L1 seeds for VBF Higgs to Invisible

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Today's presentation

Topics

- Comparison of L1T MET and MHT with/without inclusion of the HF.
- Optimisation study for possible seeds for VBF Higgs to Invisible analysis.

Samples and setup

The results presented today use:

Samples:

- Rate Calculations: ZeroBias - Run 259721 - PU 21-24
- Signal Efficiency: VBF Higgs to Invisible - PU Flat 10to25 25ns (TSG sample)

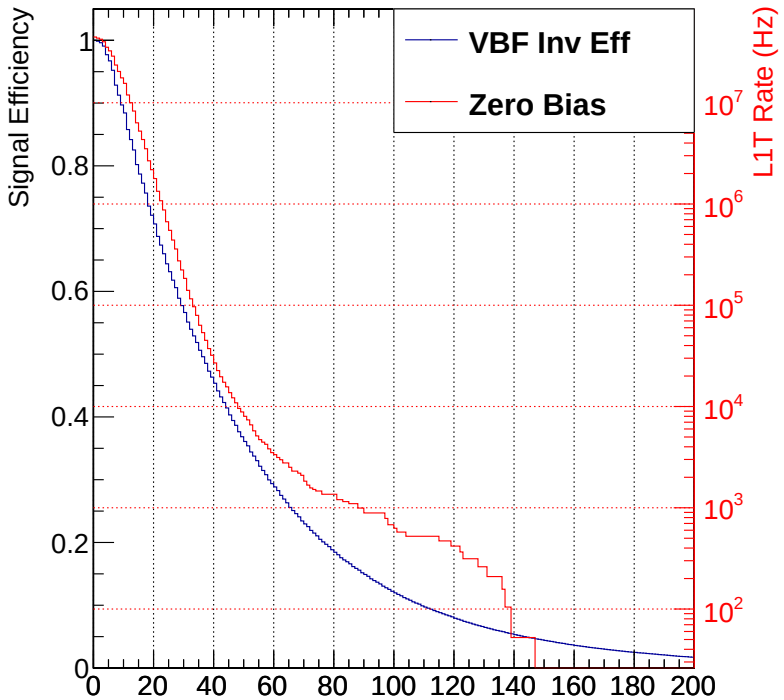
Software setup:

- Emulator software tag: jetmet-update-forjoe-CMSSW_8_0_2 (Jim Brooke's MET resolution fix)
- Ntuples produced with sums calculations with and without the inclusion of HF

