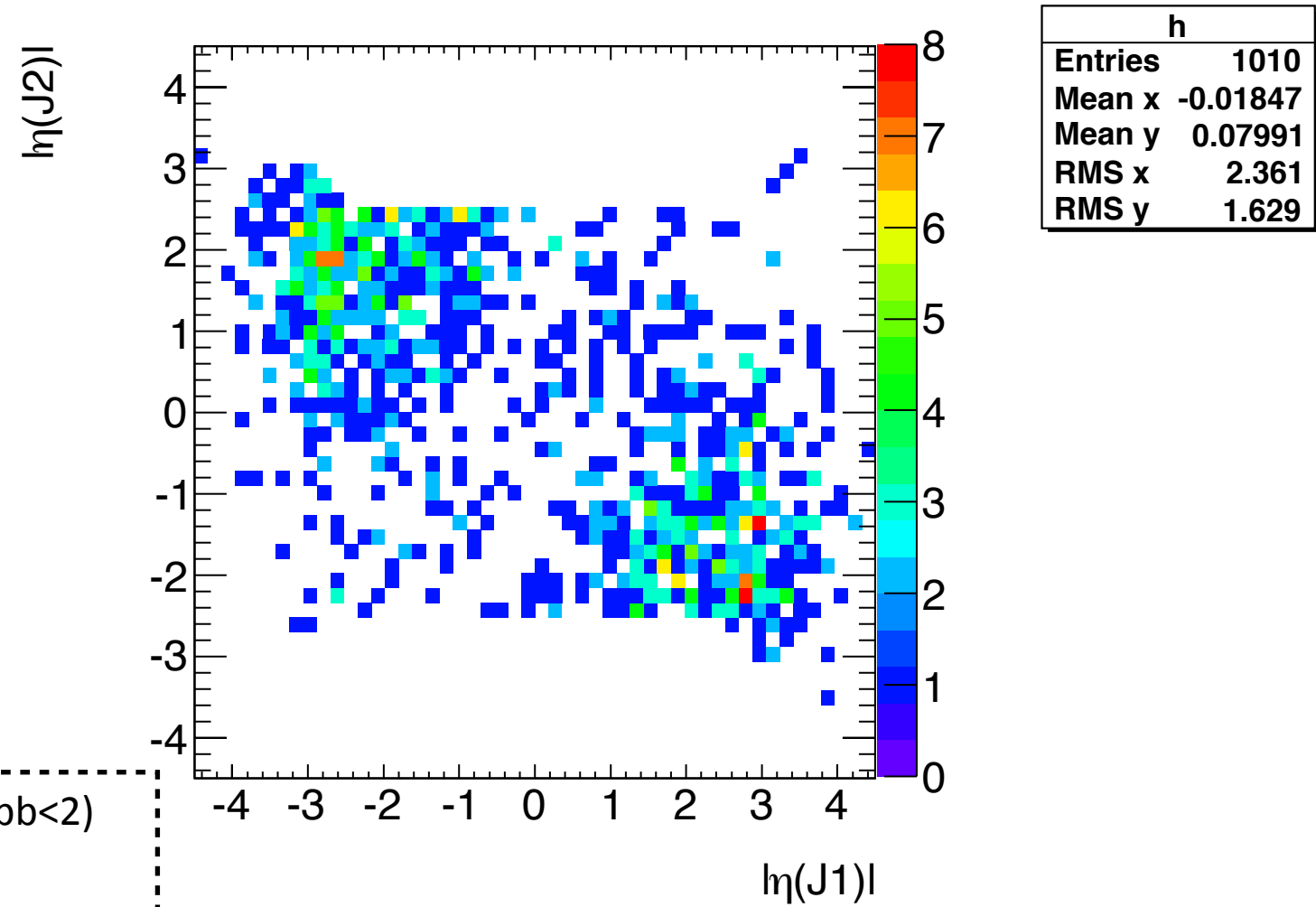
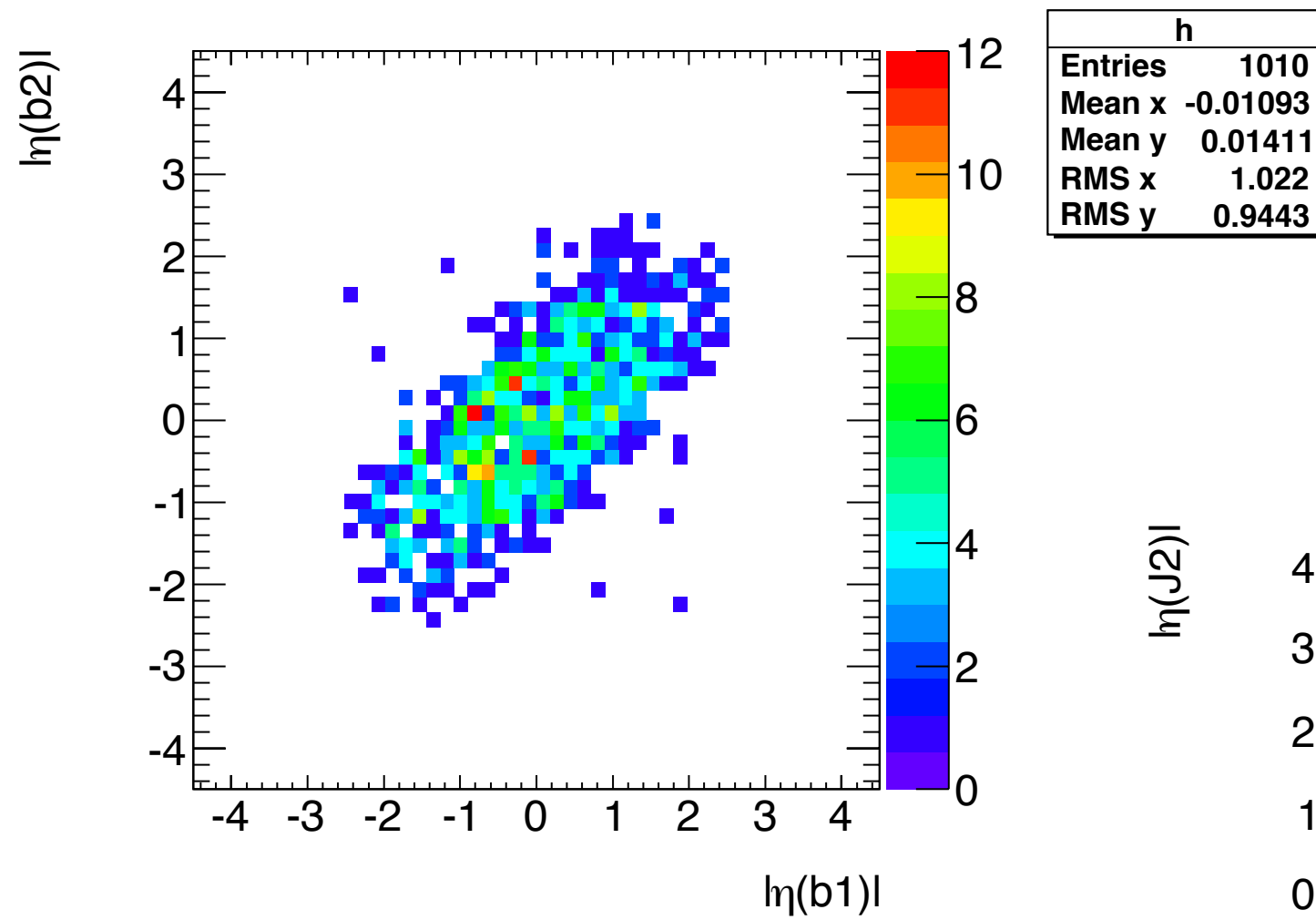
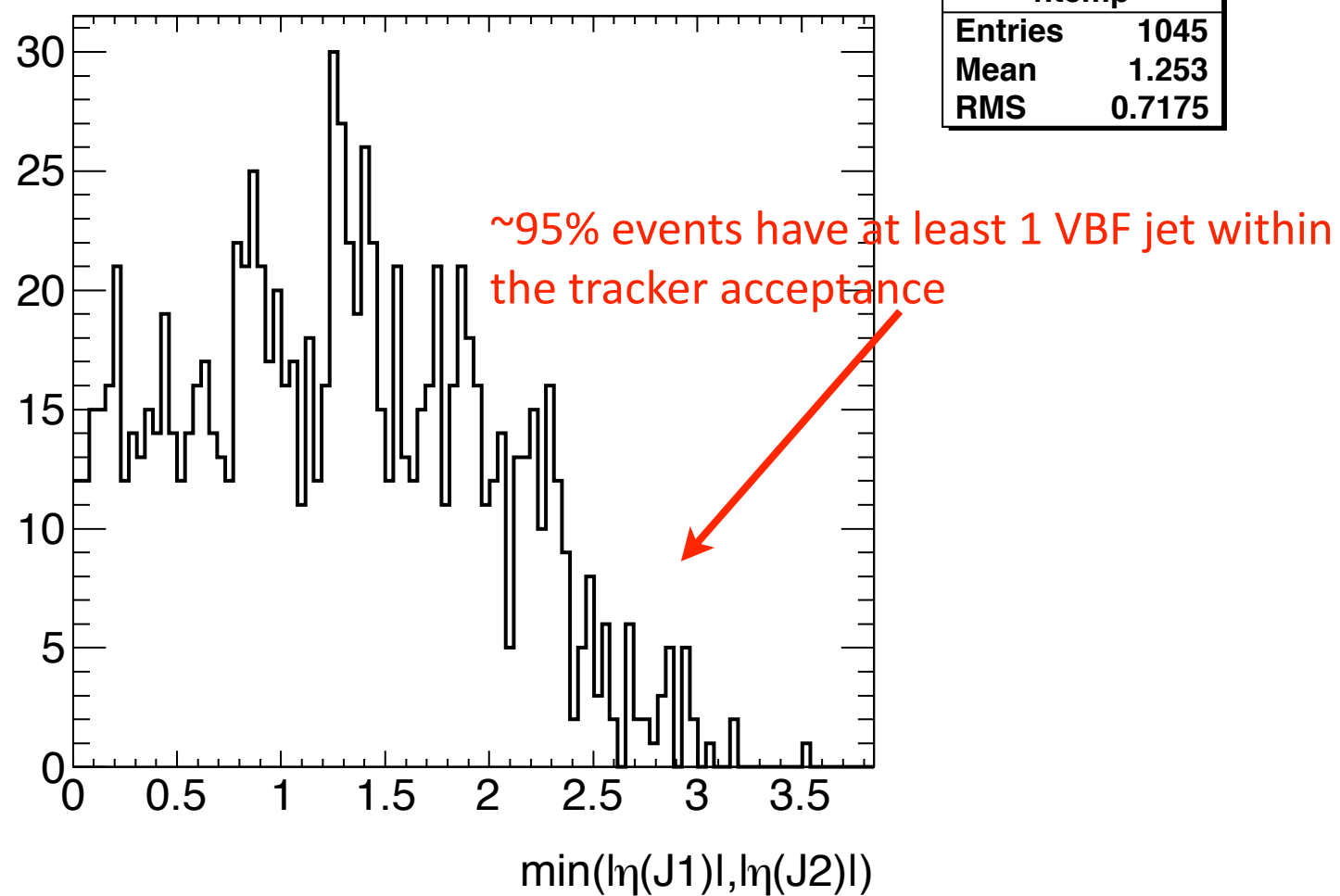


