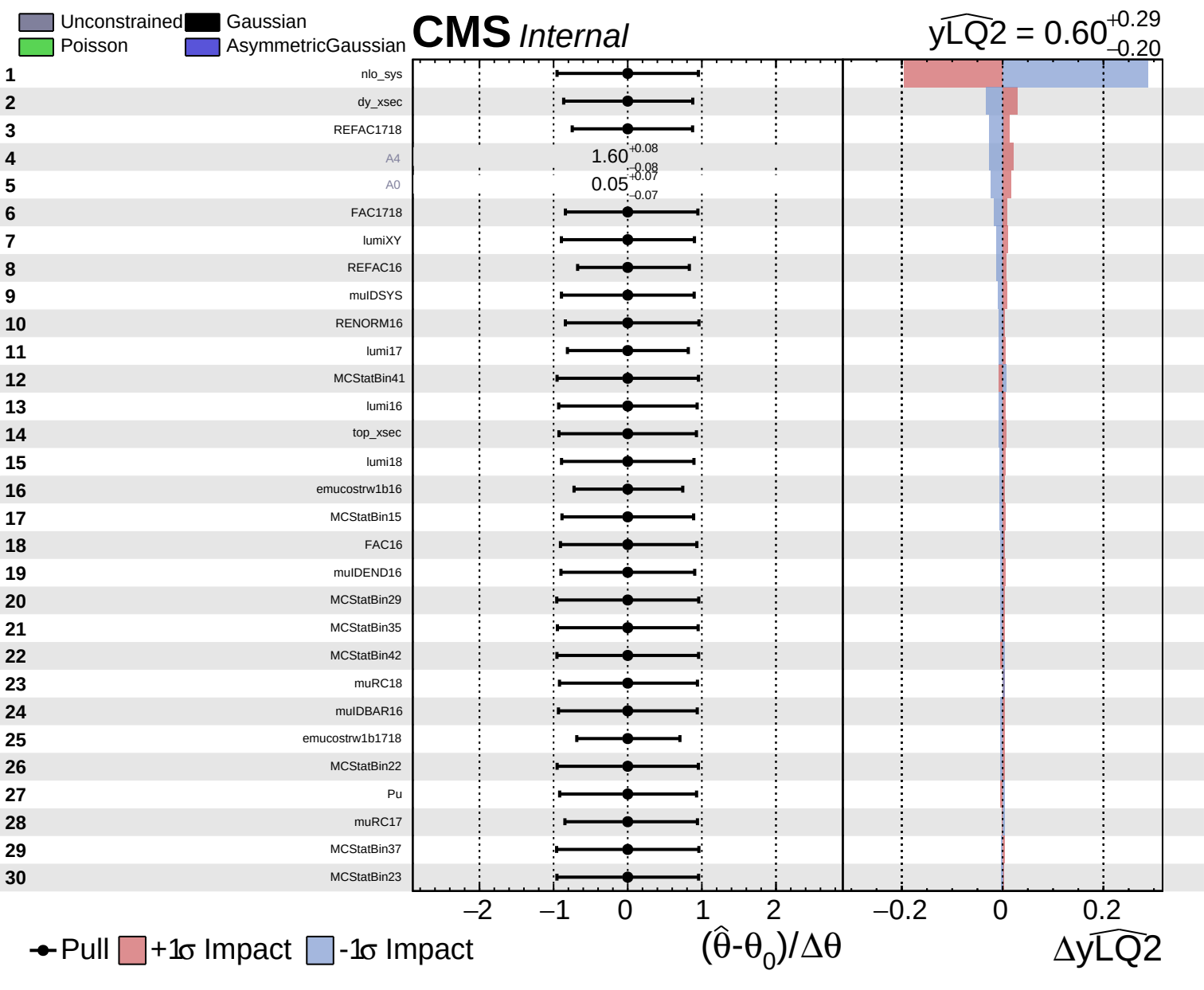
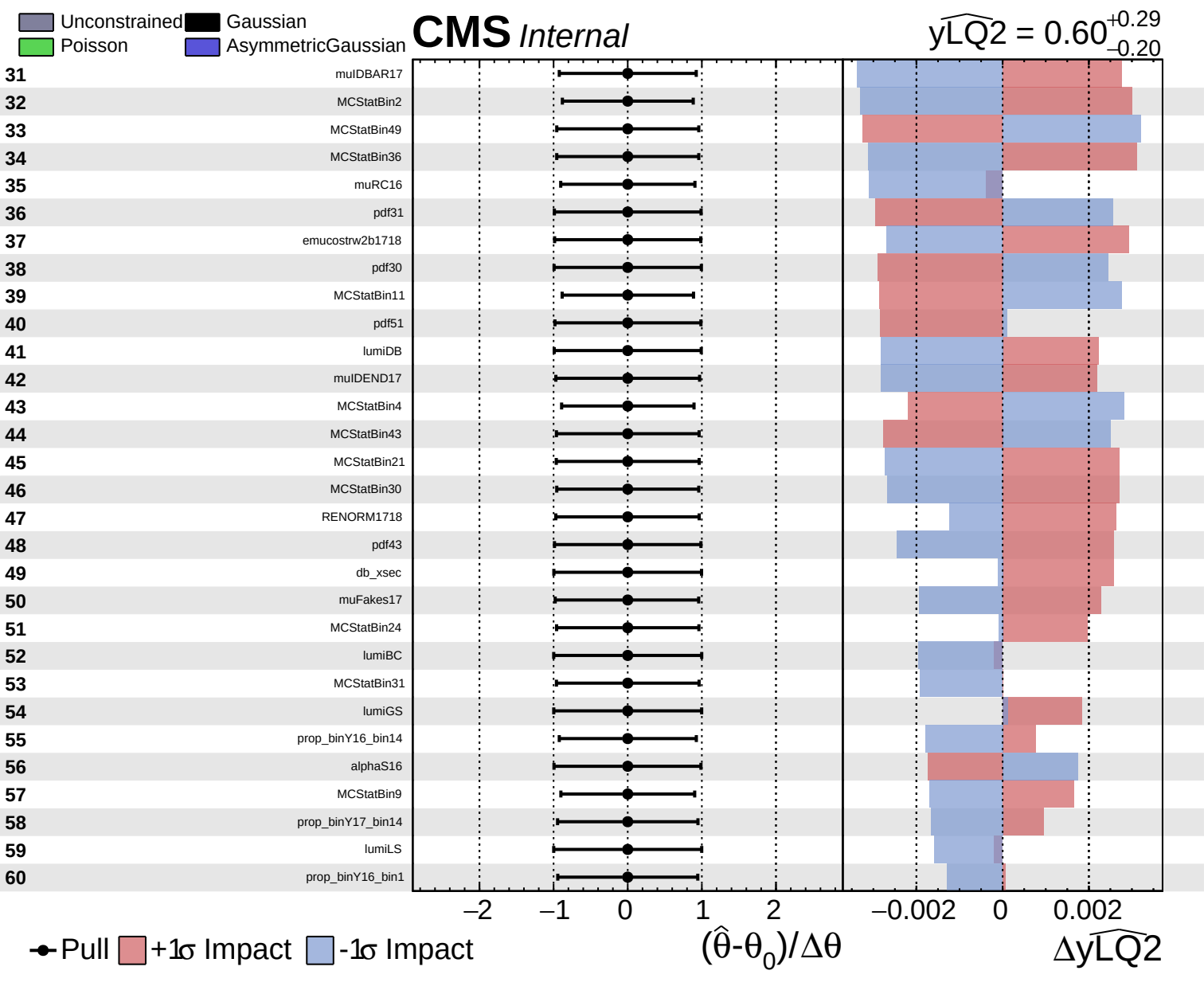
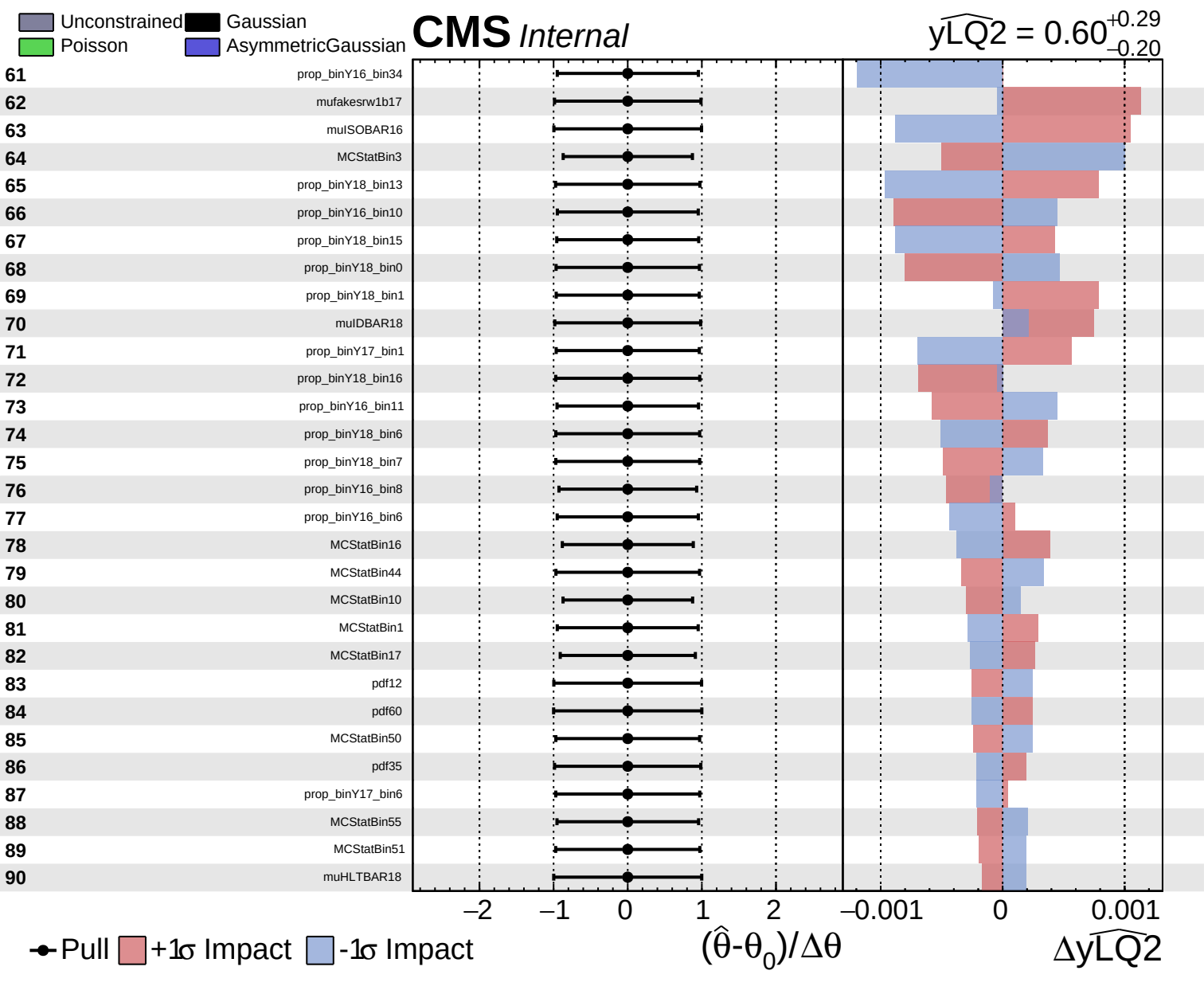
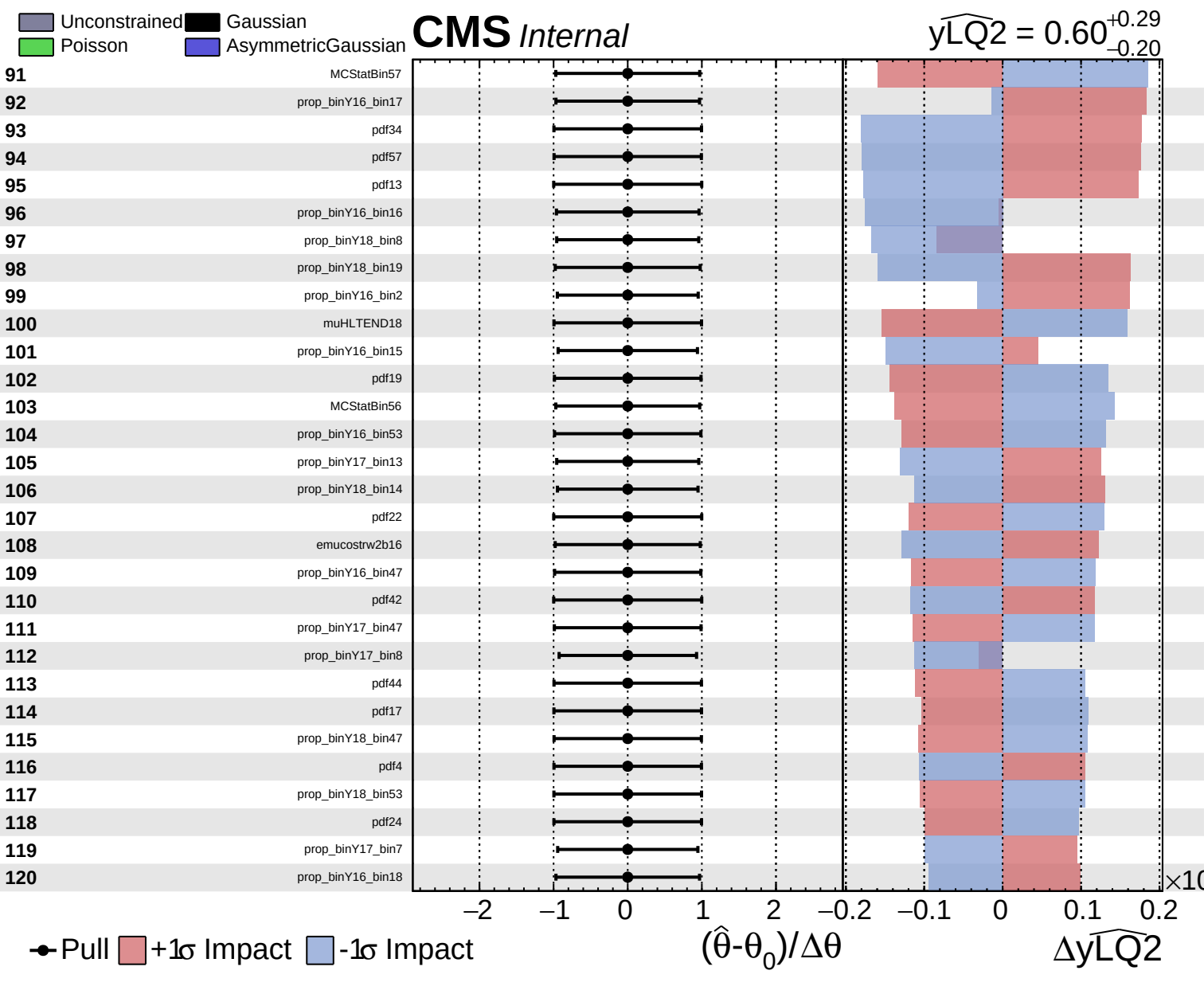
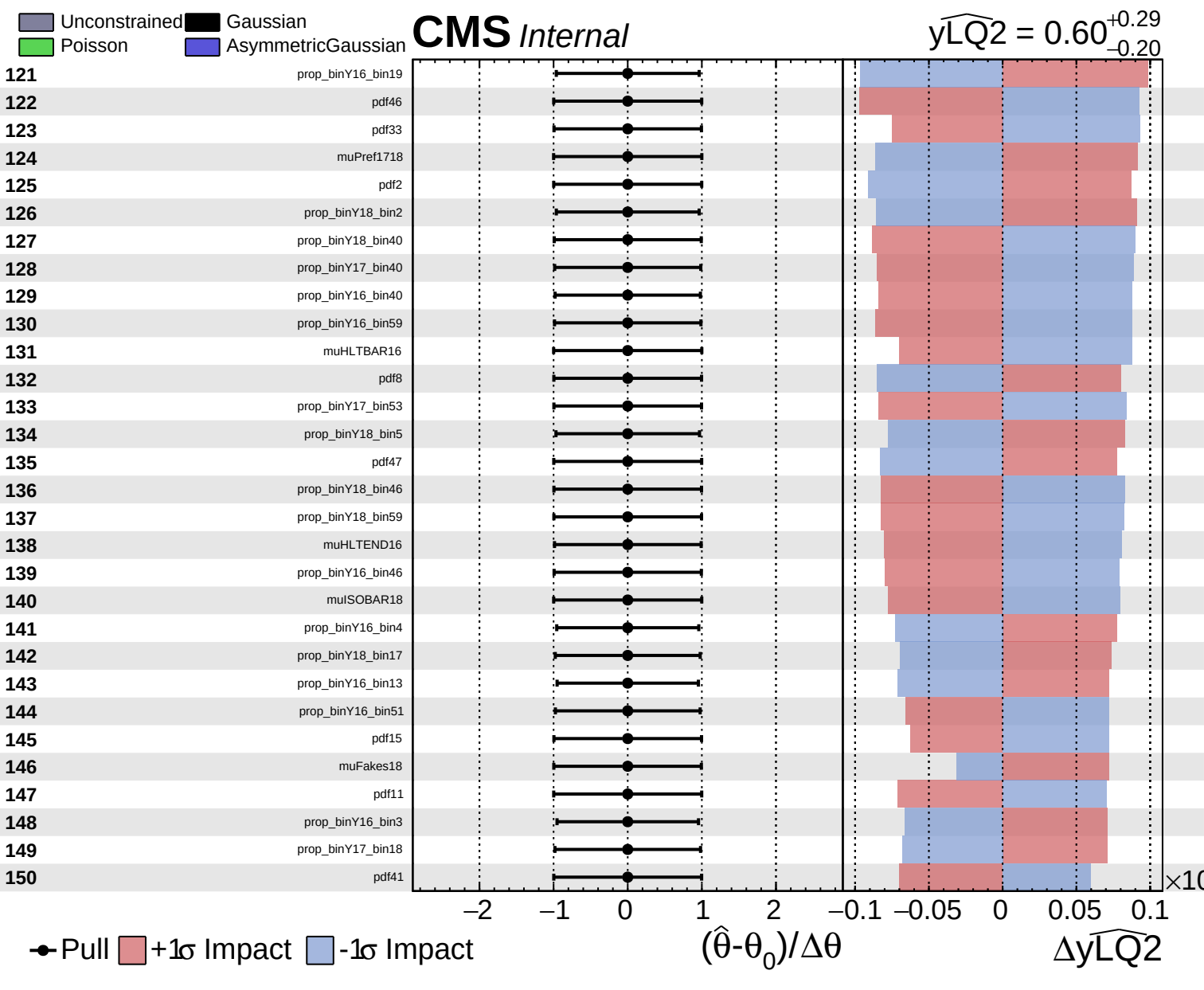
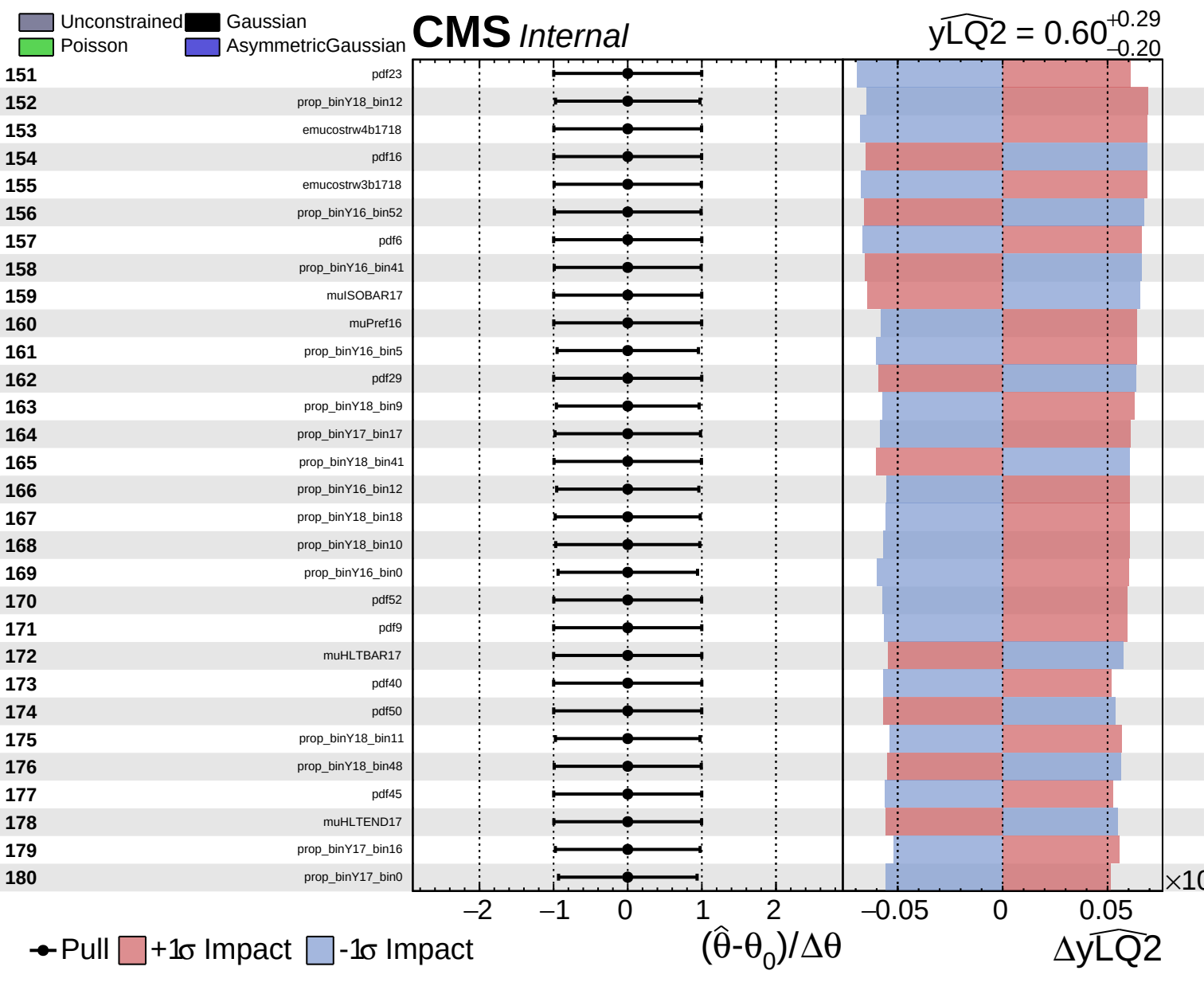

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
$\widehat{yLQ2} = 0.60^{+0.29}_{-0.20}$
1 nlo_sys
2 dy_xsec
3 REFAC1718
4 A4
5 A0
6 FAC1718
7 lumiXY
8 REFAC16
9 muIDSYS
10 RENORM16
11 lumi17
12 MCStatBin41
13 lumi16
14 top_xsec
15 lumi18
16 emucostrw1b16
17 MCStatBin15
18 FAC16
19 muIDEND16