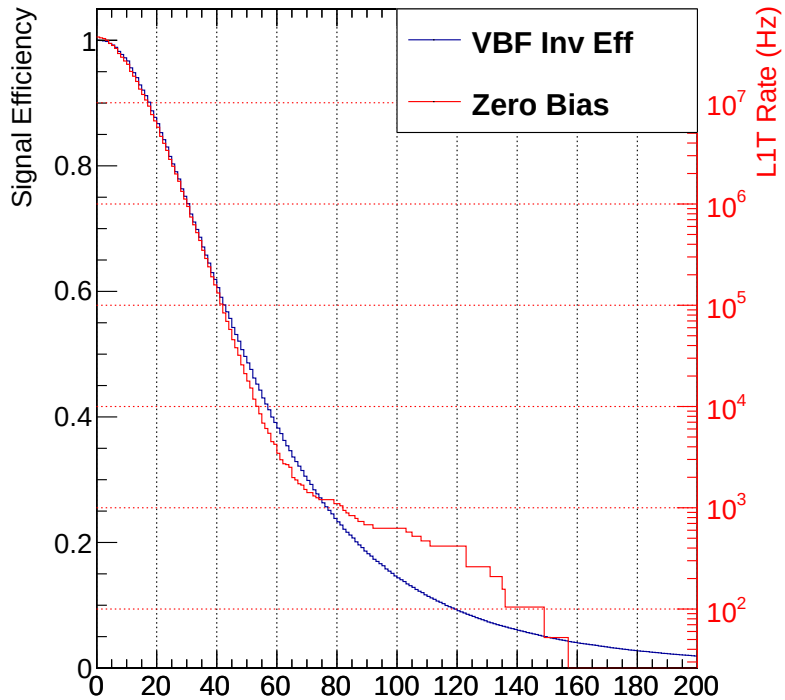
L1 MET/MHT with/without HF

L1 MET Rate vs Signal Efficiency curves

without HF

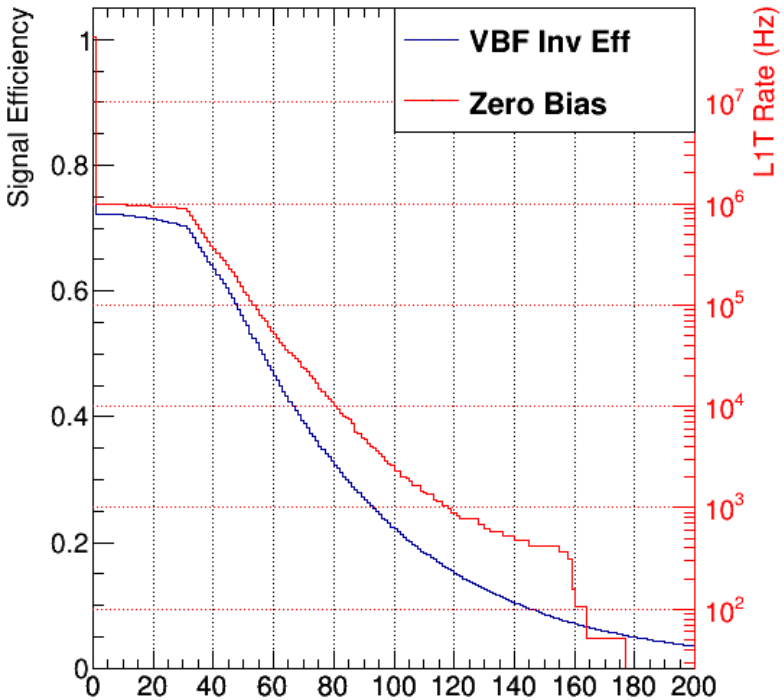


with HF

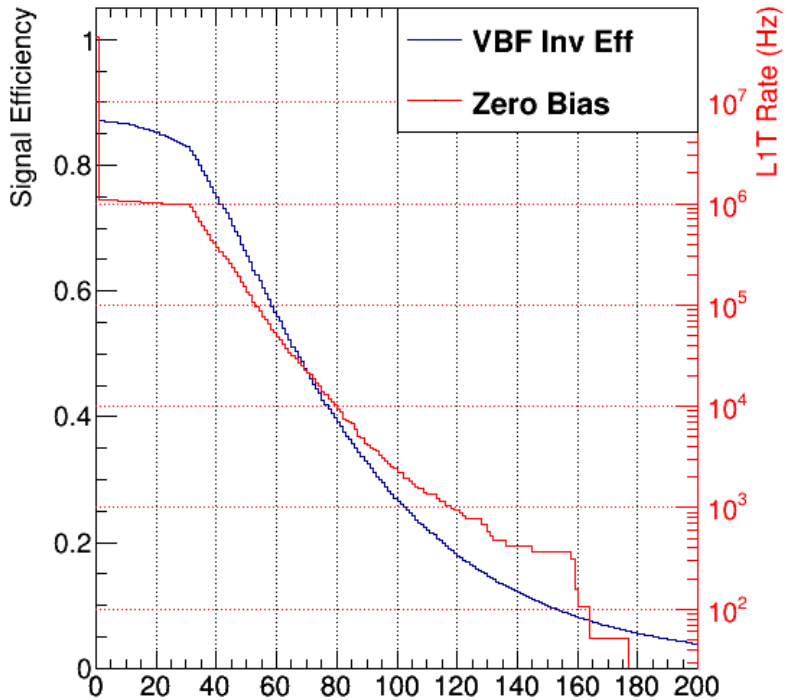


L1 MHT Rate vs Signal Efficiency curves

without HF



with HF



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L1T MET working points

	without HF		with HF	
Algo	Sig. Eff.	L1 Rate [Hz]	Sig. Eff.	L1 Rate [Hz]
MET40	0.4536	27648.7	0.6060	130663.0
MET50	0.3609	8604.6	0.4861	17494.9
MET60	0.2885	3606.4	0.3822	3227.8
MET70	0.2296	2024.6	0.2988	1355.7
MET80	0.1844	1455.2	0.2329	1097.5
MET90	0.1490	949.0	0.1821	710.1
MET100	0.1197	632.7	0.1436	710.1
MET110	0.0971	506.2	0.1141	516.5
MET120	0.0793	379.6	0.0913	451.9
MET130	0.0647	189.8	0.0734	258.2

L1T MHT working points

	without HF		with HF	
Algo	Sig. Eff.	L1 Rate [Hz]	Sig. Eff.	L1 Rate [Hz]
MHT60	0.4660	52450.3	0.5594	49127.7
MHT70	0.3886	22966.8	0.4688	21368.3
MHT80	0.3236	10249.6	0.3908	9038.0
MHT90	0.2687	4618.7	0.3243	4196.2
MHT100	0.2210	2404.2	0.2663	2324.0
MHT110	0.1828	1518.5	0.2195	1420.3
MHT120	0.1510	949.0	0.1792	903.8
MHT130	0.1250	632.7	0.1462	516.5
MHT140	0.1034	442.9	0.1203	516.5

Search for L1T seeds for the VBF Higgs to Tnvisible analysis

Search Results

Conclusions

Summary and next steps

Summary:

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Next Steps:

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