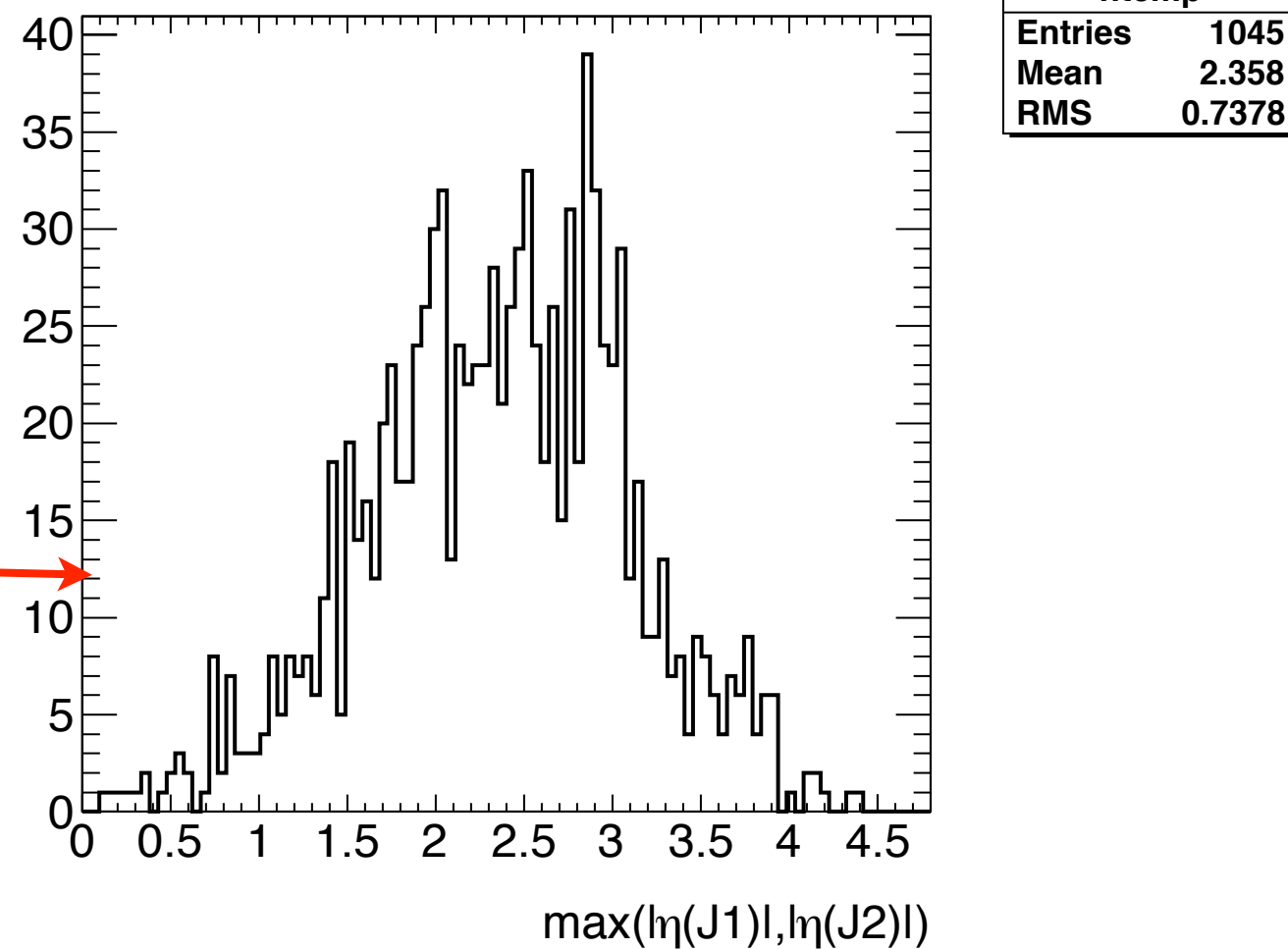


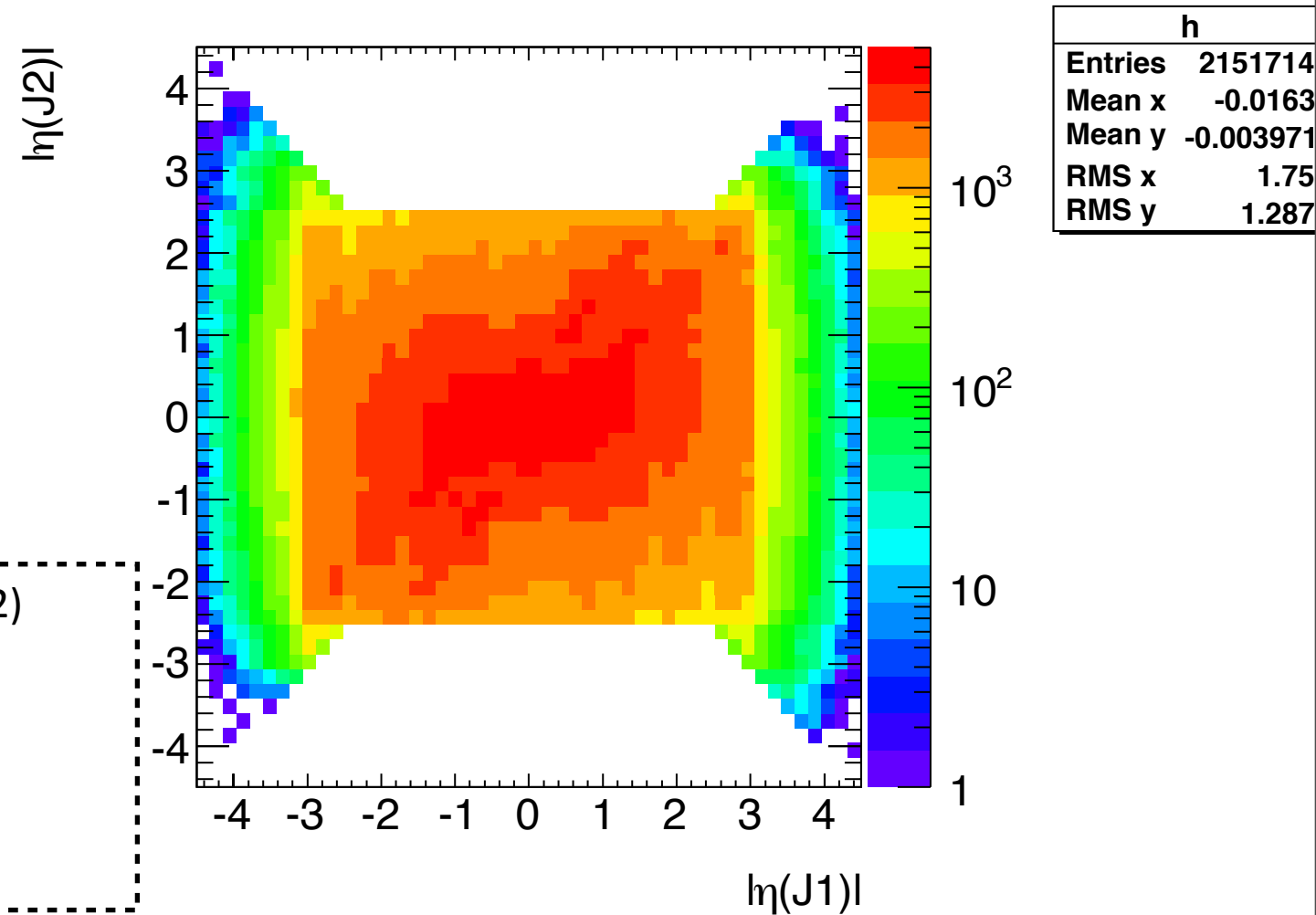
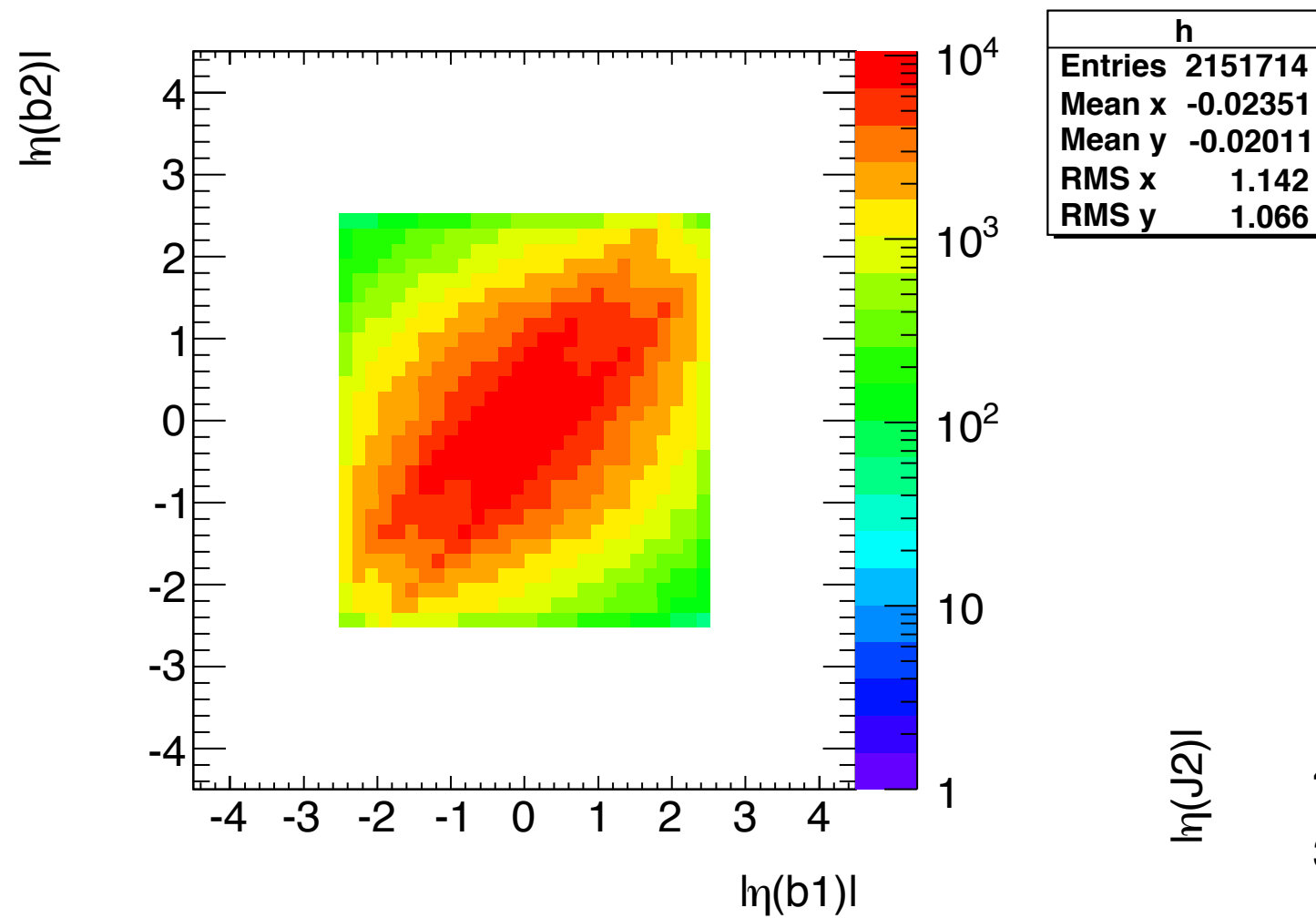
mc12 (FS) pre-selection (trigger, 4J50, labeling, b-tagging, DPhibb<2)

- total: 1010
- 1 VBF more central than at least 1 b: 423 --> ~40%
- both VBF more central than at least 1b: 78 --> ~10%
- 1 VBF more central than both b: 220 --> ~20%
- both VBF more central than both b: 25 --> ~3%



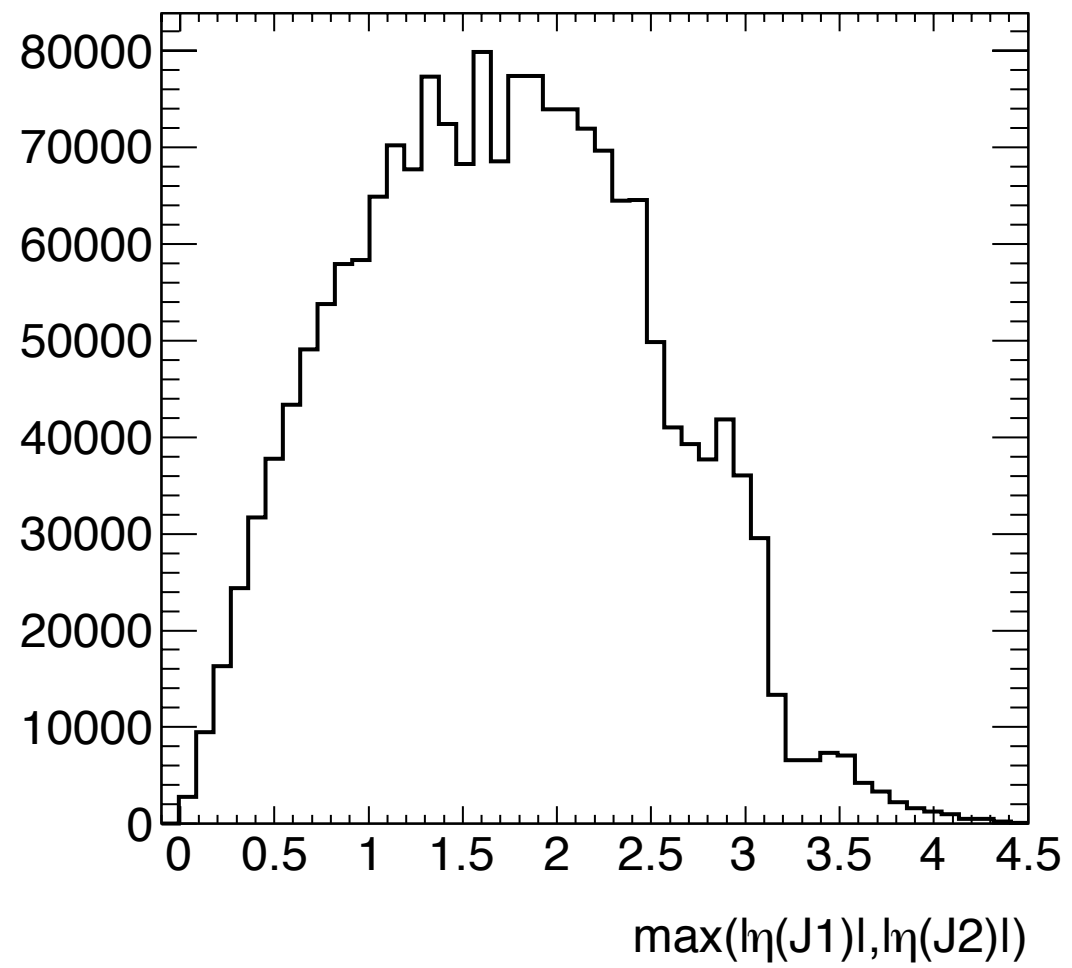
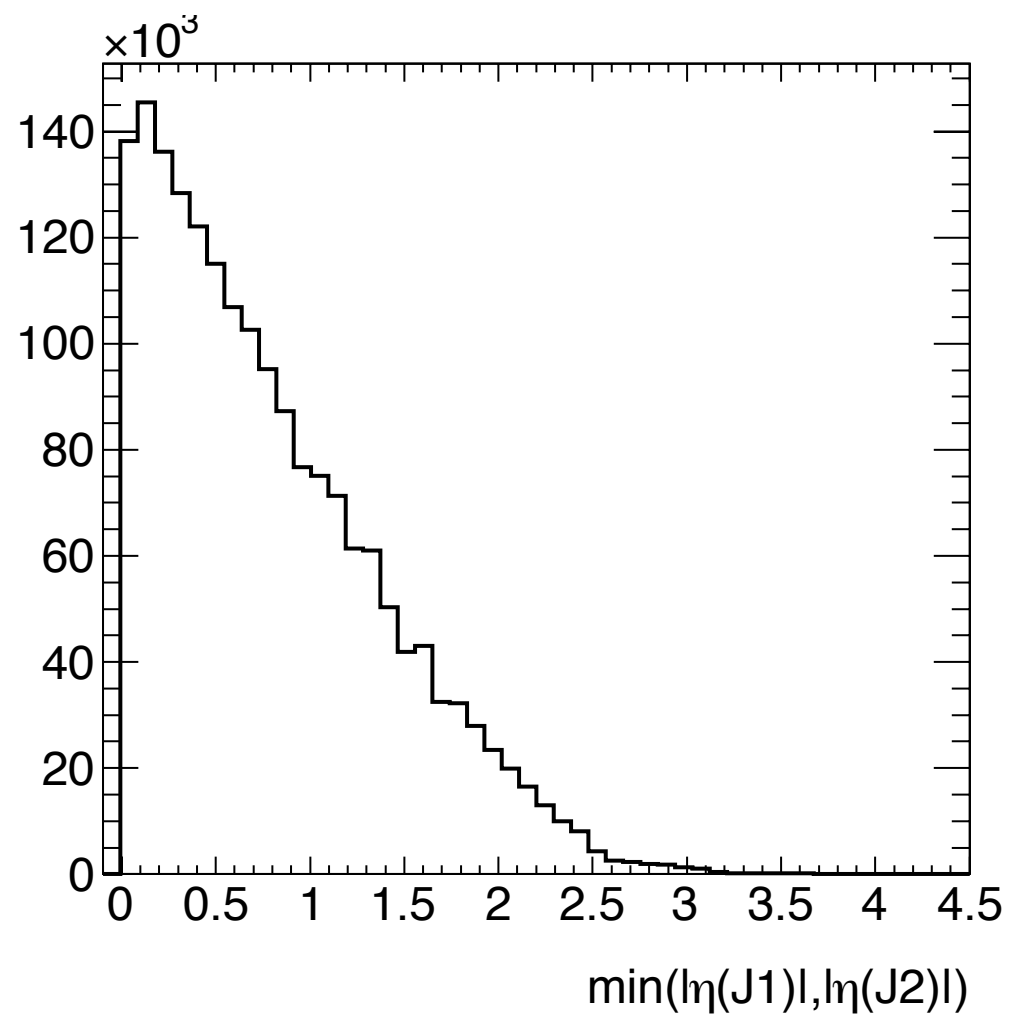
~60% events have both the VBF jet within the tracker acceptance



