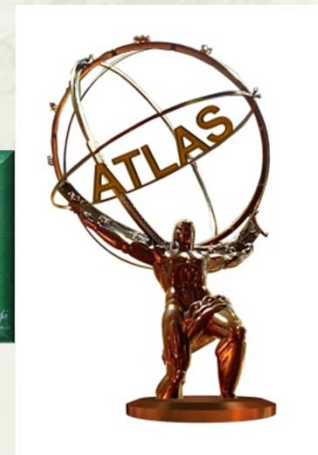# Status/Updates of VBF MVA

Jin Wang

IHEP Informal Meeting 2014-01-21

Reweighting

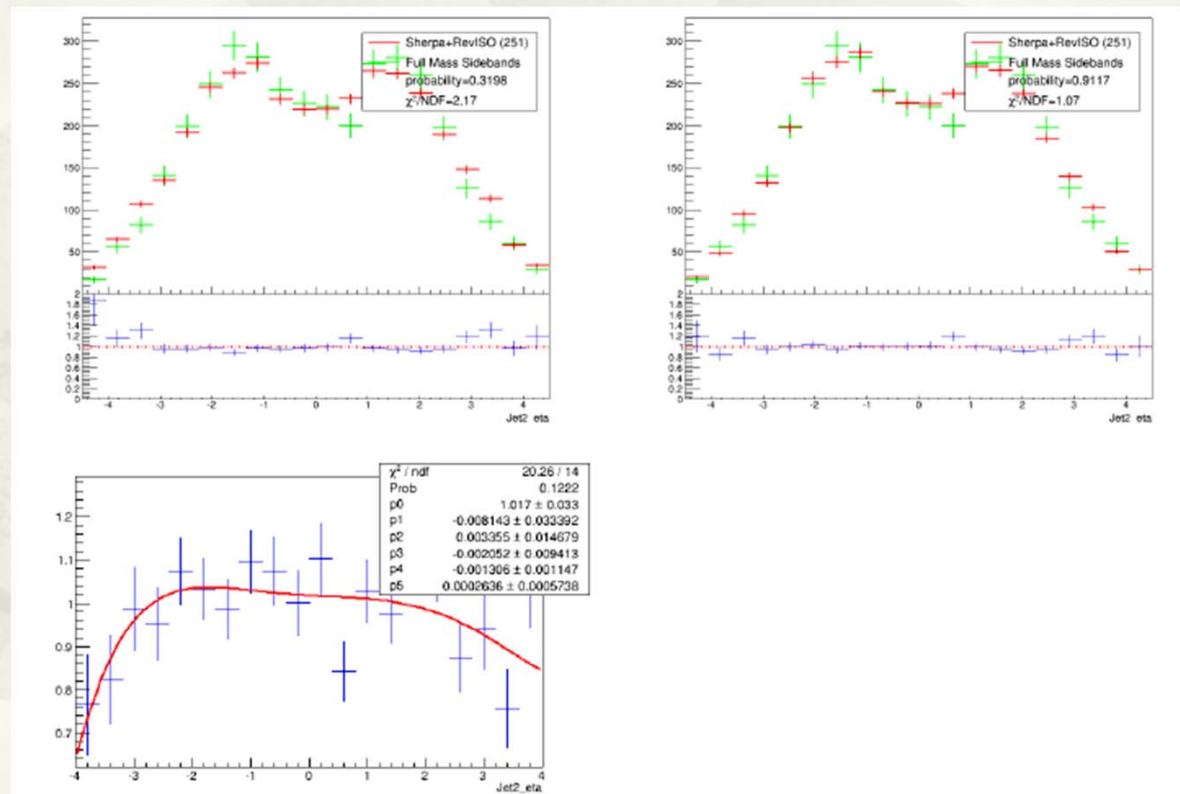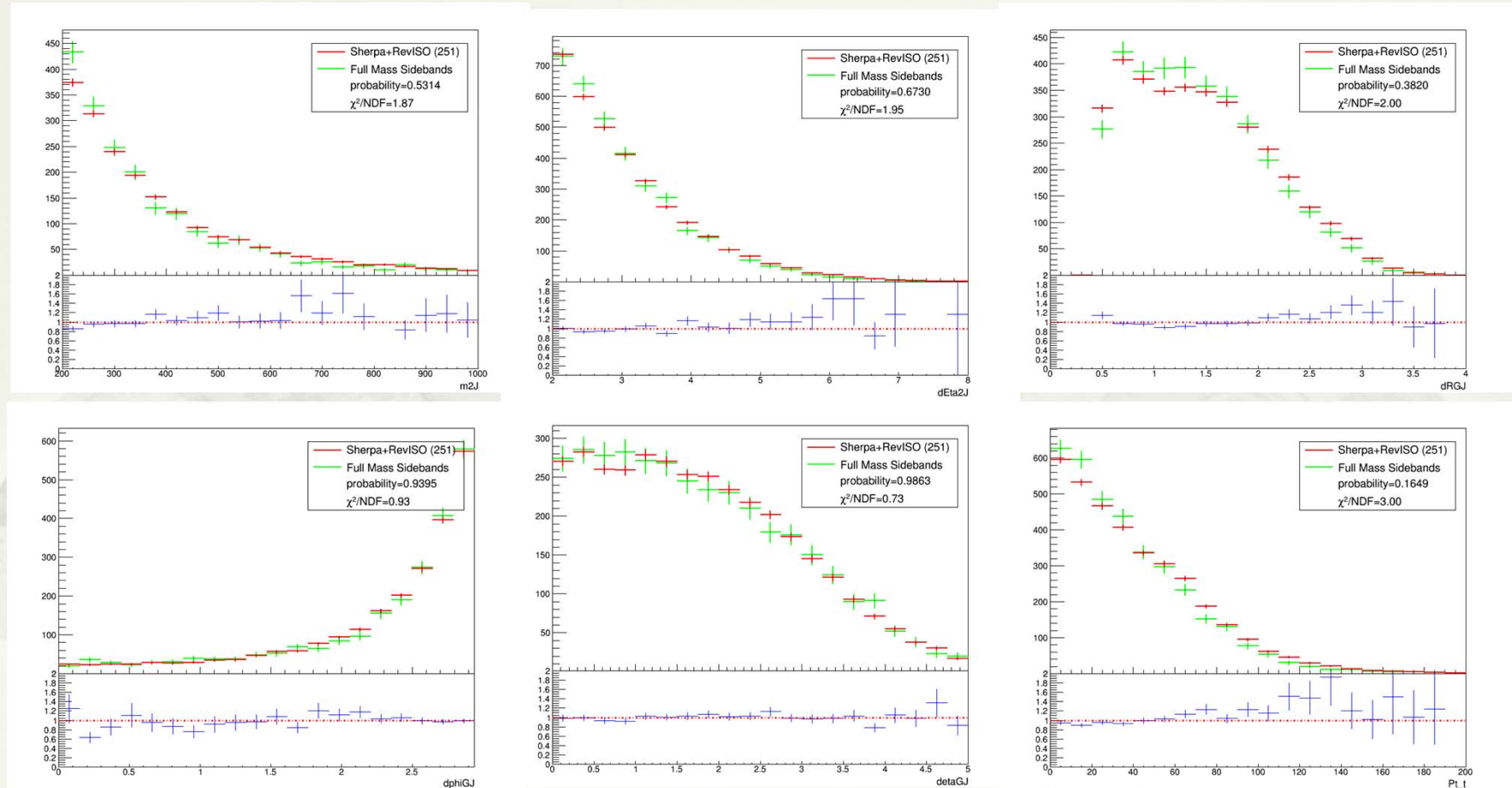