

ZHH analysis.

zhh versus wbf

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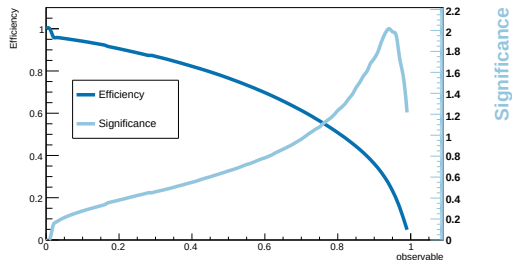
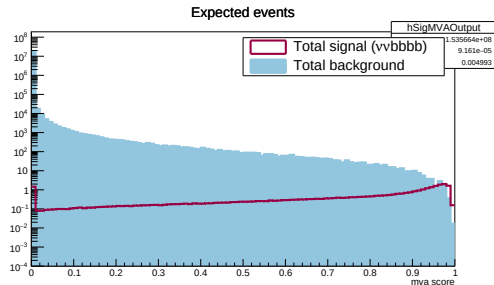
Di-Higgs working group meeting
July 8, 2026



HELMHOLTZ



vvbbbb in one class



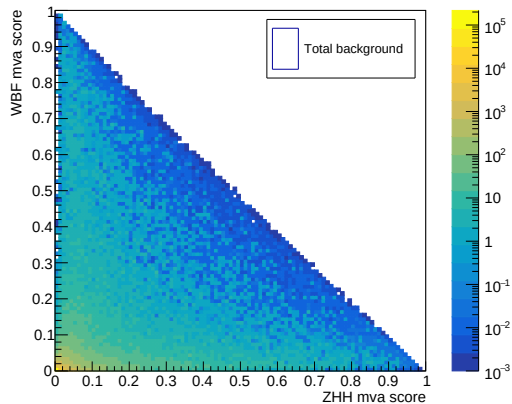
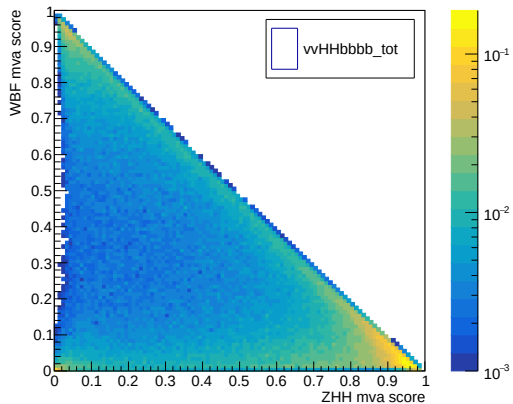
Classes:

- signal: vvHHbbbb
- bkgs: bbbb, lvbbqq, vvqqH, vvbbbb

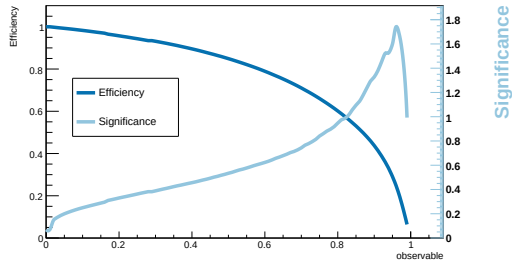
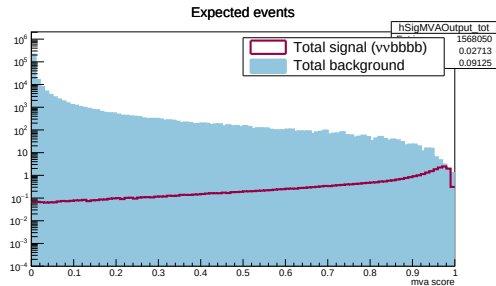
Cut at 0.93:

$$S = 9.85, \quad B = 14, \quad \frac{S}{\sqrt{S+B}} = 2.02$$

vvbbbb in two classes



Total mva score (ZHH+WBF scores)



Classes:

- signal: WBF(vvbbbb), ZHH(vvbbbb)
- bkgs: bbbb, lvbbqq, vvqqH, vvbbbb

Cut at 0.95:

$$S = 8.83, \quad B = 16.9, \quad \frac{S}{\sqrt{S+B}} = 1.74$$

	ZHH events			WBF events		
	S	B	Z	S	B	Z
zh+wb score > 0.95	6.4416	6.4192	1.7962	2.3921	10.4862	0.6666
vvbbb score > 0.93	8.0065	9.9645	1.8887	1.8366	4.0233	0.7587

ZHH event if zh score > wb score

WBF event if zh score < wb score