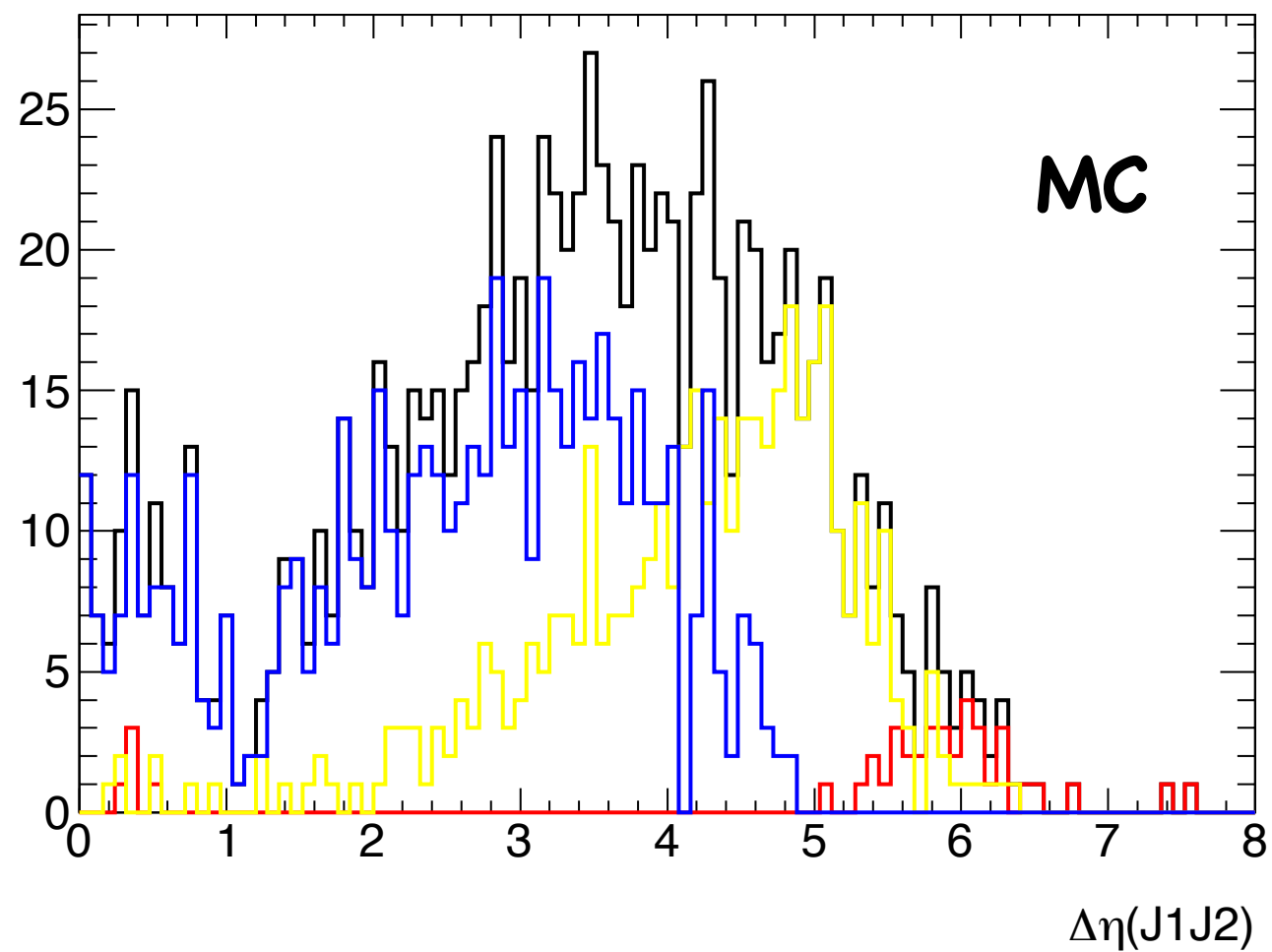


data12 pre-selection (trigger, 4J50, labeling, b-tagging, DPhibb<2)

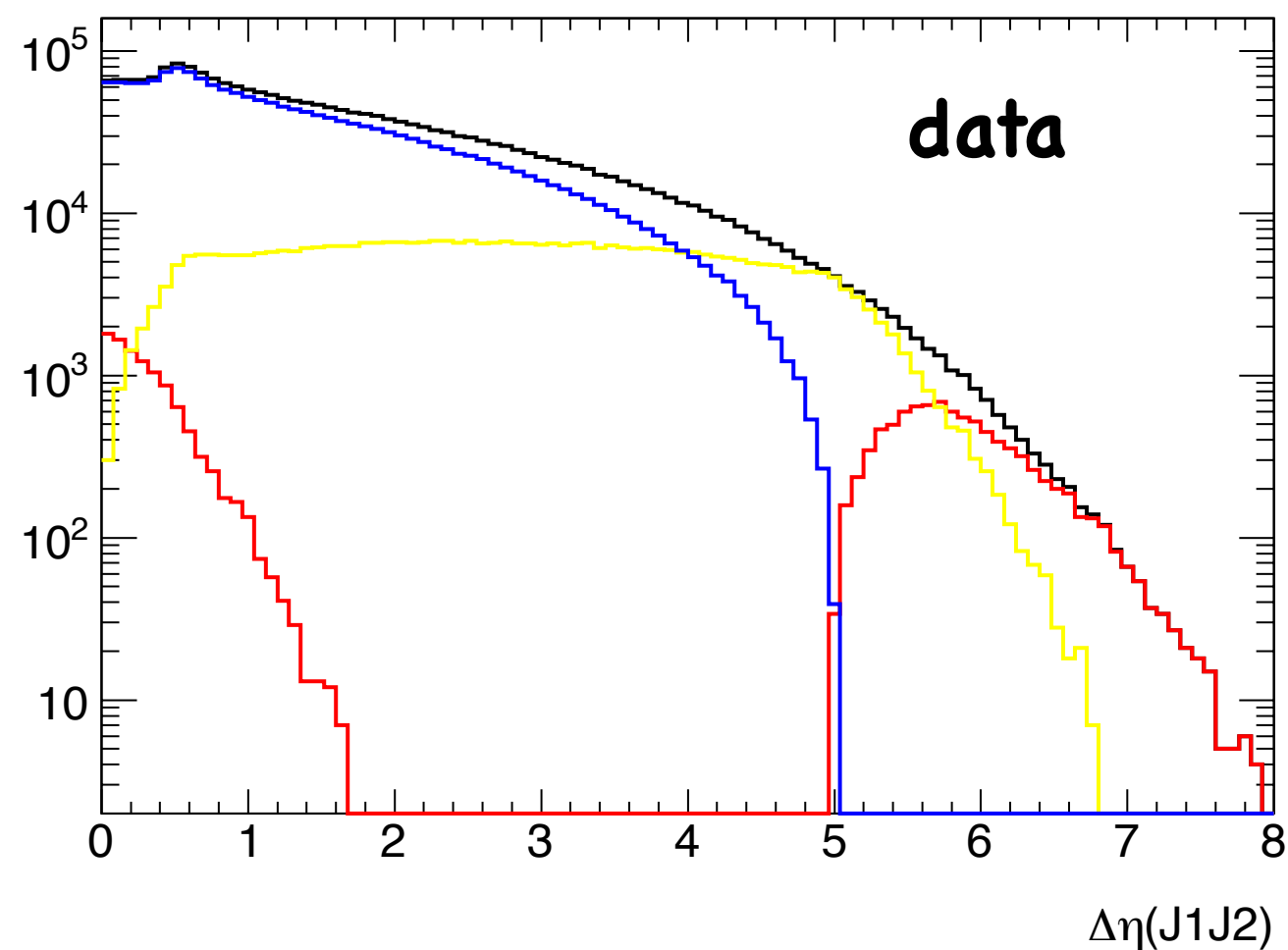
- total: 2151714
- 1 VBF more central than at least 1 b: 1495578 --> ~70%
- both VBF more central than at least 1b: 656405 --> ~30%
- 1 VBF more central than both b: 866819 --> ~40%
- both VBF more central than both b: 237652 --> ~10%