20 MCStatBin29
21 MCStatBin35
22 MCStatBin42
23 muRC18
24 muIDBAR16
25 emucostrw1b1718
26 MCStatBin22
27 Pu
28 muRC17
29 MCStatBin37
30 MCStatBin23
$1.60^{+0.08}_{-0.08}$
$0.05^{+0.07}_{-0.07}$
−2 −1 0 1 2
−0.2 0 0.2
Pull
+1σ Impact
-1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\widehat{yLQ2}$

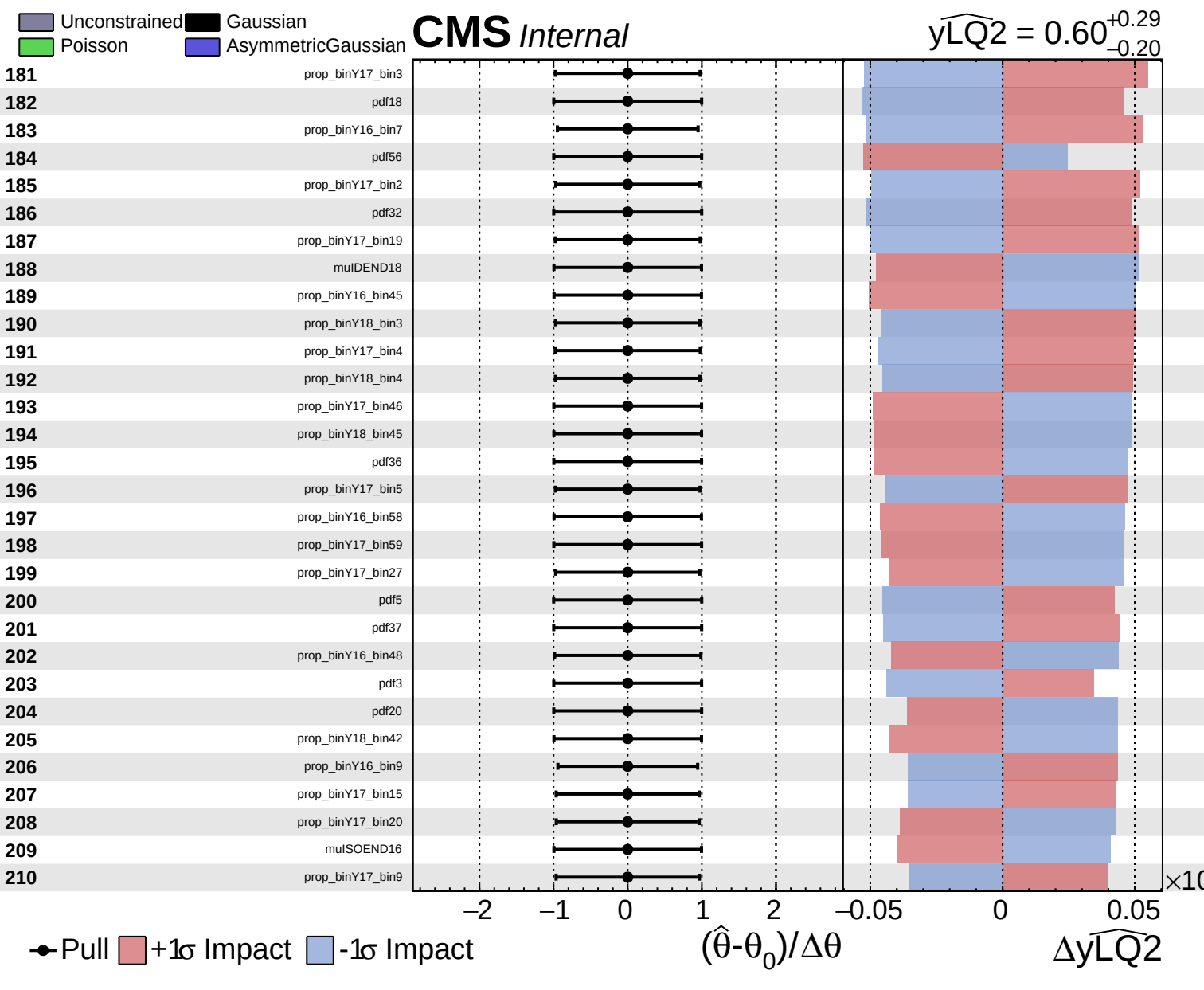

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
yLQ2 = 0.60 +0.29 −0.20
31 muIDBAR17
32 MCStatBin2
33 MCStatBin49
34 MCStatBin36
35 muRC16
36 pdf31
37 emucostrw2b1718
38 pdf30
39 MCStatBin11