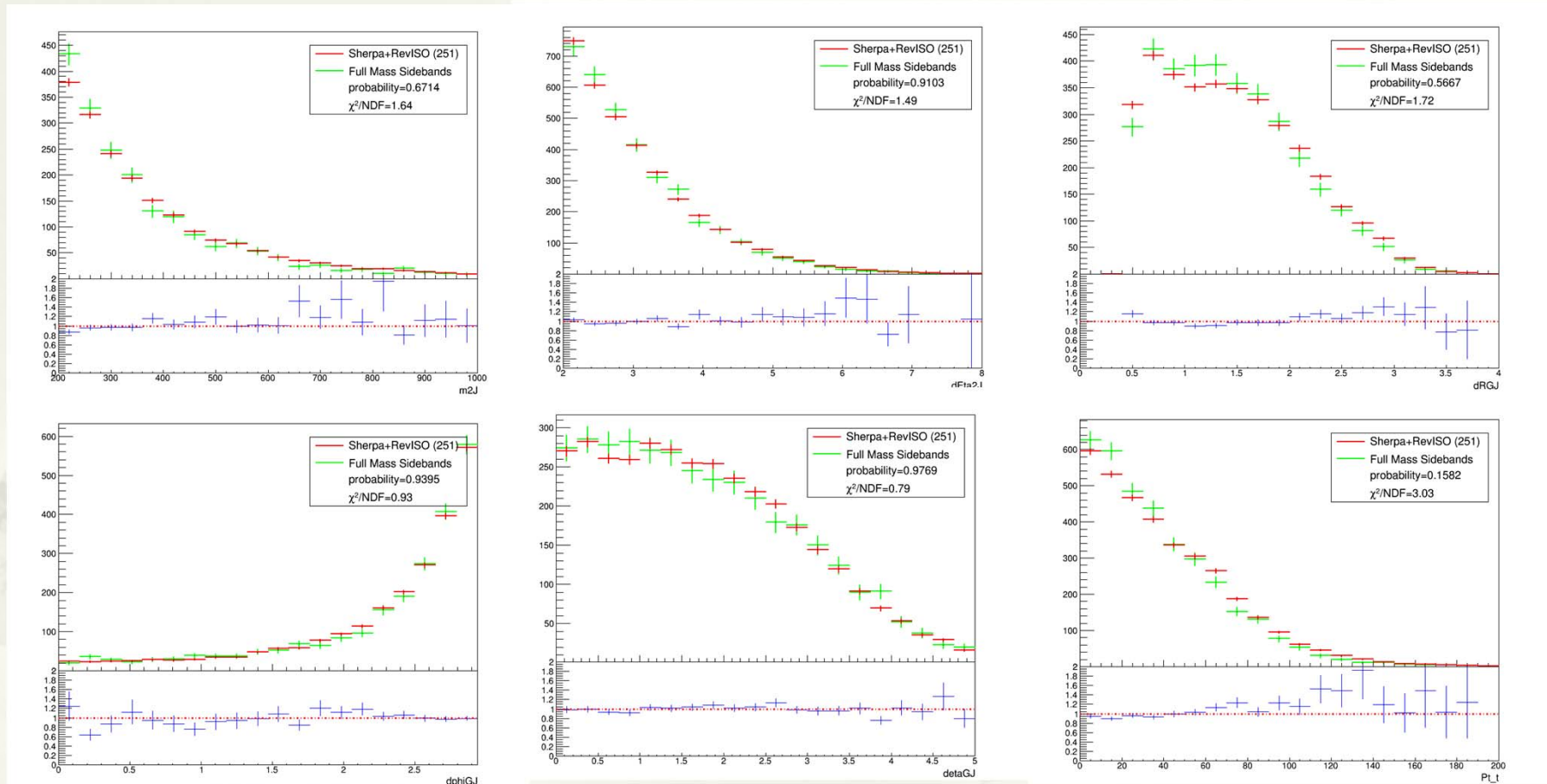- VBF background reweighting with Jet2_eta