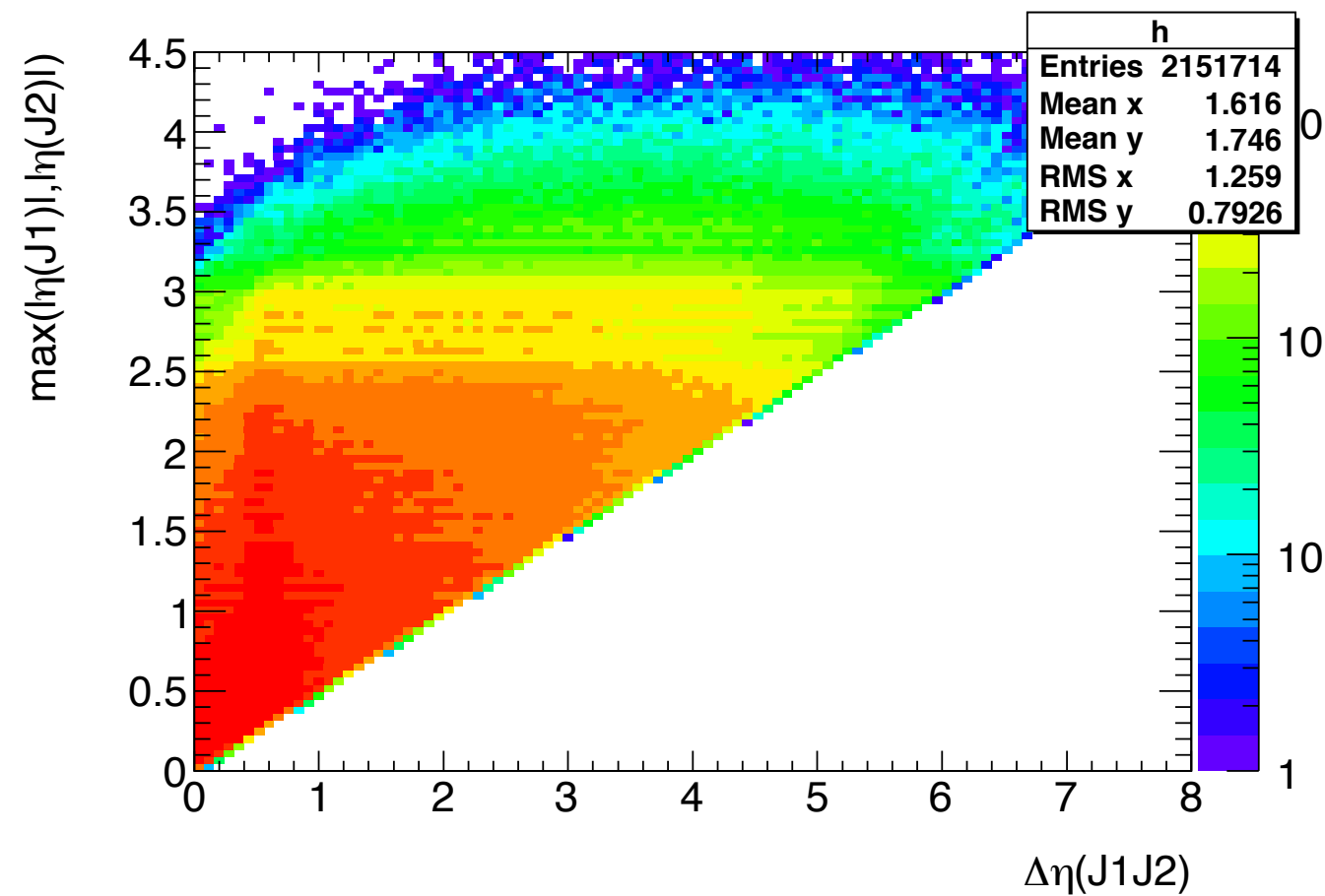
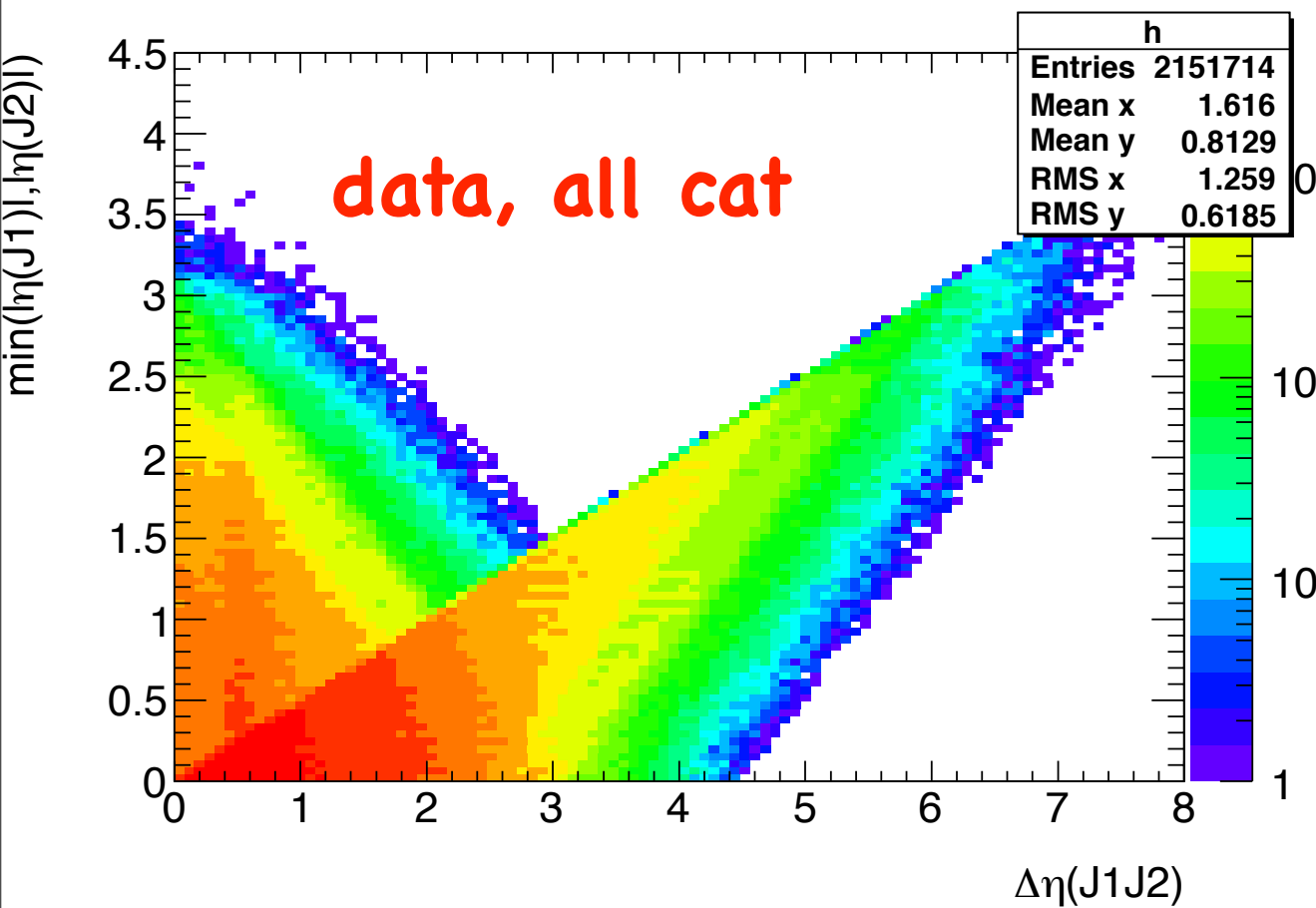
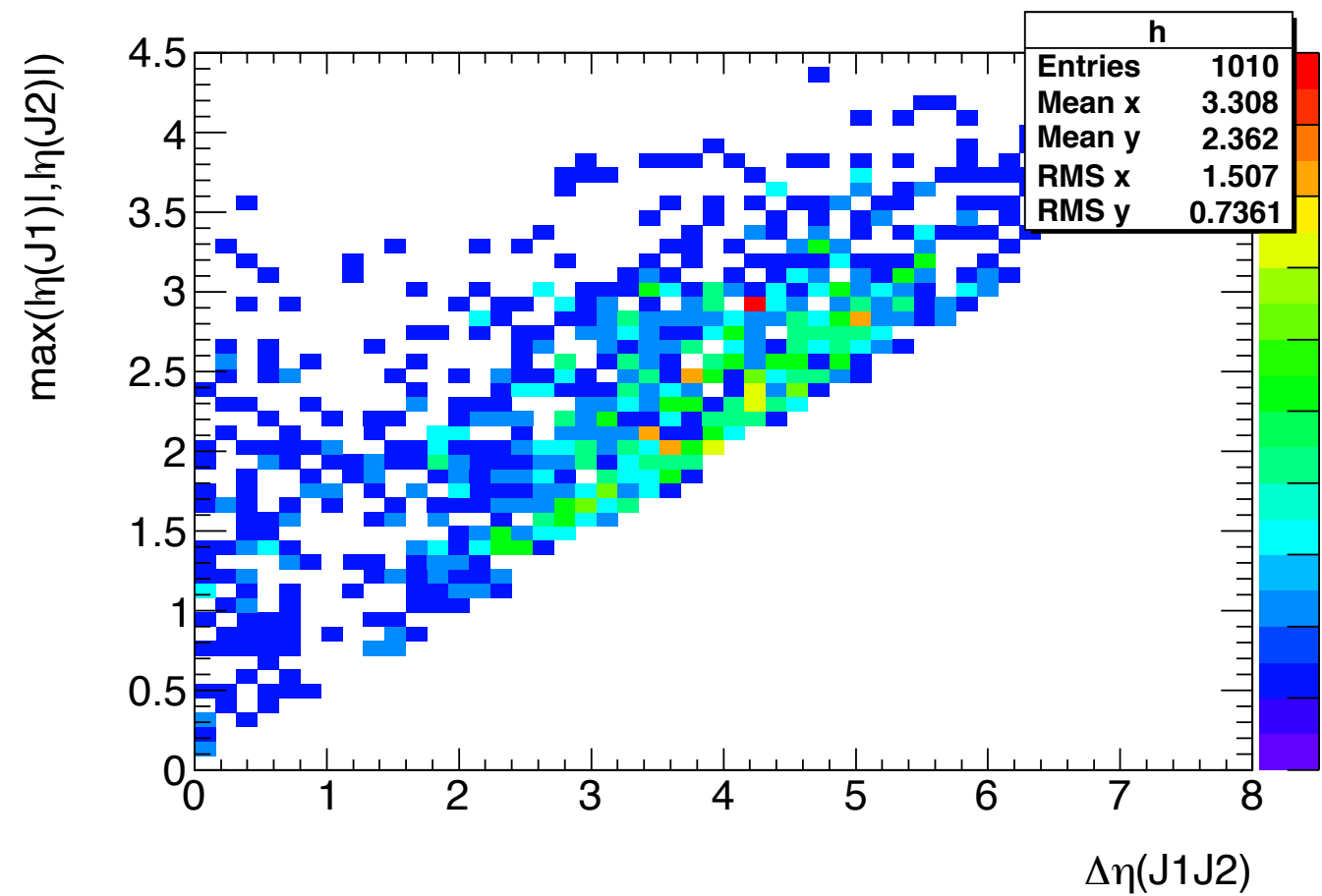
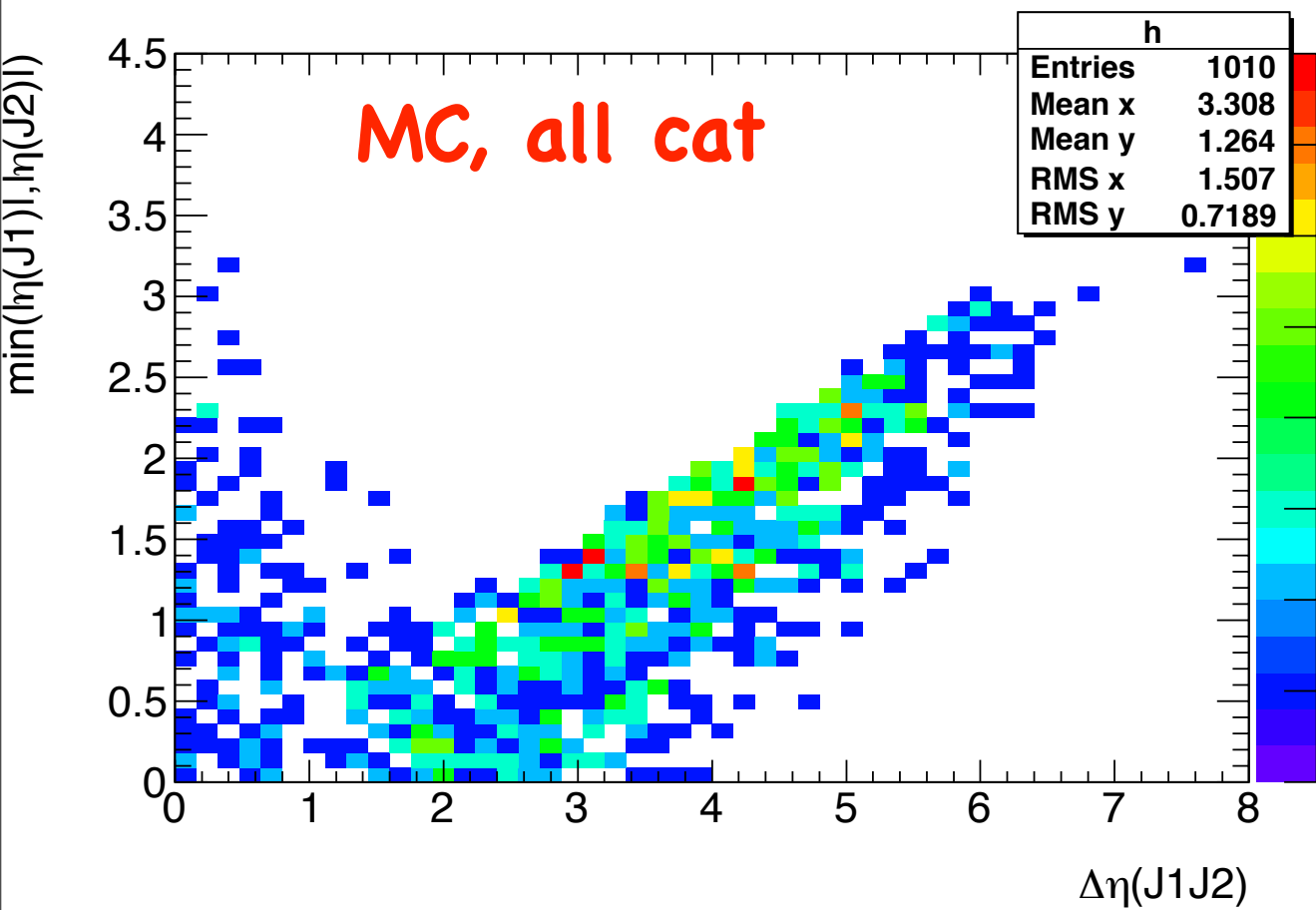


pre-VBF all mass range	DATA	MC	S/N		S/sqrt(S+N)	
ALL	2151714	184	8,55E-05		0,125	
0-VBF	19554	7	3,82E-04	4,5	0,053	0,4
1-VBF	364966	74	2,02E-04	2,4	0,122	1,0
2-VBF	1767194	103	5,81E-05	0,7	0,077	0,6
>1-VBF	2132160	176	8,28E-05	1,0	0,121	1,0
pre-VBF signal region (70-160 GeV)						
ALL	1024873	175	1,71E-04		0,173	
0-VBF	9110	7	7,80E-04	4,6	0,074	0,4
1-VBF	172142	71	4,10E-04	2,4	0,170	1,0
2-VBF	759824	98	1,28E-04	0,8	0,112	0,6
>1-VBF	843621	168	1,99E-04	1,2	0,183	1,1