40 pdf51
41 lumiDB
42 muIDEND17
43 MCStatBin4
44 MCStatBin43
45 MCStatBin21
46 MCStatBin30
47 RENORM1718
48 pdf43
49 db_xsec
50 muFakes17
51 MCStatBin24
52 lumiBC
53 MCStatBin31
54 lumiGS
55 prop_binY16_bin14
56 alphaS16
57 MCStatBin9
58 prop_binY17_bin14
59 lumiLS
60 prop_binY16_bin1
−2
−1
0
1
2
−0.002
0
0.002
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔyLQ2

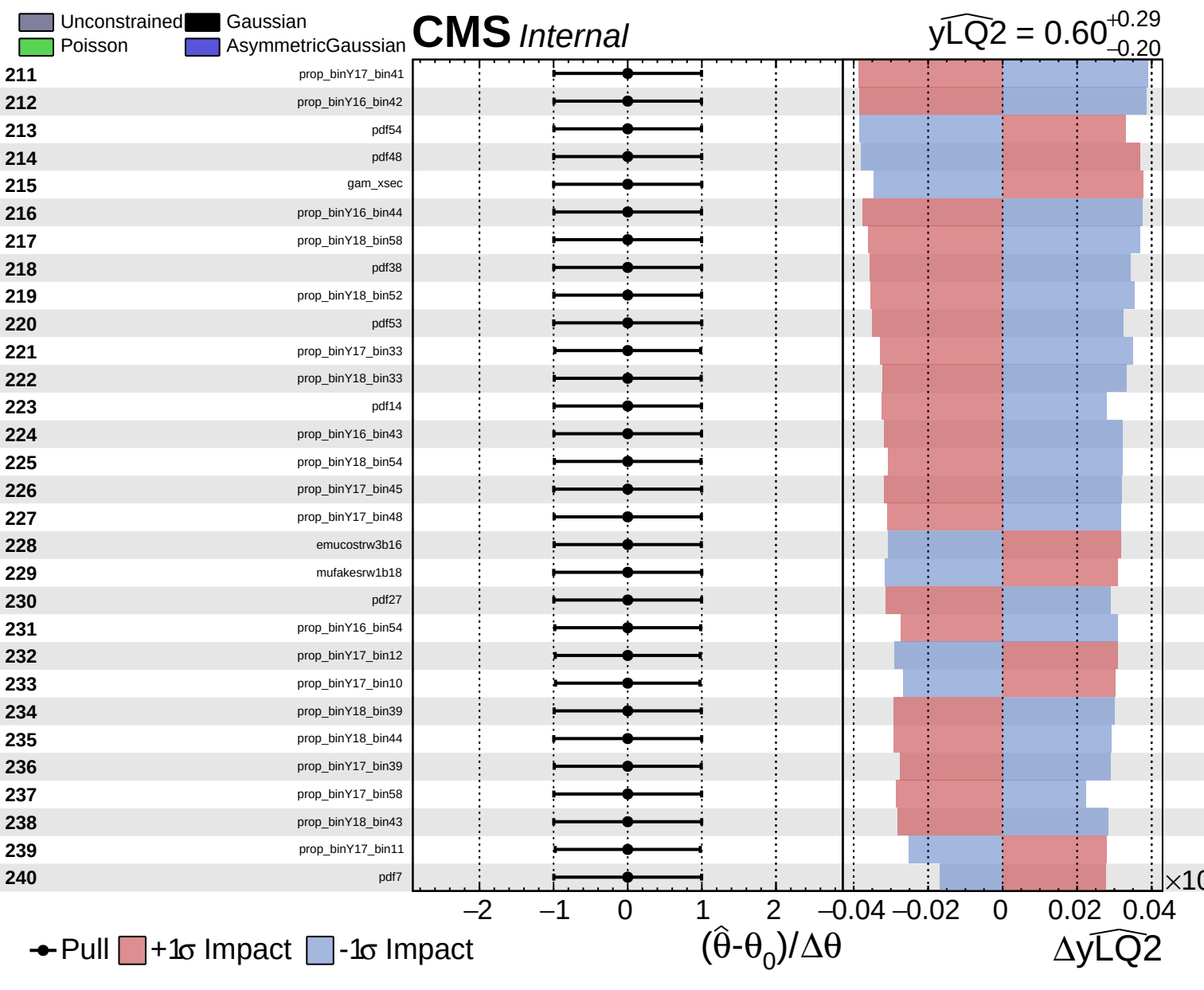

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 0.60 +0.29 −0.20
61 prop_binY16_bin34
62 mufakesrw1b17
63 muISOBAR16
64 MCStatBin3
