

Discussions of WH with NN+ME

- Central Lepton W+2jet Selections:

Cuts	Top-like (CDF9136)	Single top-like (CDF 9255)
Lepton	$E_T(P_T) > 20$	$E_T(P_T) > 20$
Jets	$E_T > 20, \eta < 2$	$E_T > 20, \eta < 2.8$
MET	> 20	> 25
QCD-Veto	no	yes

- Phex W+2jet Selections:

Cuts	Top-like (CDF9136)	Single top-like (CDF9255)
Lepton	$E_T(P_T) > 20, \eta < 2.0$	$E_T(P_T) > 20, \eta < 1.6$
Jets	$E_T > 20, \eta < 2$	$E_T > 20, \eta < 2.8$
MET	> 25	> 25
QCD-Veto	yes	yes

- Extra muon vs isolated track lepton
- The optimization studies have done many times, but let's review it again next week: $S/\sqrt{S+B}$ vs systematic

Comparison of WH Results

- Expected limits:

R	Top-like (CDF9136)	Single top-like (CDF9255)	R
Lum	1.9	2.2	1.16
Extra muon	no	yes	1.18
110	6.5	6.1	1.06
115	7.3	7.0	1.04
120	8.9	8.5	1.05
130	12.6	12.4	1.02
140	23.4	22.8	1.03
150	57.6	55.2	1.04

- The sensitivity is expected to be $\approx 17\%$ better due to extra data and loose muon, but the limit improves only 5%
- It's difficulty to conclude without detailed comparison studies.
- The real question is: can we gain something by using ME as part of the neural network inputs ?
- Assuming we can agree on the same selections, would it be possible to compute the ME or EPD for each event, the same for dijet, or other kinematic variables ? and then feed them into various NN packages (JETNET, NEAT, or NeuroBayes) to see which does the best...