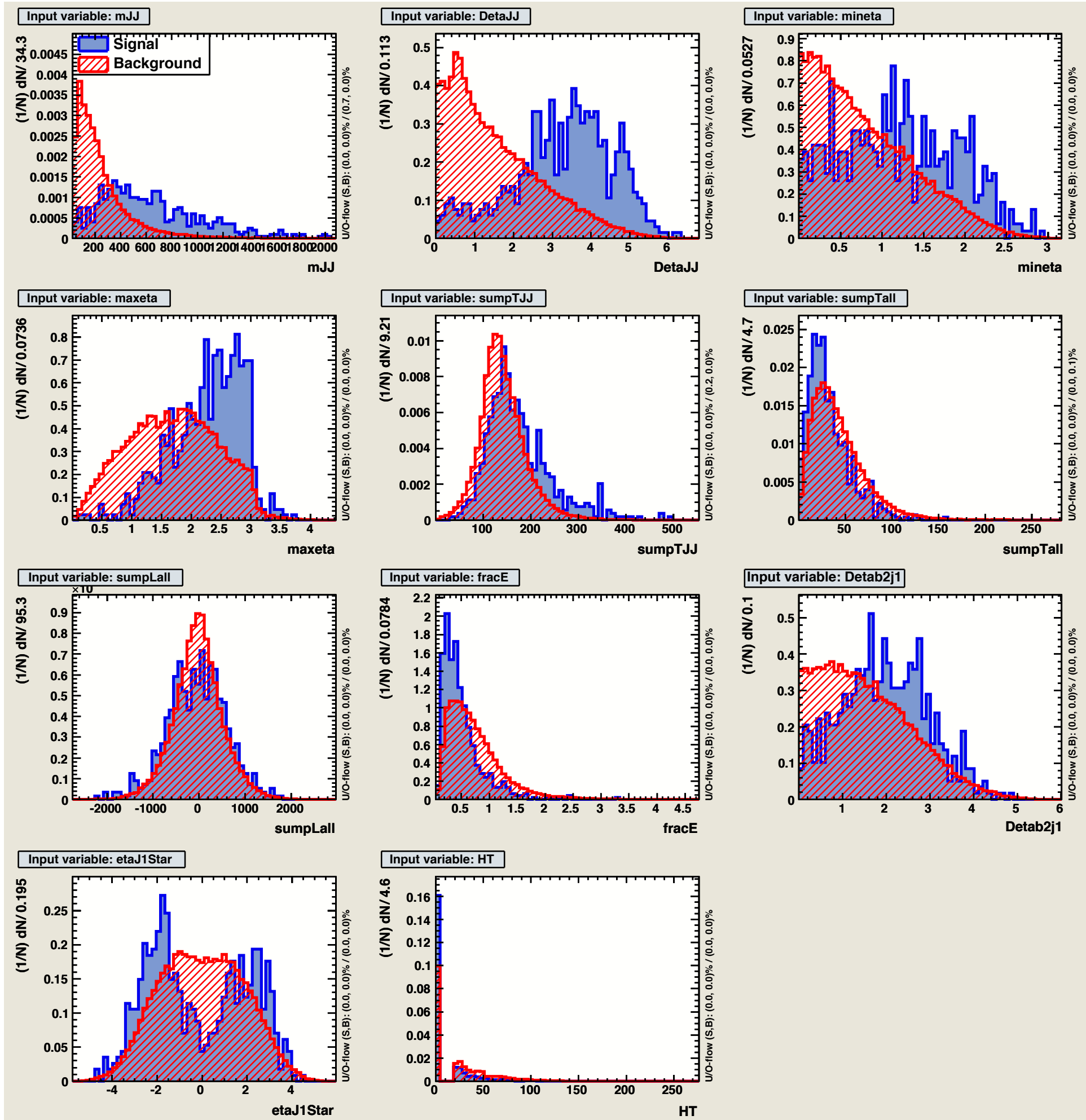


all cat
0-jet cat
1-jet cat
2-jet cat

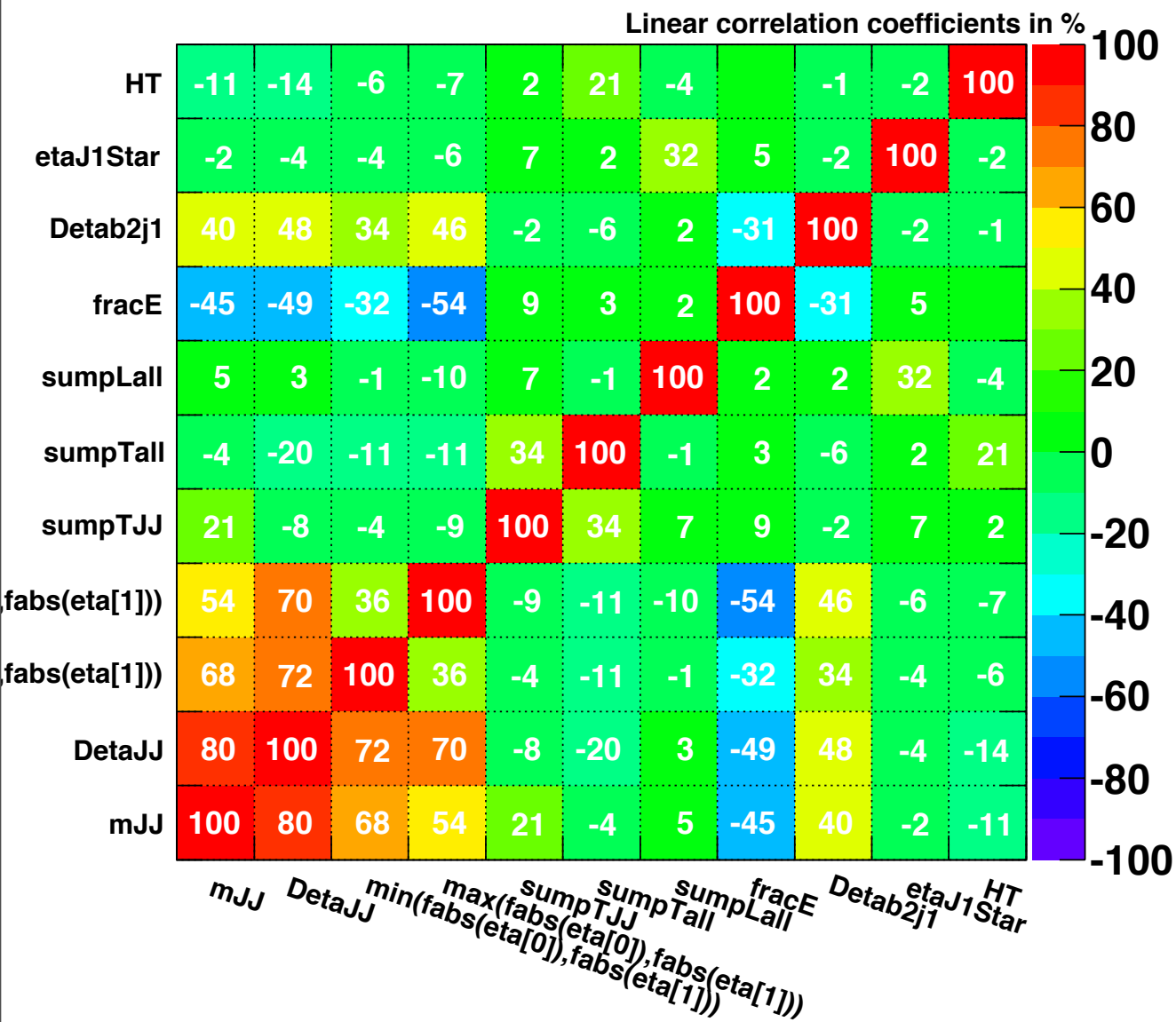




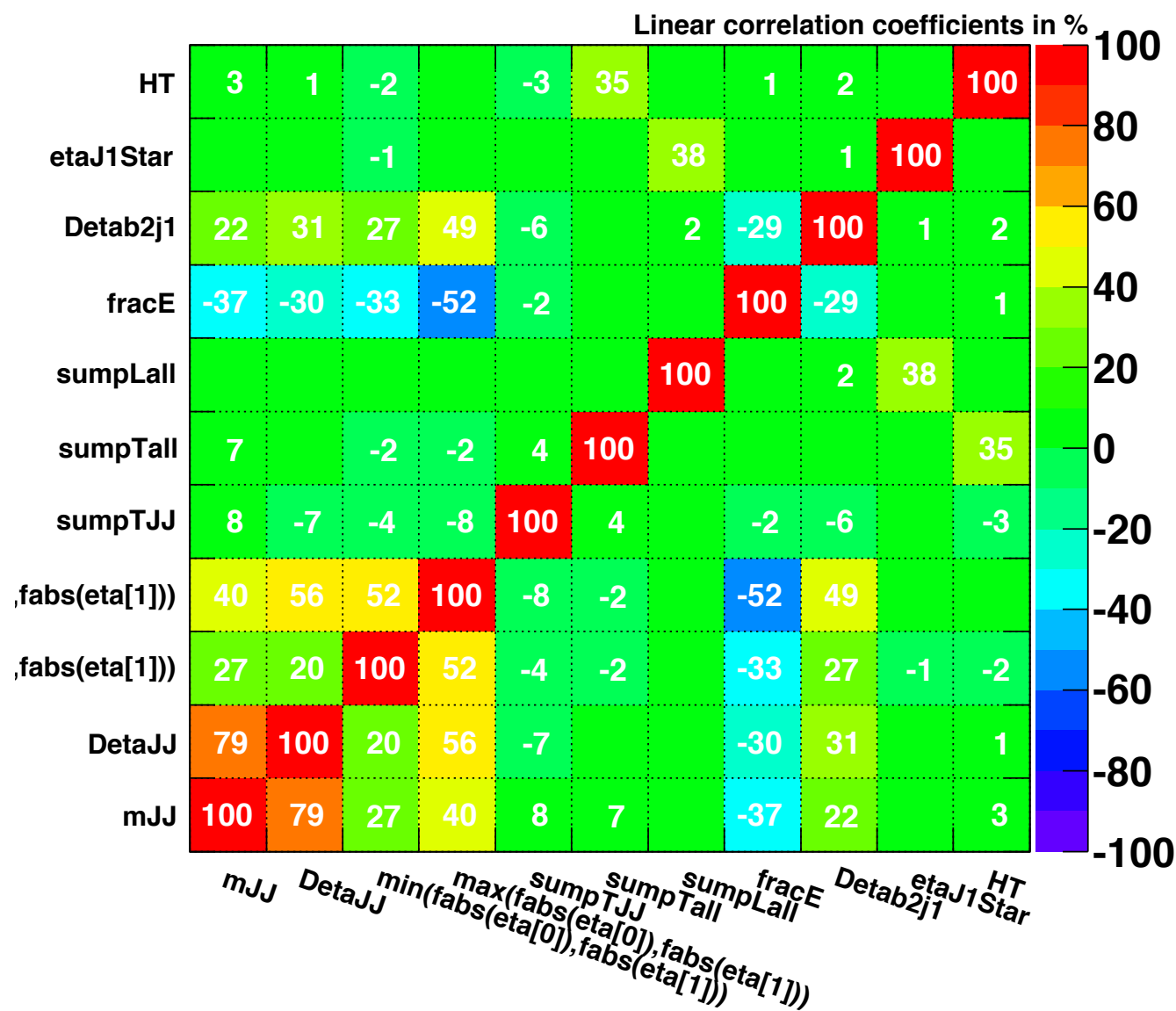
2011

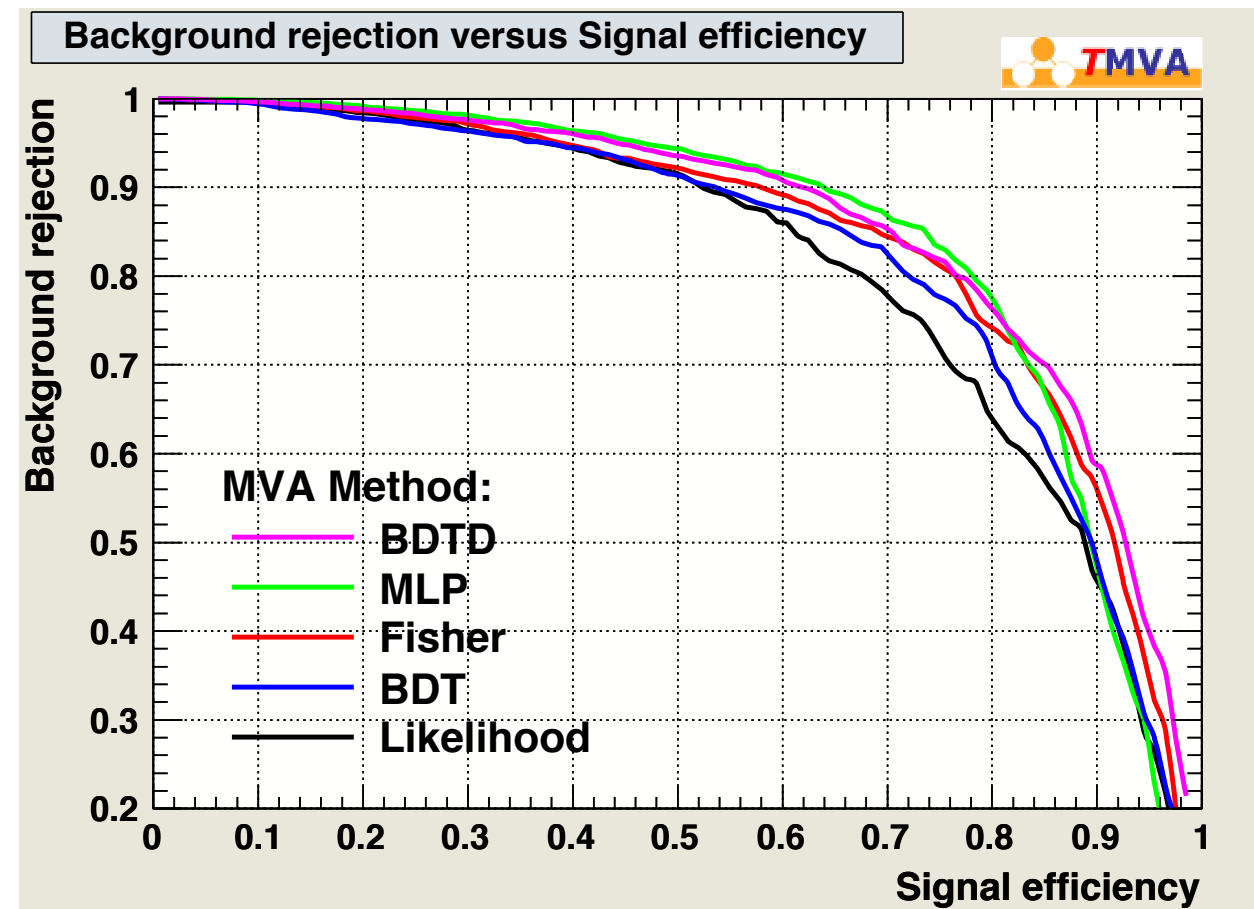
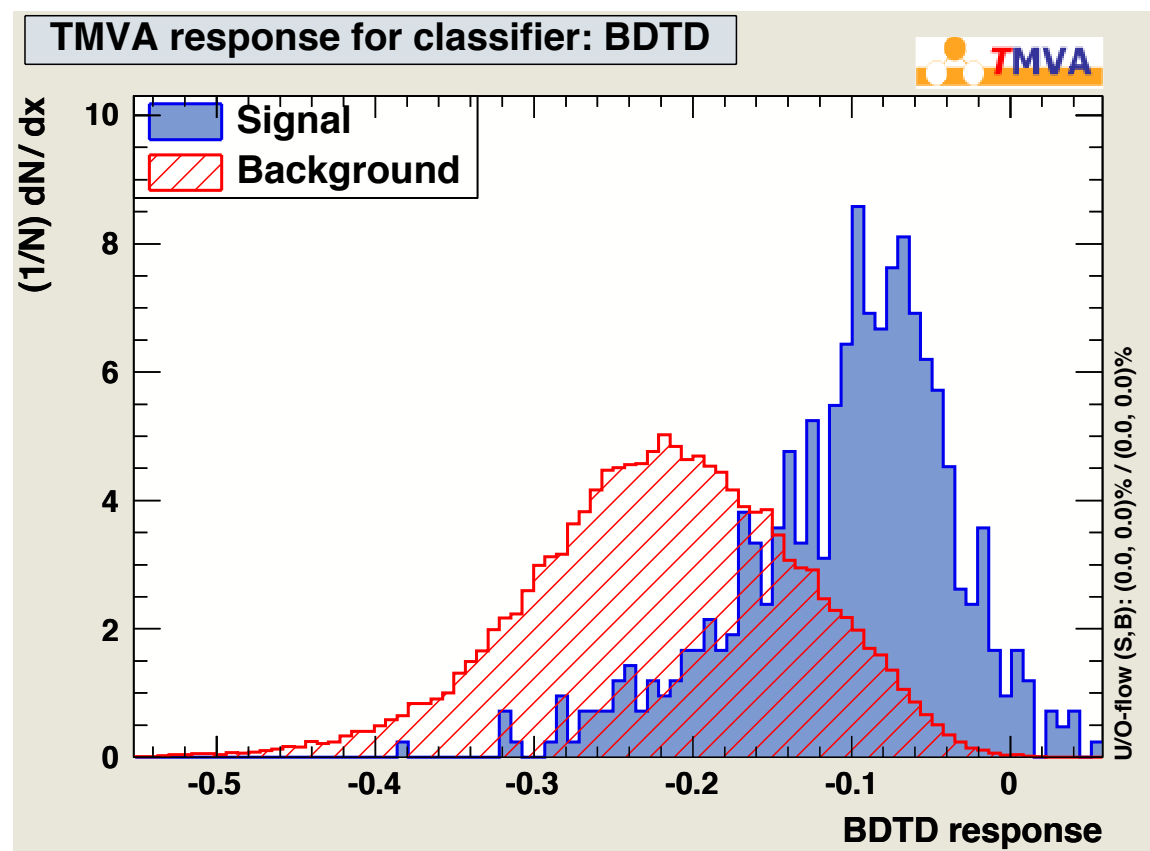
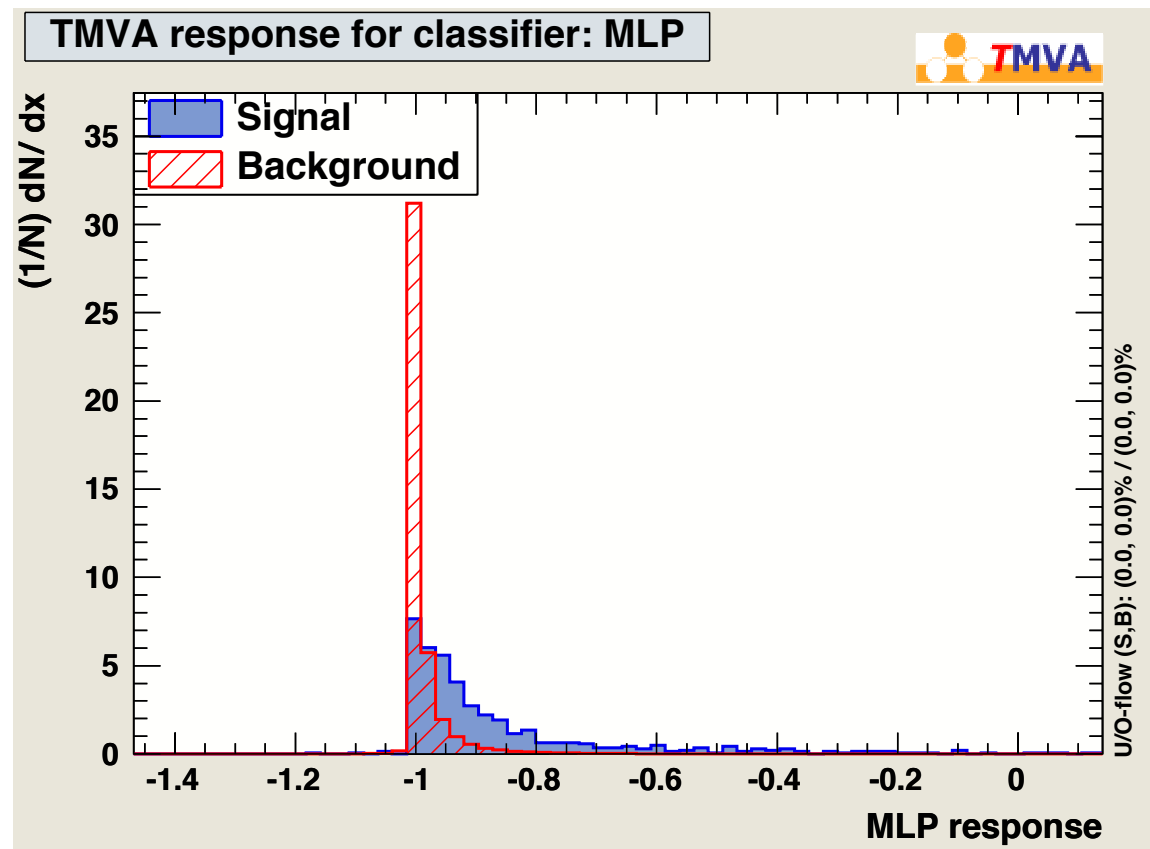