65 prop_binY18_bin13
66 prop_binY16_bin10
67 prop_binY18_bin15
68 prop_binY18_bin0
69 prop_binY18_bin1
70 muIDBAR18
71 prop_binY17_bin1
72 prop_binY18_bin16
73 prop_binY16_bin11
74 prop_binY18_bin6
75 prop_binY18_bin7
76 prop_binY16_bin8
77 prop_binY16_bin6
78 MCStatBin16
79 MCStatBin44
80 MCStatBin10
81 MCStatBin1
82 MCStatBin17
83 pdf12
84 pdf60
85 MCStatBin50
86 pdf35
87 prop_binY17_bin6
88 MCStatBin55
89 MCStatBin51
90 muHLTBAR18
−2 −1 0 1 2
−0.001 0 0.001
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

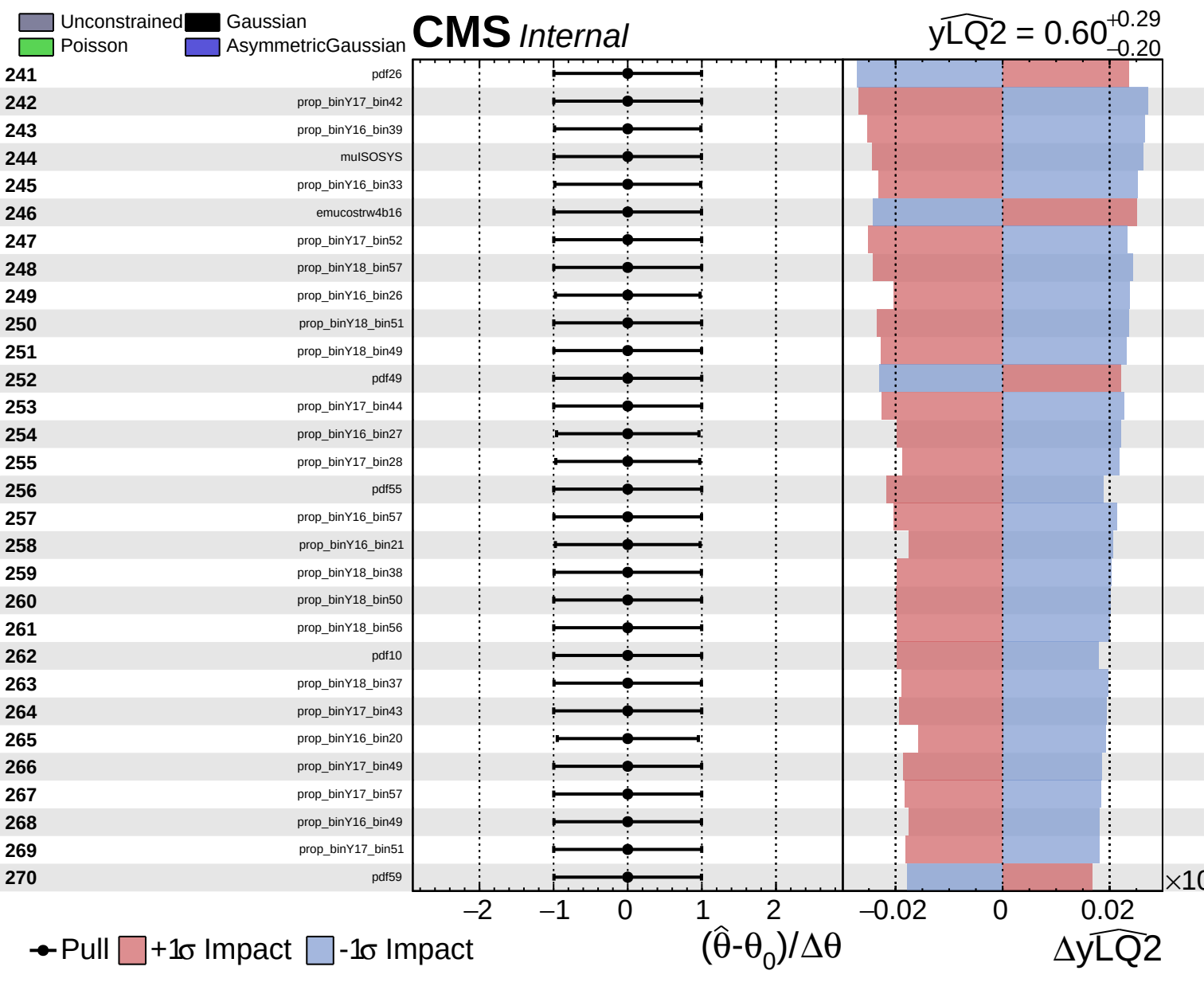