Figure 2: Sub-leading jet eta distribution before reweighting (top left), after reweighting (top right) and the reweighting function (bottom).
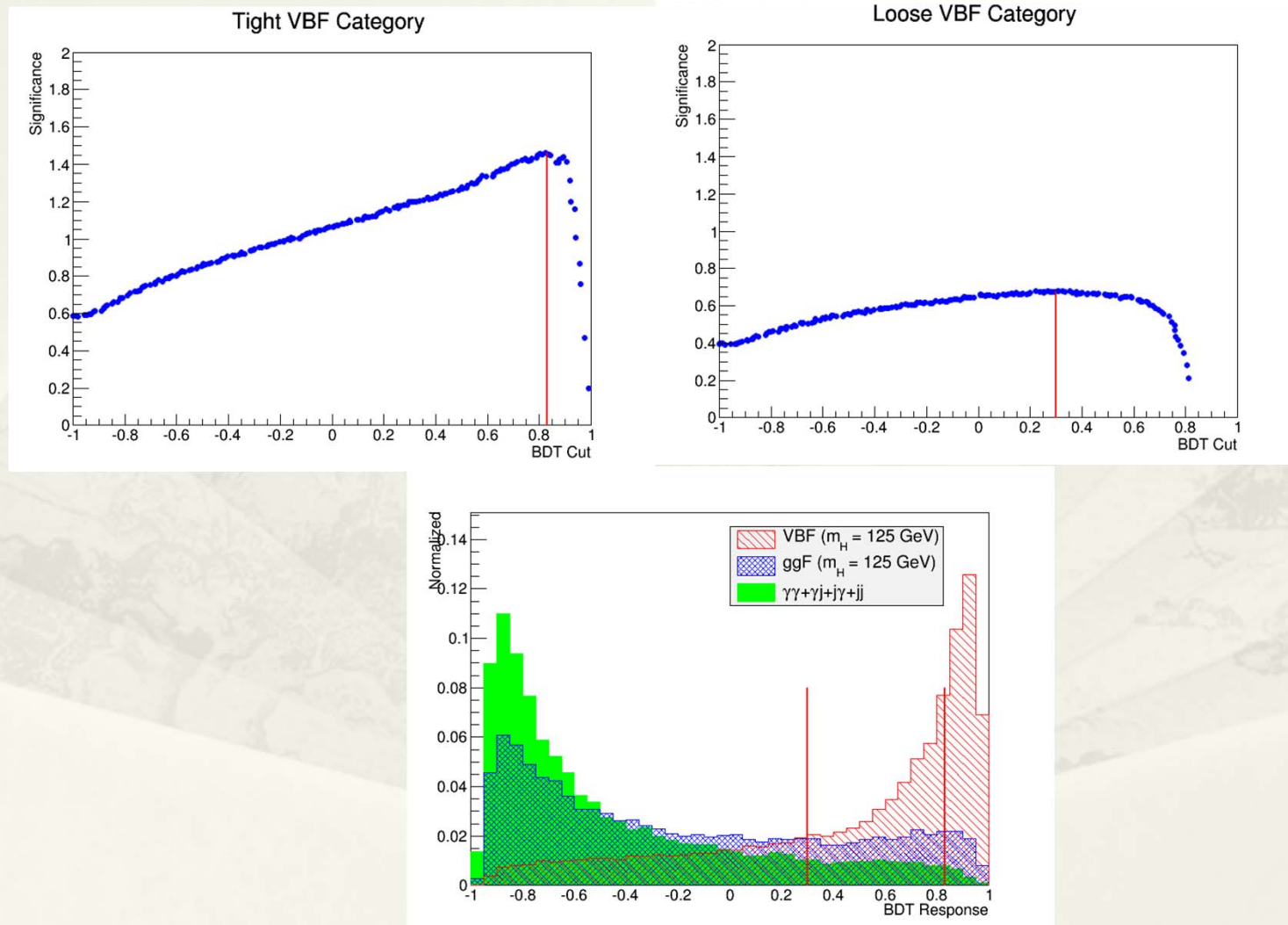
Variables before reweighting