Correlation Matrix (signal)



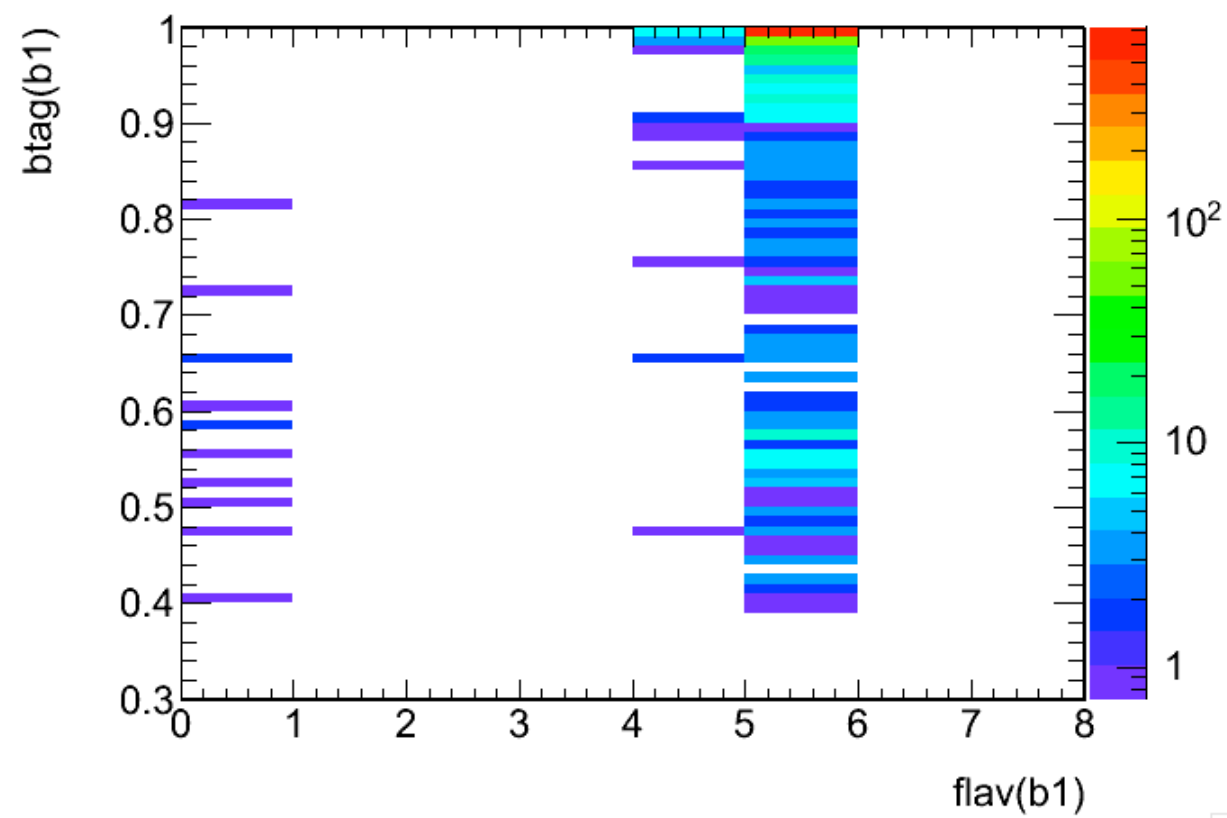
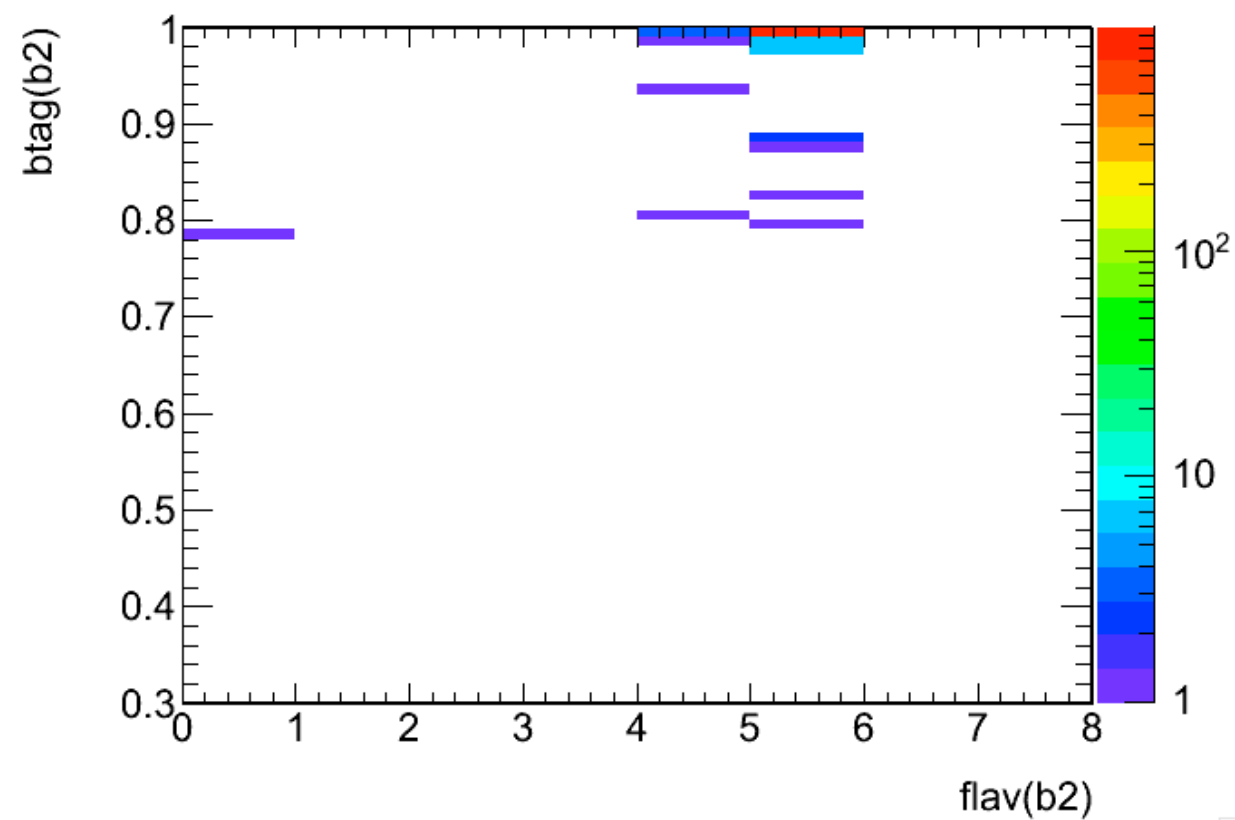
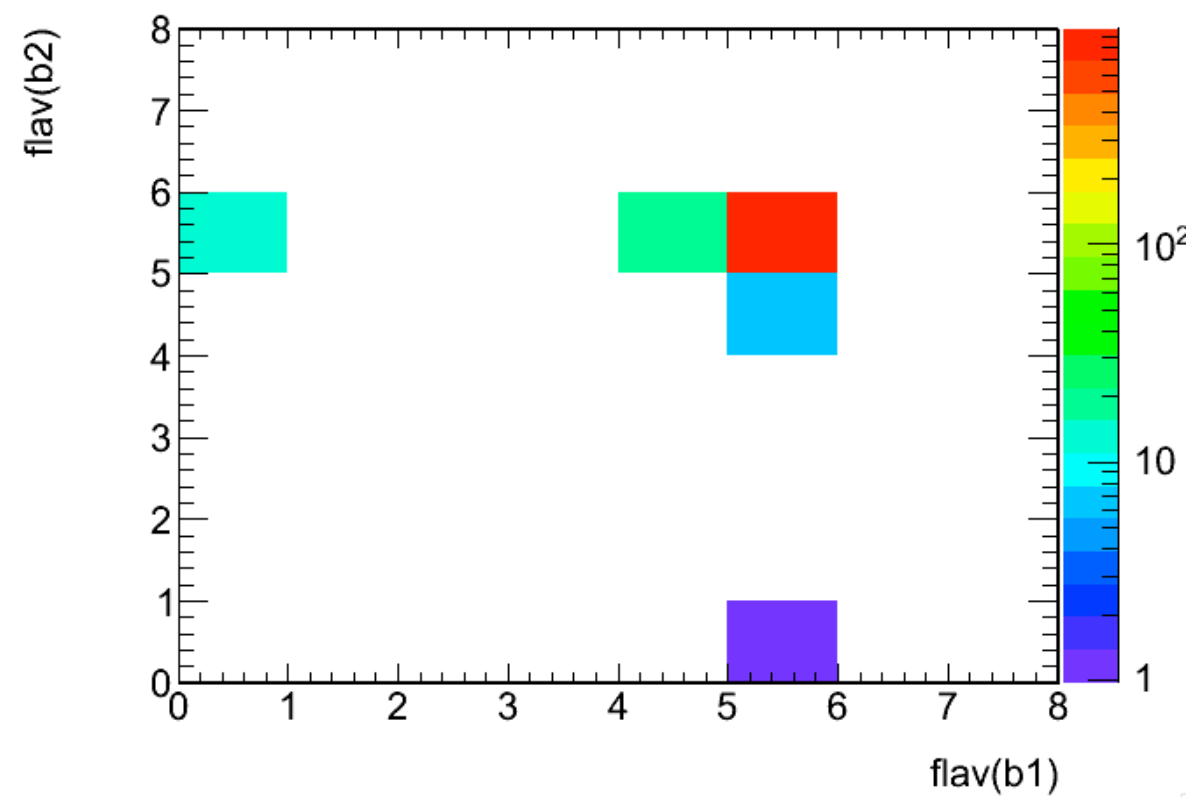
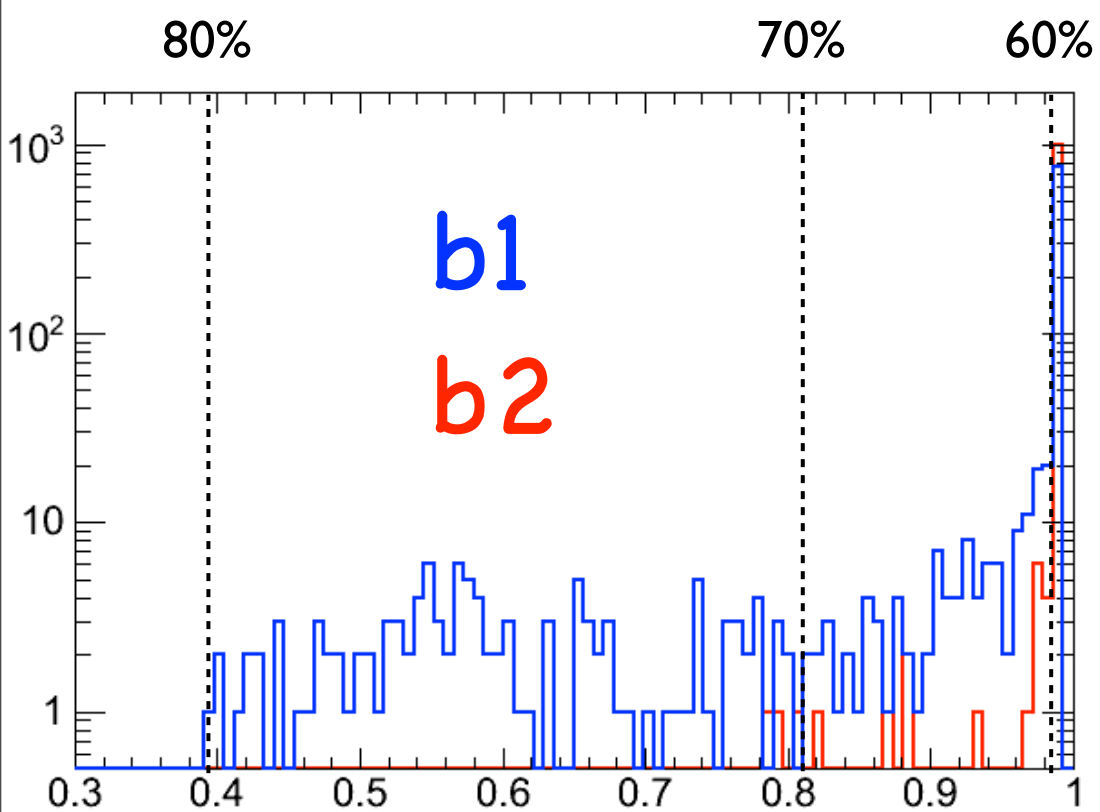
Correlation Matrix (background)