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 0.60 +0.29 −0.20
91 MCStatBin57
92 prop_binY16_bin17
93 pdf34
94 pdf57
95 pdf13
96 prop_binY16_bin16
97 prop_binY18_bin8
98 prop_binY18_bin19
99 prop_binY16_bin2
100 muHLTEND18
101 prop_binY16_bin15
102 pdf19
103 MCStatBin56
104 prop_binY16_bin53
105 prop_binY17_bin13
106 prop_binY18_bin14
107 pdf22
108 emucostrw2b16
109 prop_binY16_bin47
110 pdf42
111 prop_binY17_bin47
112 prop_binY17_bin8
113 pdf44
114 pdf17
115 prop_binY18_bin47
116 pdf4
117 prop_binY18_bin53
118 pdf24
119 prop_binY17_bin7
120 prop_binY16_bin18
−2 −1 0 1 2
−0.2 −0.1 0 0.1 0.2
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

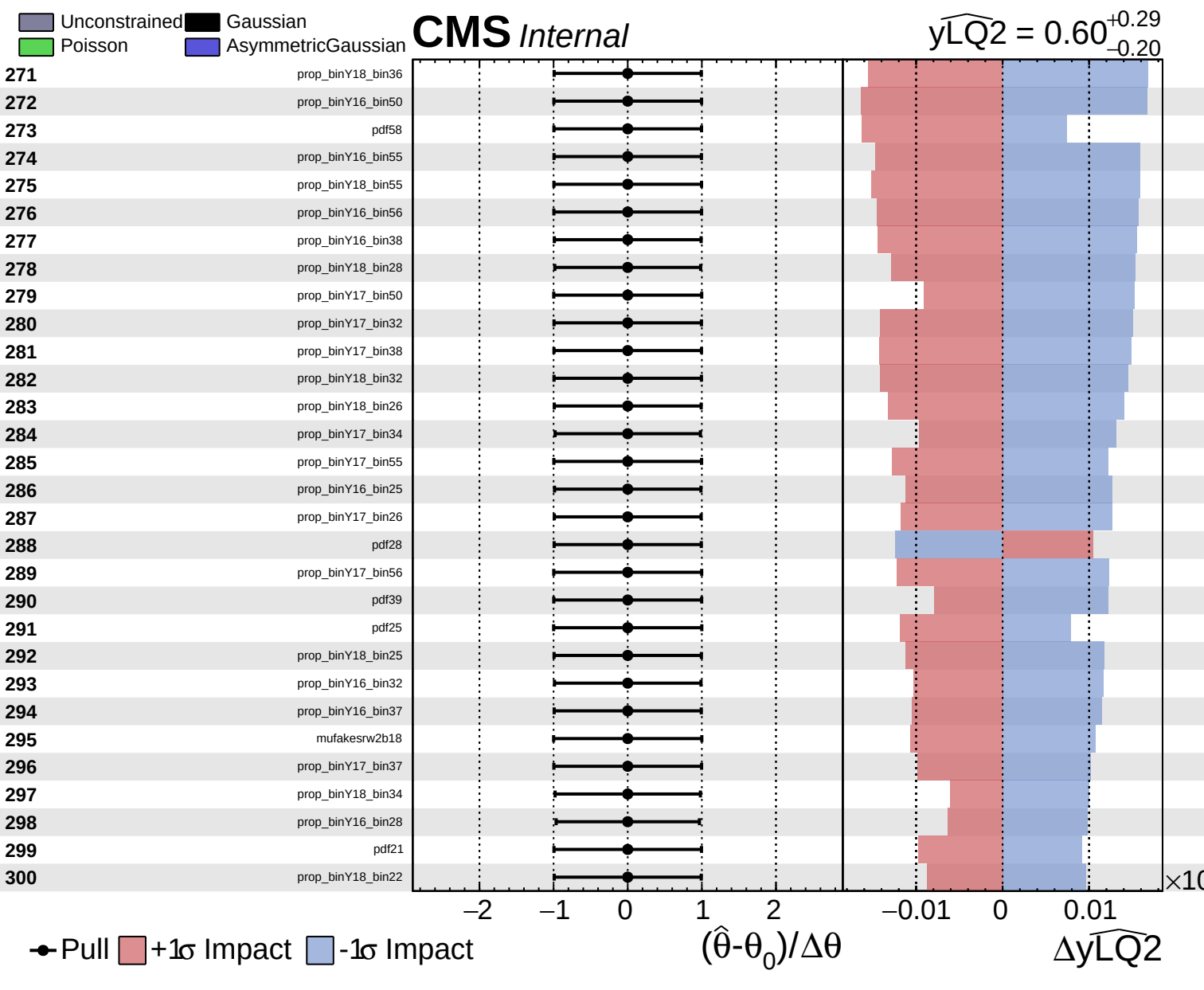

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
$\widehat{yLQ2} = 0.60^{+0.29}_{-0.20}$
121 prop_binY16_bin19
122 pdf46
123 pdf33
124 muPref1718
125 pdf2
126 prop_binY18_bin2
127 prop_binY18_bin40
128 prop_binY17_bin40
129 prop_binY16_bin40
130 prop_binY16_bin59
131 muHLTBAR16
132 pdf8
133 prop_binY17_bin53
134 prop_binY18_bin5
135 pdf47
136 prop_binY18_bin46
