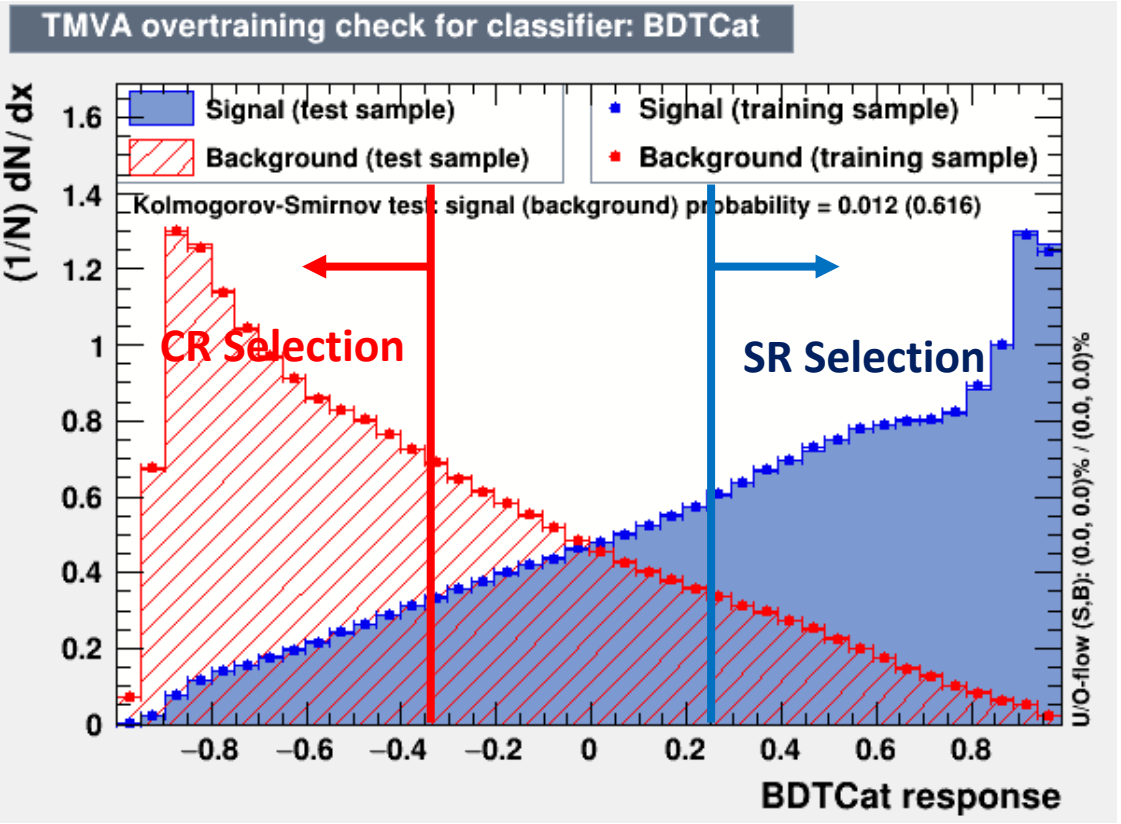
Fiducial Yield

ABCD Method

QCD shape correction factor

Subdominant bkg shape and contribution (MC)

Workaround



For selecting a Control and Signal Region we apply the following:

Signal Region

- Basic Selection
- Medium b-tagging WP
- Top Tagger Cut (> selected WP1)