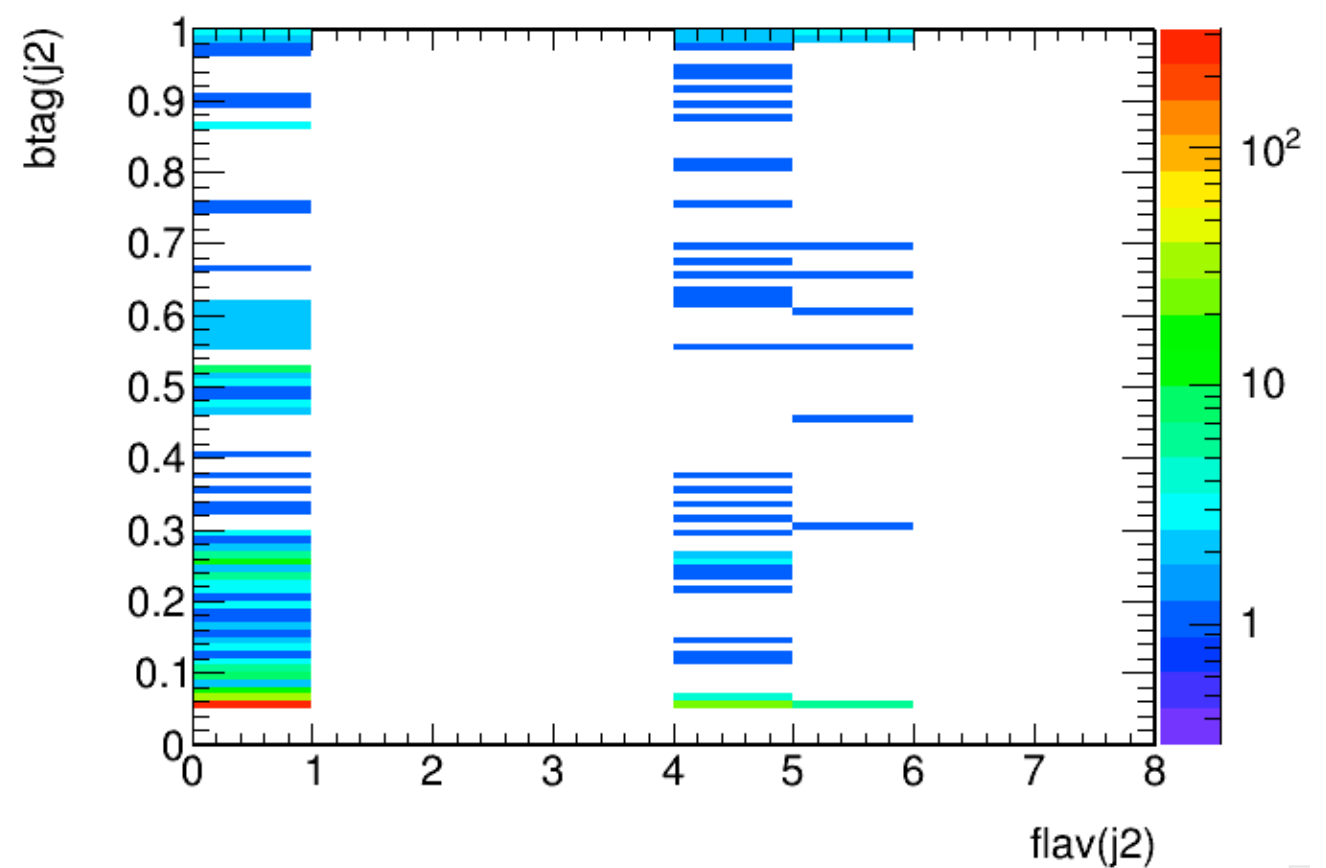
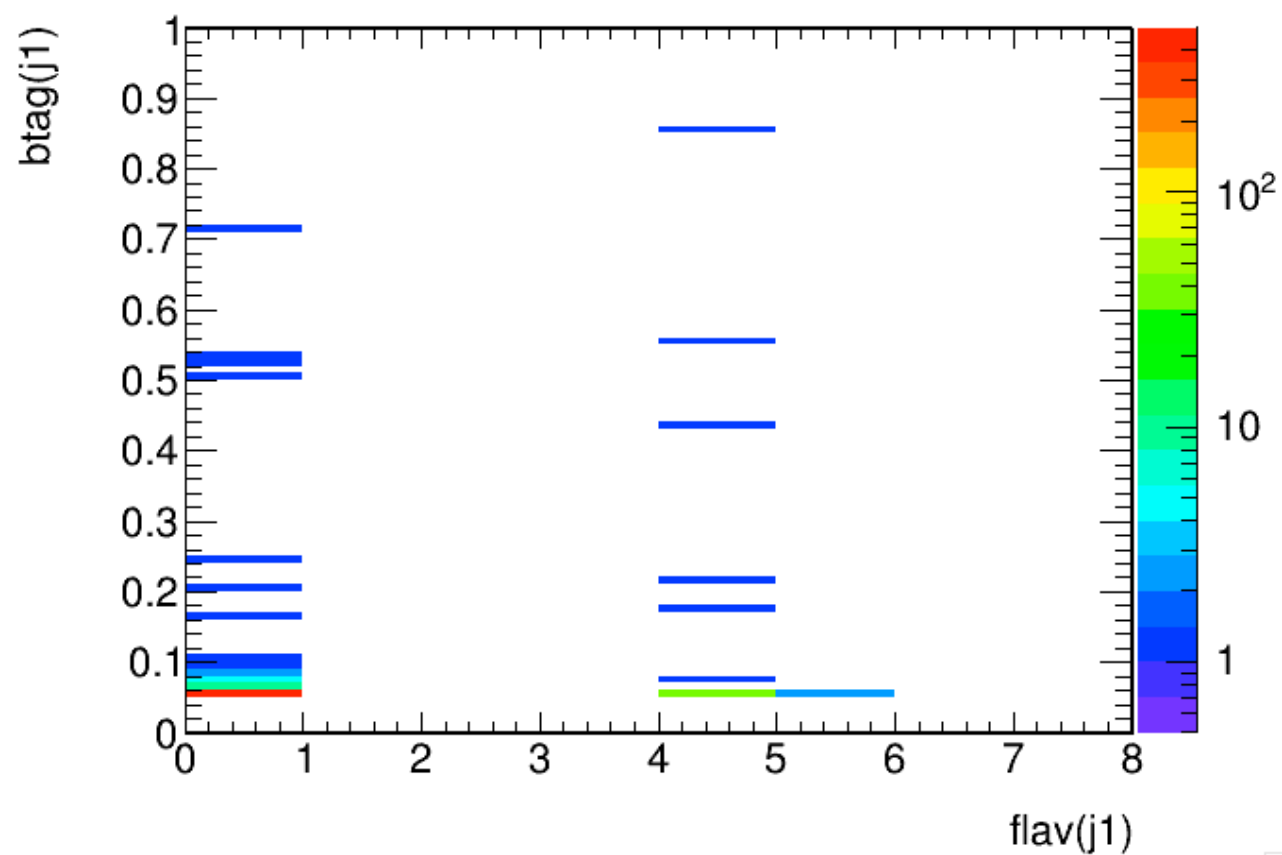
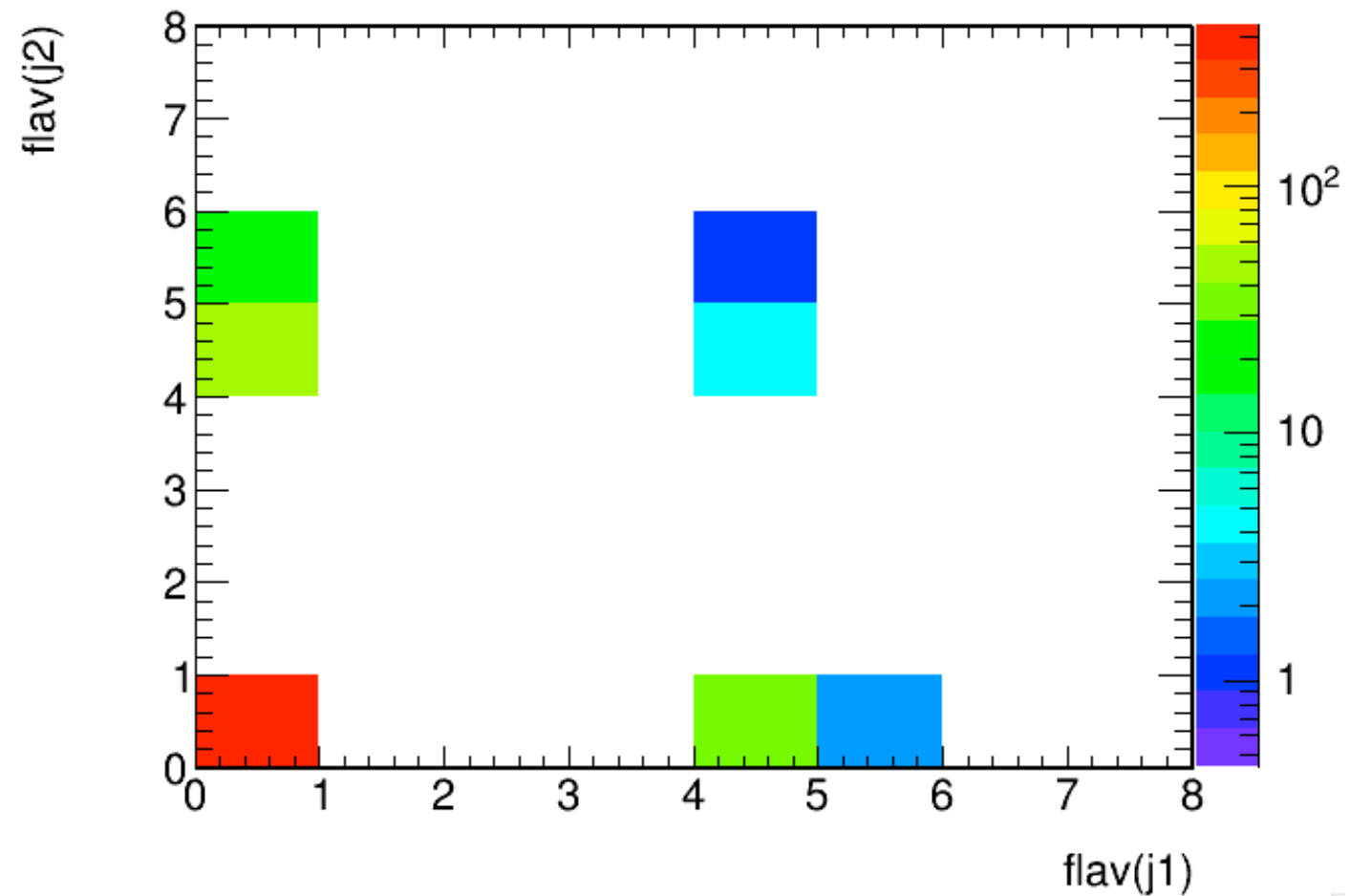
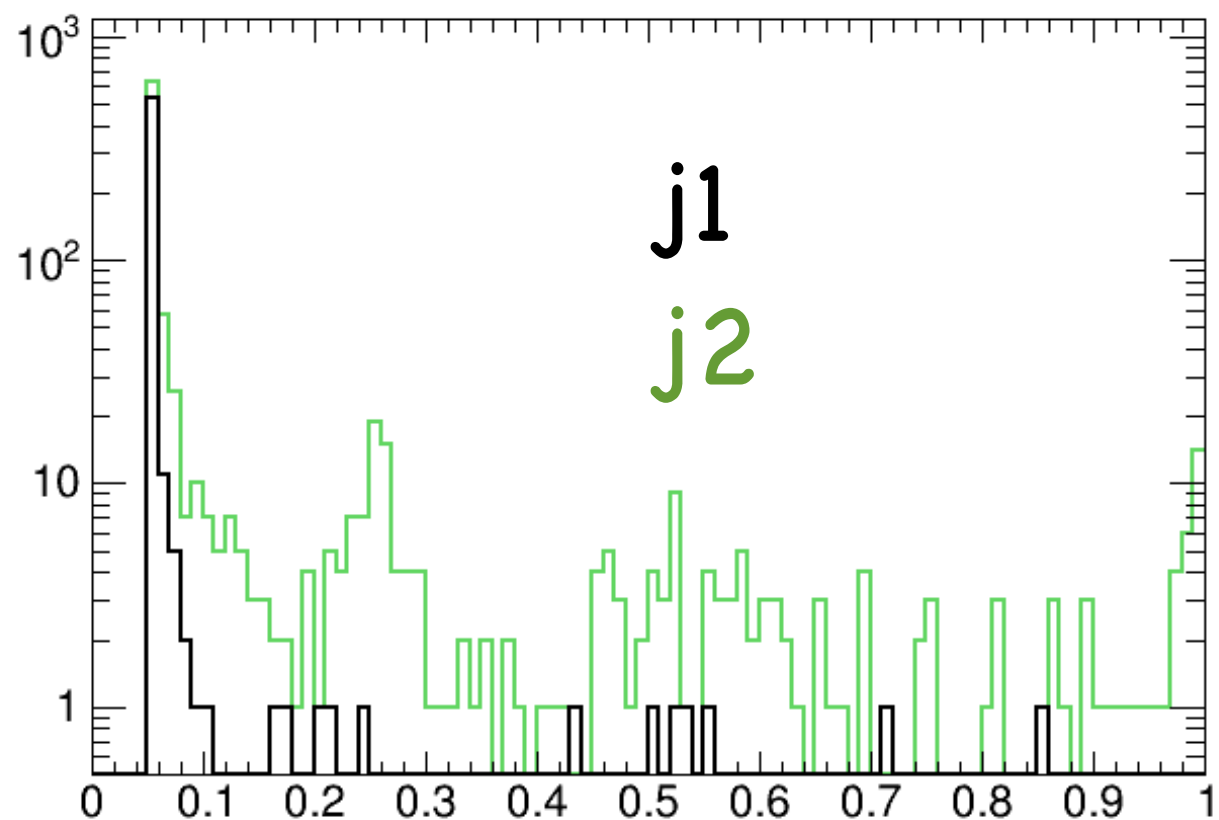


