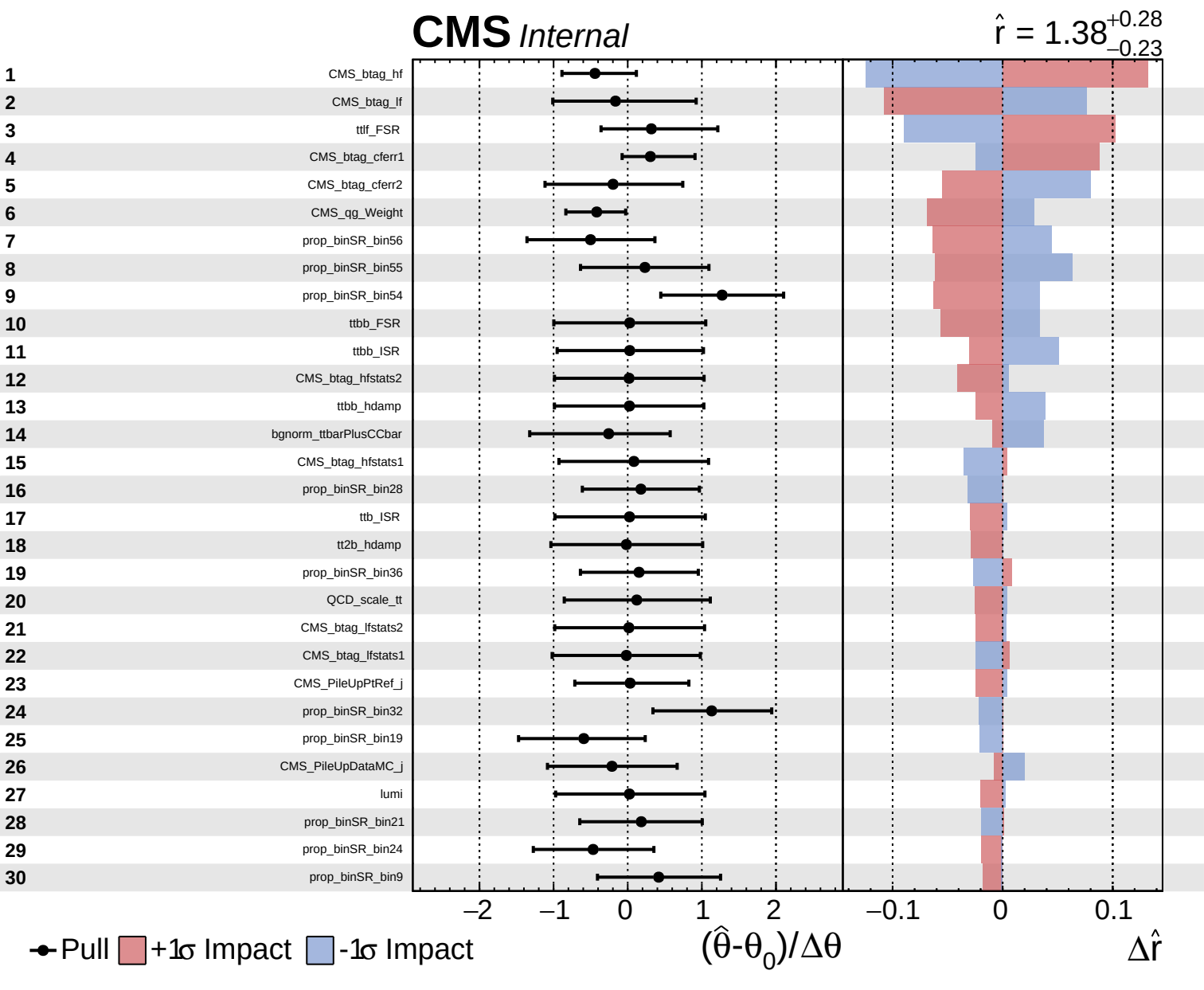
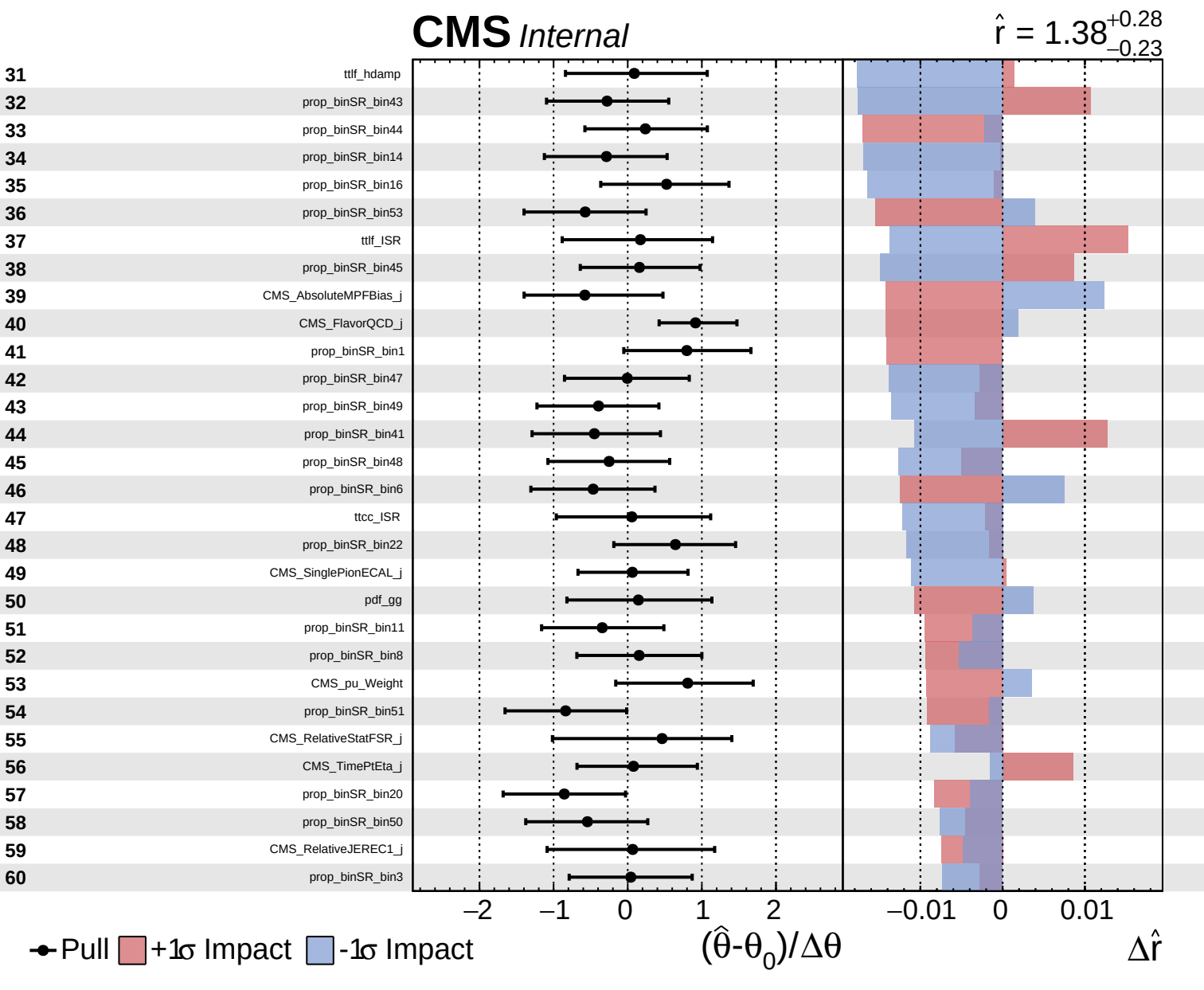
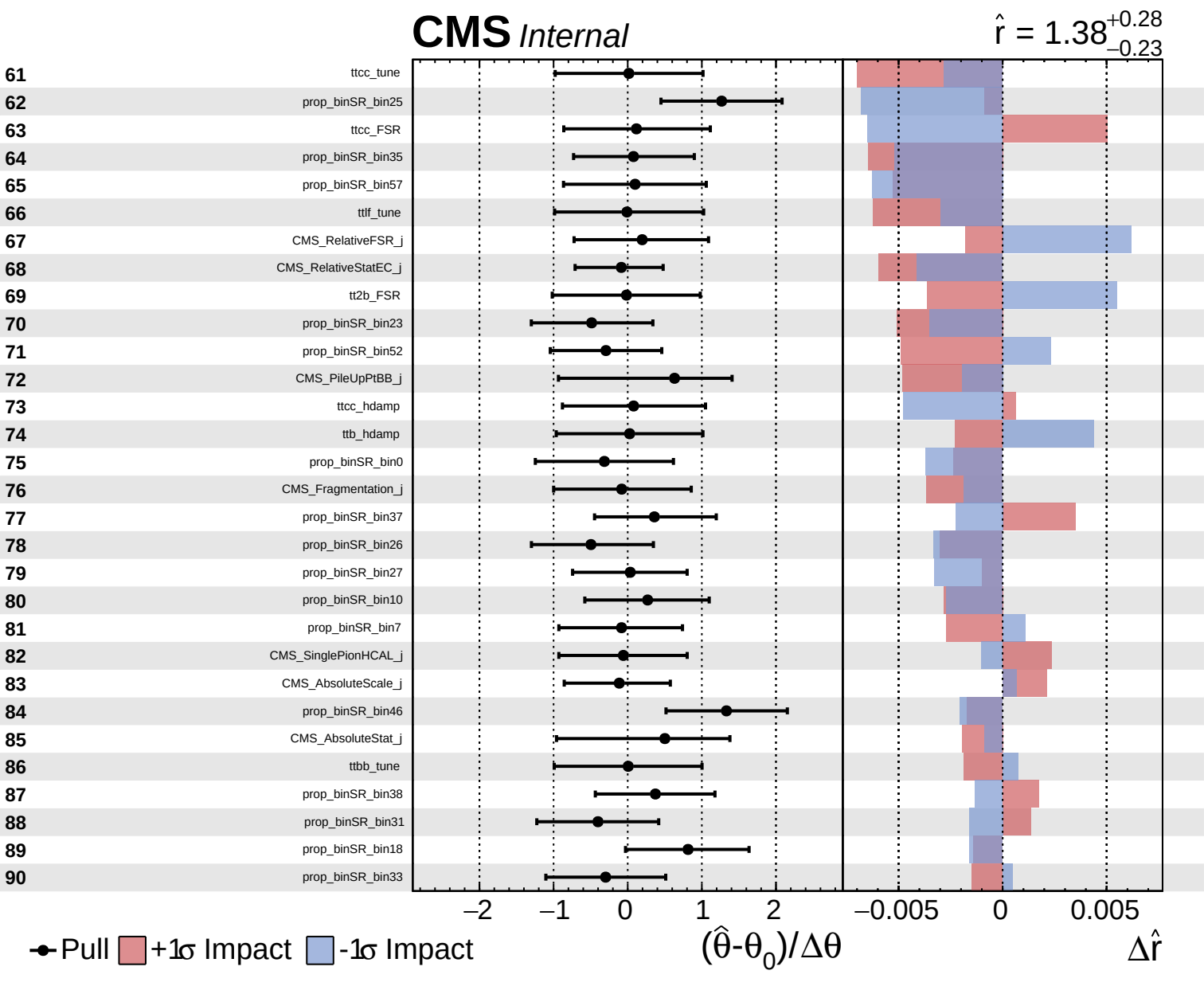
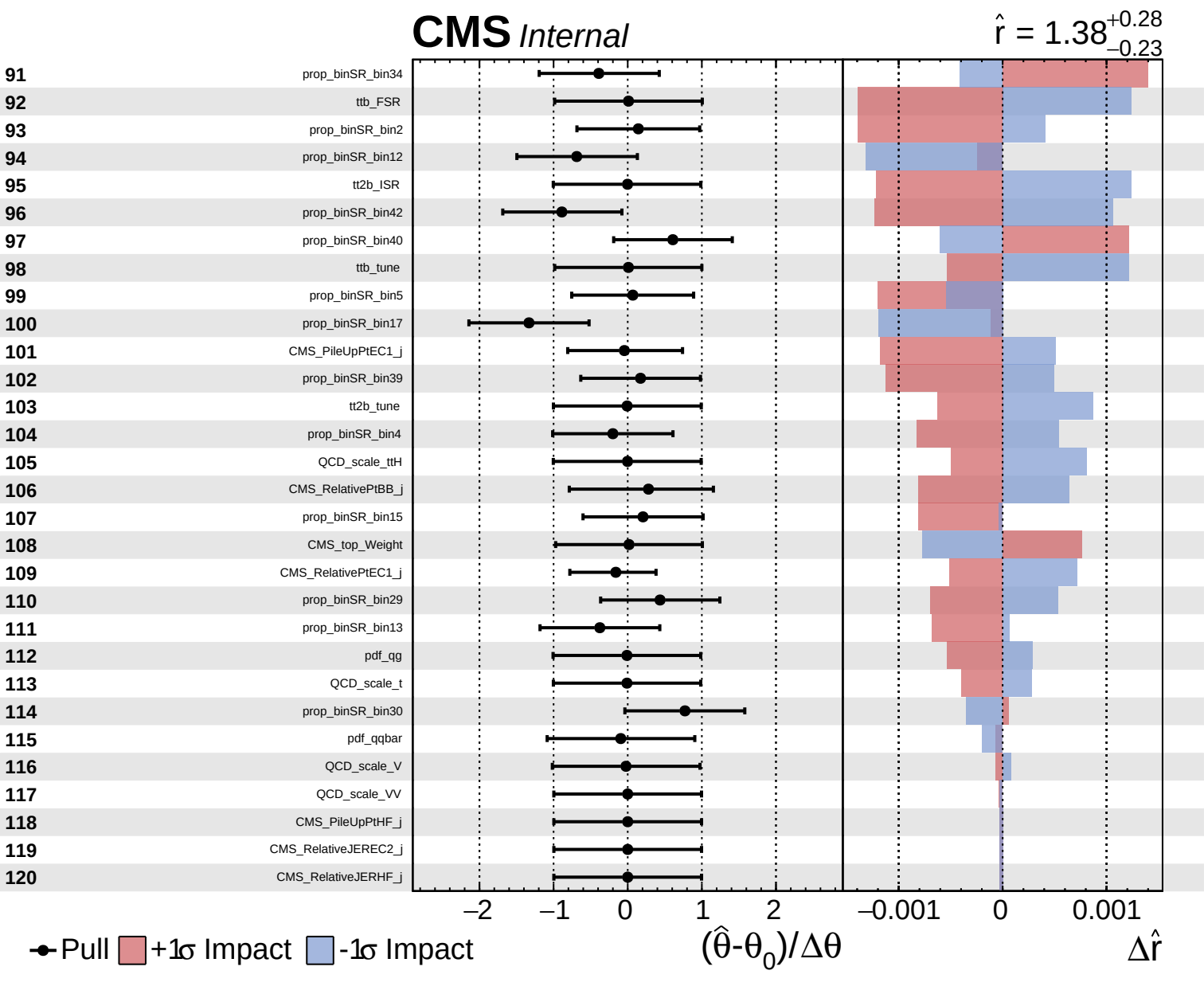
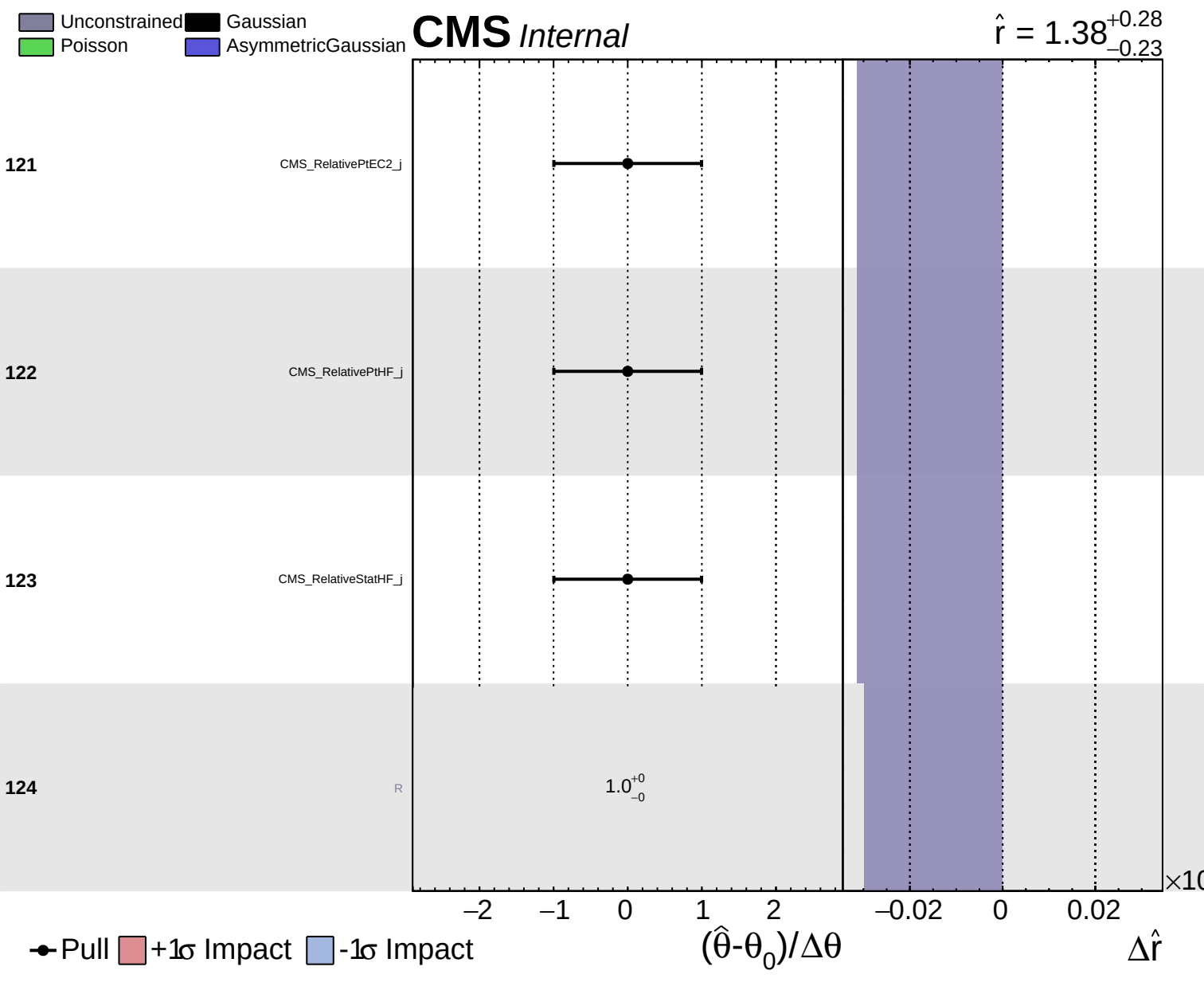

CMS Internal
$\hat{r} = 1.38^{+0.28}_{-0.23}$
1 CMS_btag_hf
2 CMS_btag_lf
3 ttlf_FSR
4 CMS_btag_cferr1
5 CMS_btag_cferr2
6 CMS_qg_Weight
7 prop_binSR_bin56
8 prop_binSR_bin55
9 prop_binSR_bin54
10 ttbb_FSR
11 ttbb_ISR
12 CMS_btag_hfstats2
13 ttbb_hdamp
14 bgnorm_ttbarPlusCCbar
15 CMS_btag_hfstats1
16 prop_binSR_bin28
17 ttb_ISR
18 tt2b_hdamp