Variables after reweighting
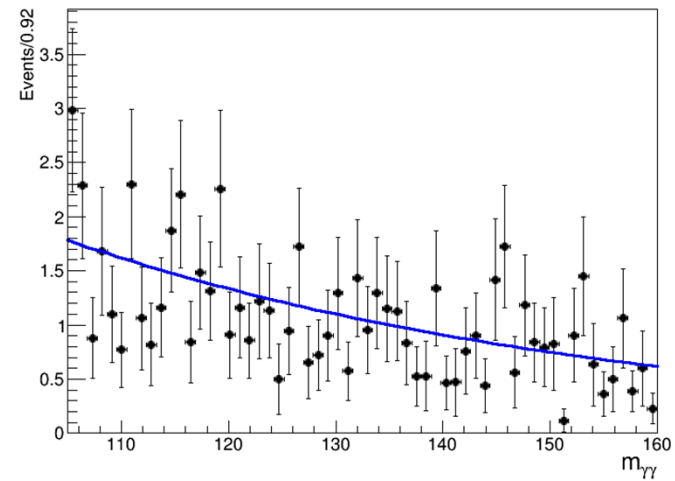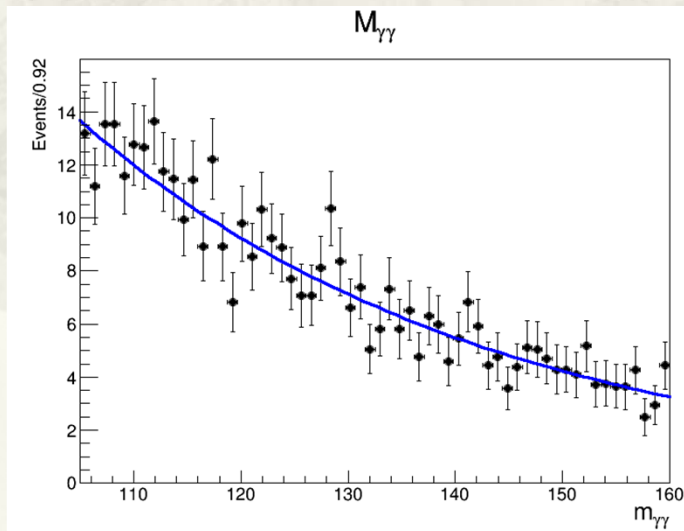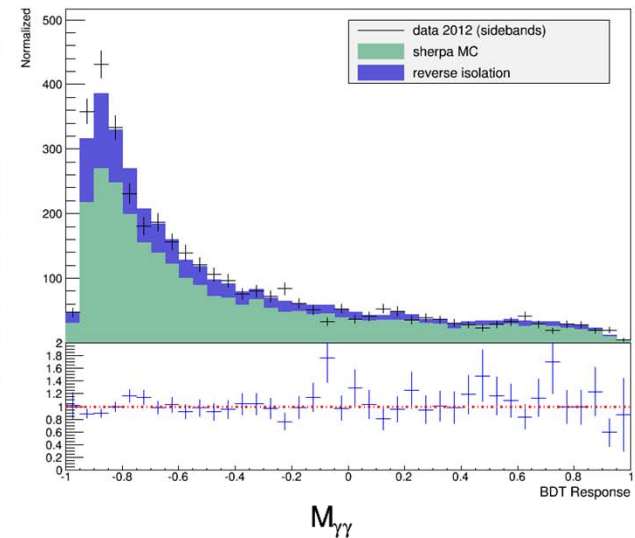
BDT shape and optimization

Results after reweighting

Results (5GeV window)	New year loose	New year tight	Reweight loose	Reweight tight
VBF signal	4.6	4.6	4.7	4.3
ggF	3.2	1.0	3.1	0.9
bk model	43.2	7.7	40.5	6.7
Purity	58.2%	81.6%	59.6%	82.3%
Significance	0.67	1.45	0.70	1.45
Combined significance	1.60		1.62	
Data	5%		413	70

Background shape check

- Good modeling
- No bias to m_γγ

Data shape

- Tight category has low statistics
- Loose category peak not as significant as before