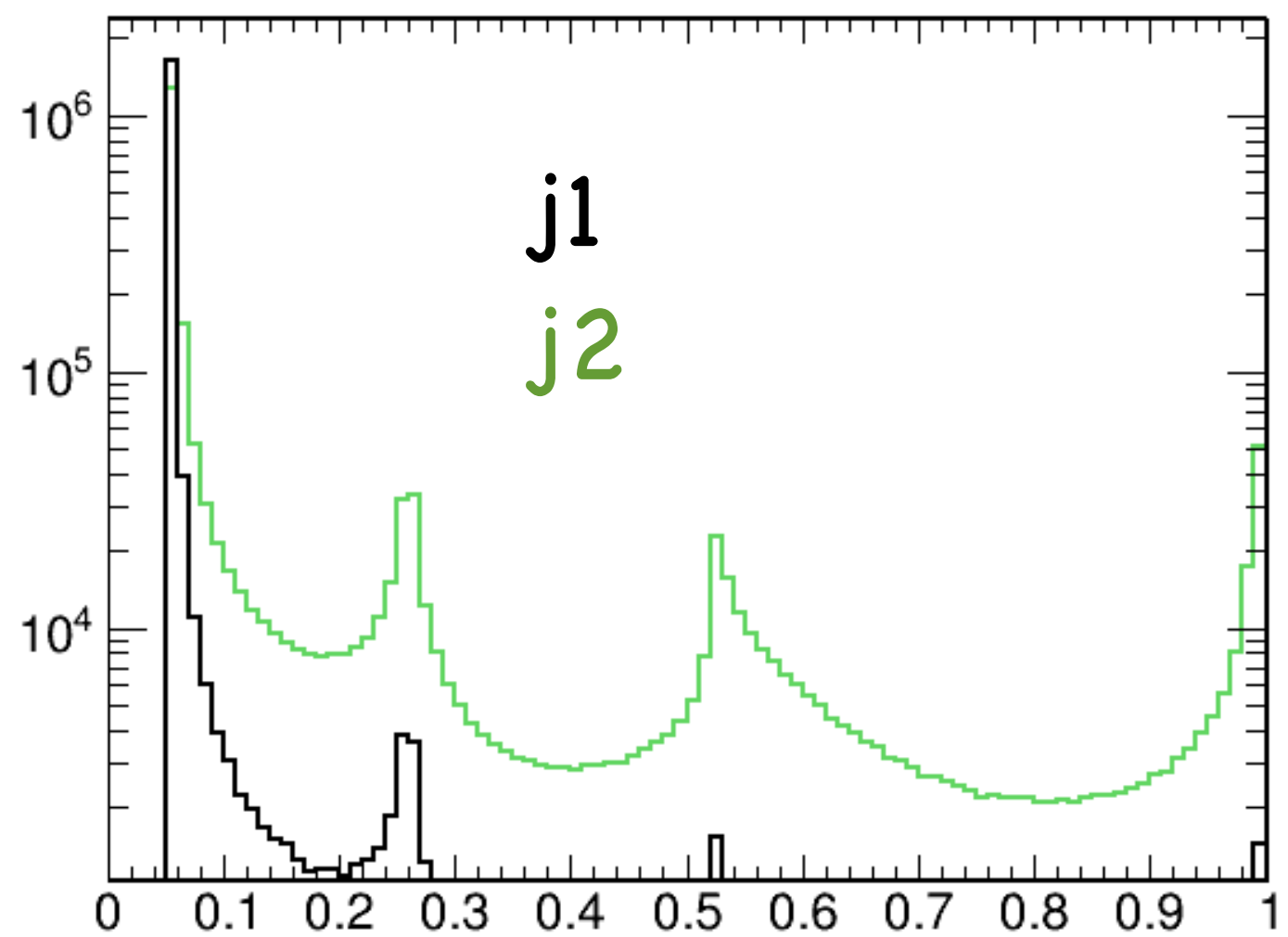
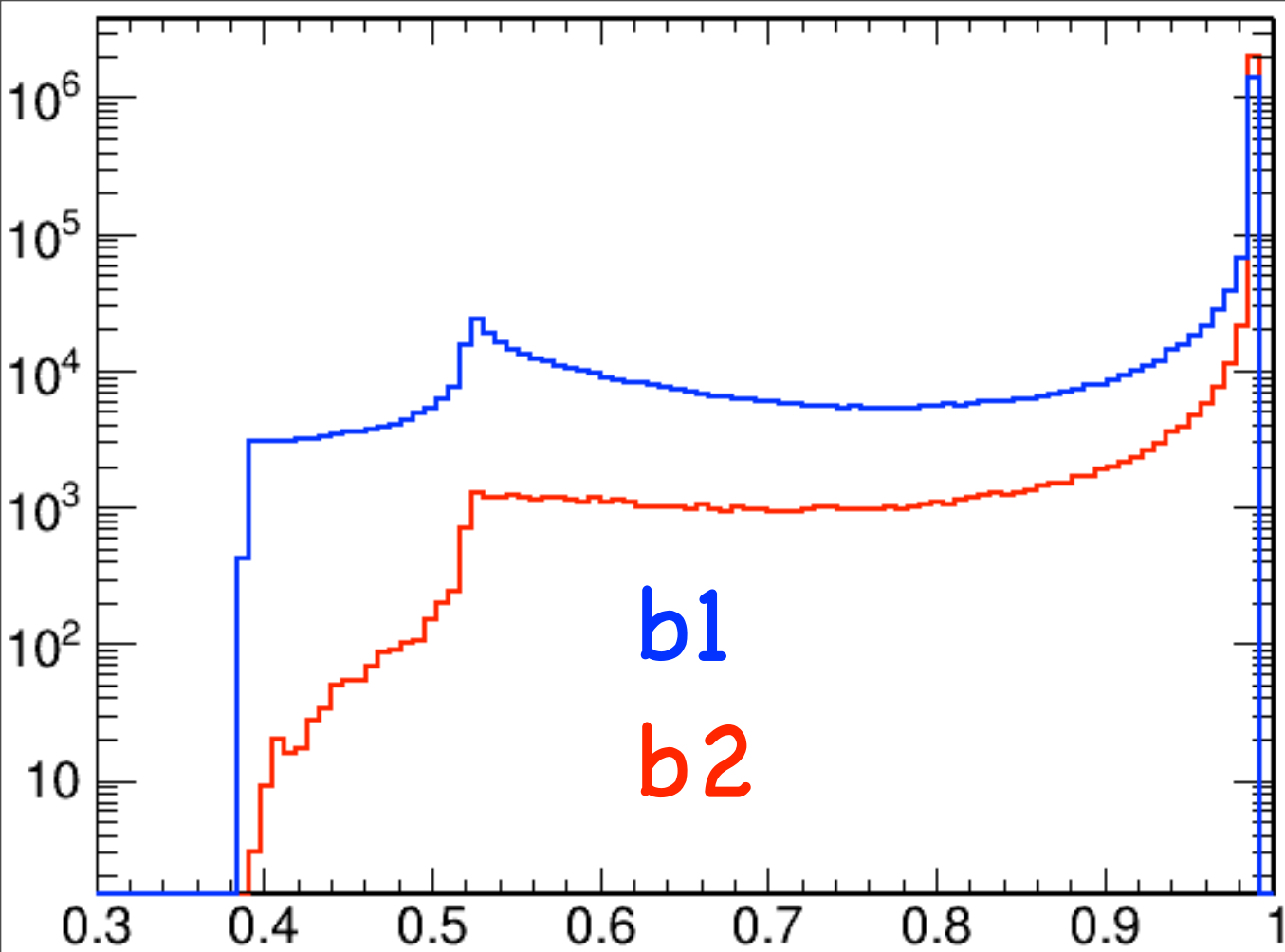


Attempting different b-tag working points:

pre-VBF all mass range	DATA	MC	S/N		S/sqrt(S+N)	
80%	2151714	184	8,55E-05		0,125	
70%	1723594	162	9,41E-05	1,1	0,124	0,986
60%	1379465	139	1,00E-04	1,2	0,118	0,941
pre-VBF signal region						
80%	1024873	175	1,71E-04		0,173	
70%	837258	156	1,86E-04	1,1	0,170	0,982
60%	676880	134	1,99E-04	1,2	0,163	0,943
1-80% 1-70%	1006687	175	1,74E-04	1,0	0,174	1,006
1-80% 1-60%	967694	173	1,79E-04	1,0	0,176	1,014
1-70% 1-60%	825185	155	1,87E-04	1,1	0,170	0,983
anti b-tag vbf 80%	869359	155	1,79E-04	1,0	0,167	0,962
anti b-tag vbf 70%	965263	168	1,74E-04	1,0	0,171	0,988
anti b-tag vbf 60%	995771	173	1,74E-04	1,0	0,173	1,001







[VBFH(125)->bb]

[ggH(125) inclusive]

F
S

VBF FS		cut eff	+/- error	tot eff	+/- err		gg FS		cut eff	+/- error	tot eff	+/- err
generated	99999						generated	99900				
HFOR	99999	1,000	0,000	1,0000	0,0000		HFOR	99900	1,000	0,000	9,99E-01	9,95E-05
PV	99979	1,000	0,000	0,9998	0,0000		PV	99866	1,000	0,000	9,99E-01	1,15E-04
LAr error	99979	1,000	0,000	0,9998	0,0000		LAr error	99866	1,000	0,000	9,99E-01	1,15E-04
trigger (w)	5285	0,053	0,001	0,0529	0,0007		trigger (w)	620	0,006	0,000	6,20E-03	2,48E-04
EOR	5174	0,979	0,002	0,0517	0,0007		EOR	612	0,987	0,005	6,12E-03	2,47E-04
jvf	4567	0,883	0,004	0,0457	0,0007		jvf	559	0,913	0,011	5,59E-03	2,36E-04
4J50	1463	0,320	0,007	0,0146	0,0004		4J50	156	0,279	0,019	1,56E-03	1,25E-04
Btag	1231	0,841	0,010	0,0123	0,0003		Btag	129	0,827	0,030	1,29E-03	1,14E-04
DPhiBB	1010	0,820	0,011	0,0101	0,0003		DPhiBB	110	0,853	0,031	1,10E-03	1,05E-04
VBFhm	484	0,479	0,016	0,0048	0,0002		VBFhm	15	0,136	0,033	1,50E-04	3,87E-05
SR	452	0,934	0,011	0,0045	0,0002		SR	13	0,867	0,088	1,30E-04	3,61E-05

A
F

VBF AF							gg AF					
generated							generated					
HFOR				0,0000	0,0000		HFOR				0,00E+00	0,00E+00
PV				0,0000	0,0000		PV				0,00E+00	0,00E+00
LAr error				0,0000	0,0000		LAr error				0,00E+00	0,00E+00
trigger (w)				0,0000	0,0000		trigger (w)				0,00E+00	0,00E+00
EOR				0,0000	0,0000		EOR				0,00E+00	0,00E+00
jvf				0,0000	0,0000		jvf				0,00E+00	0,00E+00
4J50				0,0000	0,0000		4J50				0,00E+00	0,00E+00
Btag				0,0000	0,0000		Btag				0,00E+00	0,00E+00
DPhiBB				0,0000	0,0000		DPhiBB				0,00E+00	0,00E+00
VBFhm				0,0000	0,0000		VBFhm				0,00E+00	0,00E+00
SR				0,0000	0,0000		SR				0,00E+00	0,00E+00