19 prop_binSR_bin36
20 QCD_scale_tt
21 CMS_btag_lfstats2
22 CMS_btag_lfstats1
23 CMS_PileUpPtRef_j
24 prop_binSR_bin32
25 prop_binSR_bin19
26 CMS_PileUpDataMC_j
27 lumi
28 prop_binSR_bin21
29 prop_binSR_bin24
30 prop_binSR_bin9
−2 −1 0 1 2
−0.1 0 0.1
Pull +1σ Impact -1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\hat{r}$


CMS Internal
r̂ = 1.38 +0.28 −0.23
31 ttlf_hdamp
32 prop_binSR_bin43
33 prop_binSR_bin44
34 prop_binSR_bin14
35 prop_binSR_bin16
36 prop_binSR_bin53
37 ttlf_ISR
38 prop_binSR_bin45
39 CMS_AbsoluteMPFBias_j
40 CMS_FlavorQCD_j
41 prop_binSR_bin1
42 prop_binSR_bin47
43 prop_binSR_bin49
44 prop_binSR_bin41
45 prop_binSR_bin48
46 prop_binSR_bin6
47 ttcc_ISR
48 prop_binSR_bin22
49 CMS_SinglePionECAL_j
50 pdf_gg
51 prop_binSR_bin11
52 prop_binSR_bin8
53 CMS_pu_Weight
54 prop_binSR_bin51
55 CMS_RelativeStatFSR_j
56 CMS_TimePtEta_j
57 prop_binSR_bin20
58 prop_binSR_bin50
59 CMS_RelativeJEREC1_j
60 prop_binSR_bin3
−2 −1 0 1 2
−0.01 0 0.01
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
Δr̂


CMS Internal
$\hat{r} = 1.38^{+0.28}_{-0.23}$
61 ttcc_tune
