

6f cross section (fb)

now I use the DBD official number.

(old total cross sections were calculated different beam parameter. old total xsec are calculated by physsim, maybe. current: whizard. Subcategory cross sections are just divided by pure tt decay BR.)

category	eLpR(old)	eLpR(current)	eRpL(old)	eRpL(current)
total	1633 fb	1524.6 fb	700 fb	590.45 fb
bbcyyc	186.5	159.8	79.97	63.86
bbuyyc	186.5	164.2	79.97	63.89
bbcyyu	186.5	164.0	79.97	63.94
bbuyyu	186.5	159.3	79.97	64.20
yyveyx	119.2	117.0	51.1	44.54
yyxyev	119.2	116.9	51.1	44.38
yyvlyx	238.4	232.1	102.2	88.91
yyxylv	238.4	232.0	102.2	88.90
yyveev	19.05	20.17	8.166	7.567
yyvelv	38.10	39.60	16.33	15.04
yyvlev	38.10	39.50	16.33	15.04
yyvllv	76.20	78.72	32.66	30.14

- cut based analysis

change 6f event shape to very loose 4 b tagged category from 2 b tagged category

→ sensitivity is decreased a few %

- Just try TMVA BDT, BDTG, MLPBNN

At most, 5000 events are used as training and test samples

If events less than 10,000 events after precut, I used a half of events for training and the other half of events for test.

We maybe can get ~20 % analysis gain. $S/\sqrt{S+B}$: $\sim 2 \rightarrow \sim 2.4$
(low statistics of 6f samples)

loose 4 b tagged category: $S/\sqrt{S+B} \sim 1.4$
because of too much background events.