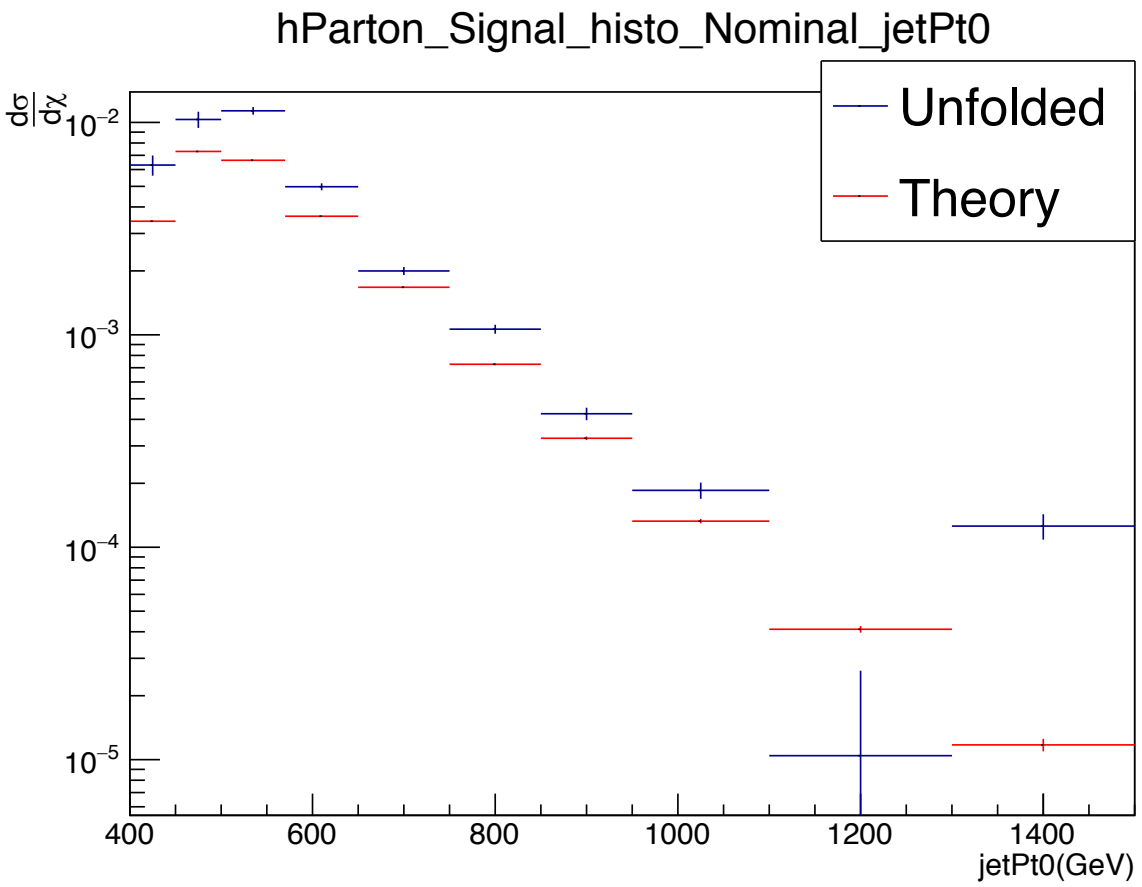
Control Region

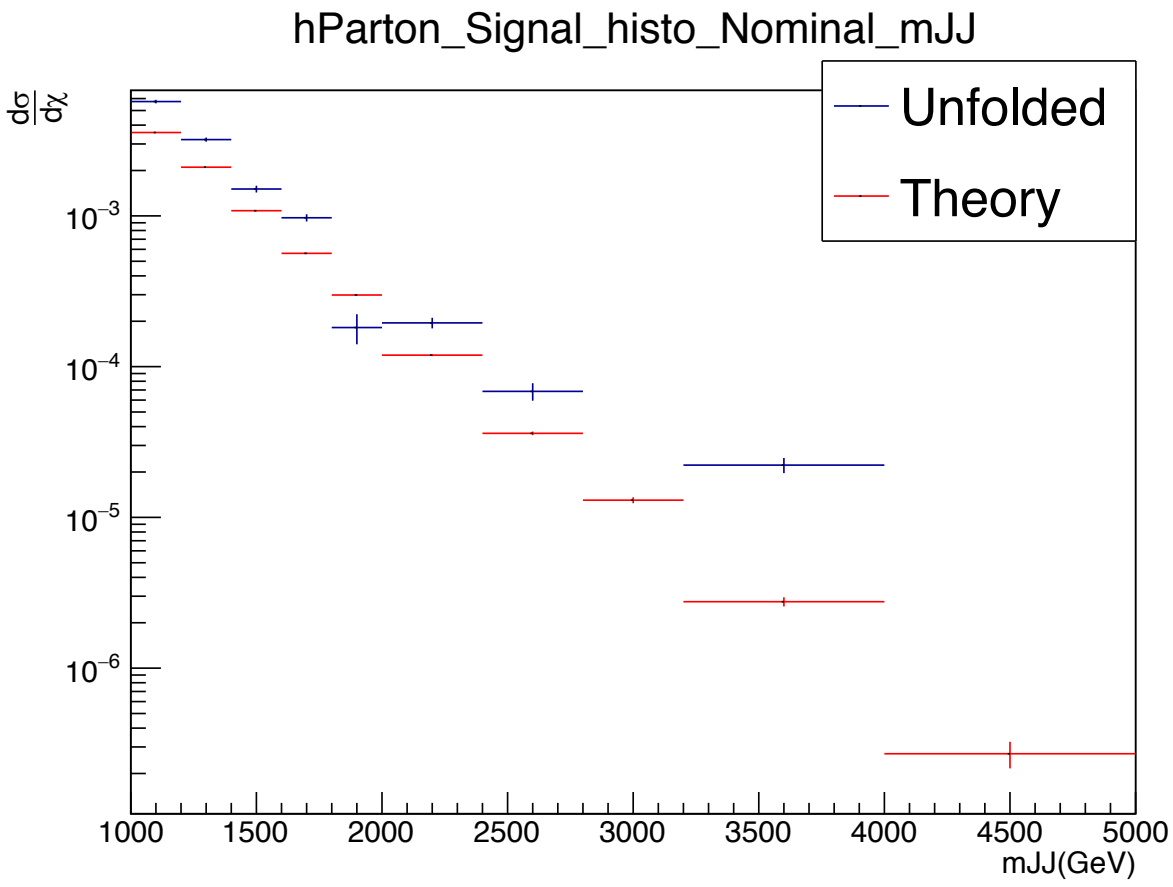
- Basic Selection
- NOT Loose b-tagging WP
- NOT Top Tagger Cut (< selected WP2)

Top tagged \ B tagged		
	Both jets !B-tagged	Both jets B-tagged
Both jets TopTagged	A	C (Signal Region)
Both jets !TopTagged	B	D

$$C = \frac{A}{B} D$$

Unfolding Parton





Unfolding Particle