62 prop_binSR_bin25
63 ttcc_FSR
64 prop_binSR_bin35
65 prop_binSR_bin57
66 ttlf_tune
67 CMS_RelativeFSR_j
68 CMS_RelativeStatEC_j
69 tt2b_FSR
70 prop_binSR_bin23
71 prop_binSR_bin52
72 CMS_PileUpPtBB_j
73 ttcc_hdamp
74 ttb_hdamp
75 prop_binSR_bin0
76 CMS_Fragmentation_j
77 prop_binSR_bin37
78 prop_binSR_bin26
79 prop_binSR_bin27
80 prop_binSR_bin10
81 prop_binSR_bin7
82 CMS_SinglePionHCAL_j
83 CMS_AbsoluteScale_j
84 prop_binSR_bin46
85 CMS_AbsoluteStat_j
86 ttbb_tune
87 prop_binSR_bin38
88 prop_binSR_bin31
89 prop_binSR_bin18
90 prop_binSR_bin33
−2 −1 0 1 2
−0.005 0 0.005
Pull +1σ Impact -1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\hat{r}$


CMS Internal
$\hat{r} = 1.38^{+0.28}_{-0.23}$
91 prop_binSR_bin34
92 ttb_FSR
93 prop_binSR_bin2
94 prop_binSR_bin12
95 tt2b_ISR
96 prop_binSR_bin42
97 prop_binSR_bin40
98 ttb_tune
99 prop_binSR_bin5
100 prop_binSR_bin17
101 CMS_PileUpPtEC1_j
102 prop_binSR_bin39
103 tt2b_tune
104 prop_binSR_bin4
105 QCD_scale_ttH
106 CMS_RelativePtBB_j
107 prop_binSR_bin15
108 CMS_top_Weight
109 CMS_RelativePtEC1_j
110 prop_binSR_bin29
111 prop_binSR_bin13
112 pdf_qg
113 QCD_scale_t
114 prop_binSR_bin30
115 pdf_qqbar
116 QCD_scale_V
117 QCD_scale_VV
118 CMS_PileUpPtHF_j
119 CMS_RelativeJEREC2_j
120 CMS_RelativeJERHF_j
−2 −1 0 1 2
−0.001 0 0.001
Pull +1σ Impact -1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\hat{r}$


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
r̂ = 1.38 +0.28 −0.23
121
CMS_RelativePtEC2_j
122
CMS_RelativePtHF_j
123
CMS_RelativeStatHF_j
124
R
1.0 +0 −0
×10
−2
−1
0
1
2
−0.02
0
0.02
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
Δr̂