137 prop_binY18_bin59
138 muHLTEND16
139 prop_binY16_bin46
140 muISOBAR18
141 prop_binY16_bin4
142 prop_binY18_bin17
143 prop_binY16_bin13
144 prop_binY16_bin51
145 pdf15
146 muFakes18
147 pdf11
148 prop_binY16_bin3
149 prop_binY17_bin18
150 pdf41
−2 −1 0 1 2
−0.1 −0.05 0 0.05 0.1
×10
Pull
+1σ Impact
-1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\widehat{yLQ2}$

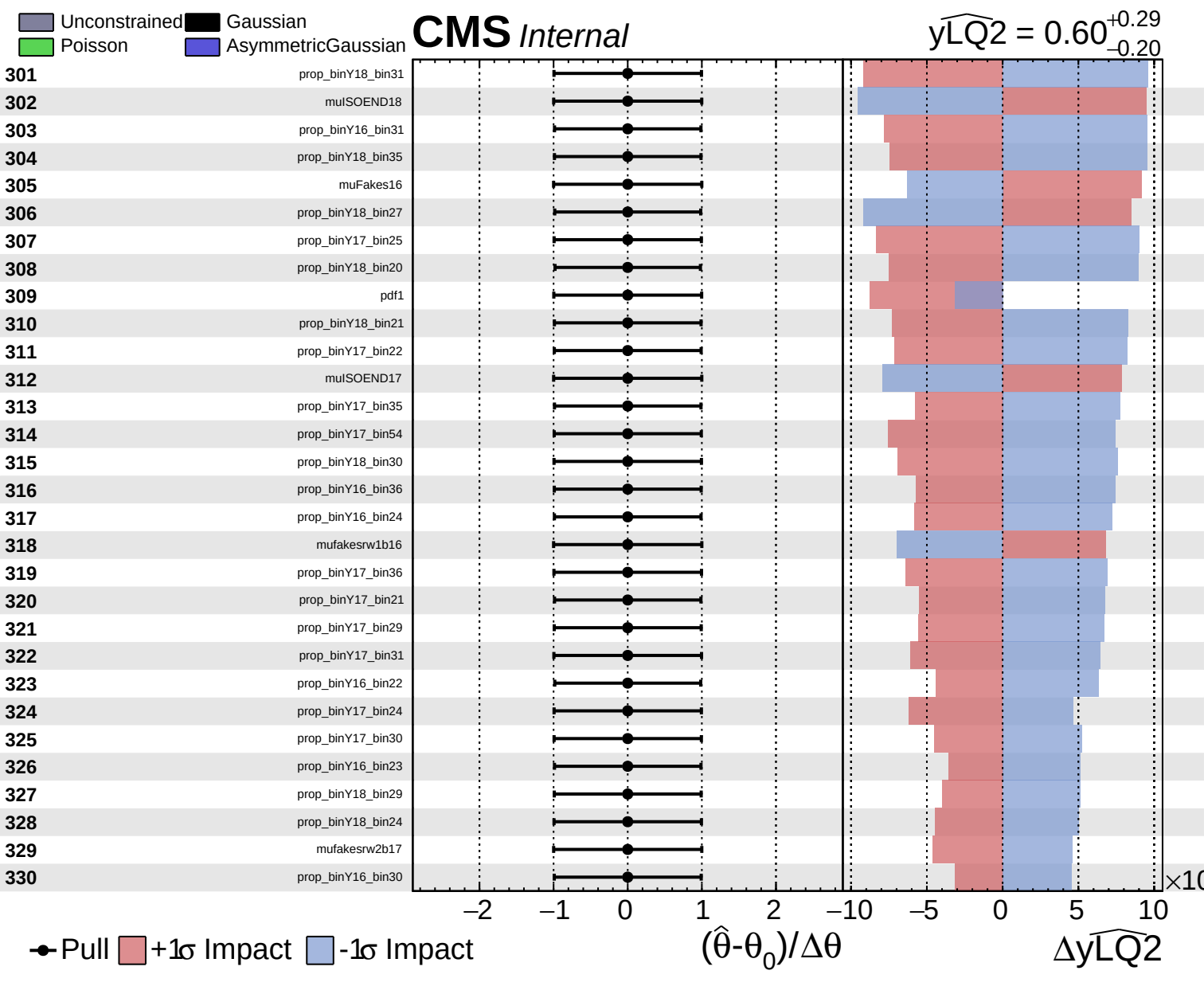

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
yLQ2 = 0.60 +0.29 −0.20
151 pdf23
152 prop_binY18_bin12
153 emucostrw4b1718
154 pdf16
155 emucostrw3b1718
156 prop_binY16_bin52
157 pdf6
158 prop_binY16_bin41
159 muISOBAR17
160 muPref16
161 prop_binY16_bin5
162 pdf29
163 prop_binY18_bin9
164 prop_binY17_bin17
165 prop_binY18_bin41
166 prop_binY16_bin12
167 prop_binY18_bin18
168 prop_binY18_bin10
169 prop_binY16_bin0
170 pdf52
171 pdf9
172 muHLTBAR17
173 pdf40
174 pdf50
175 prop_binY18_bin11
176 prop_binY18_bin48
177 pdf45
178 muHLTEND17
179 prop_binY17_bin16
180 prop_binY17_bin0
−2
−1
0
1
2
−0.05
0
0.05
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔyLQ2

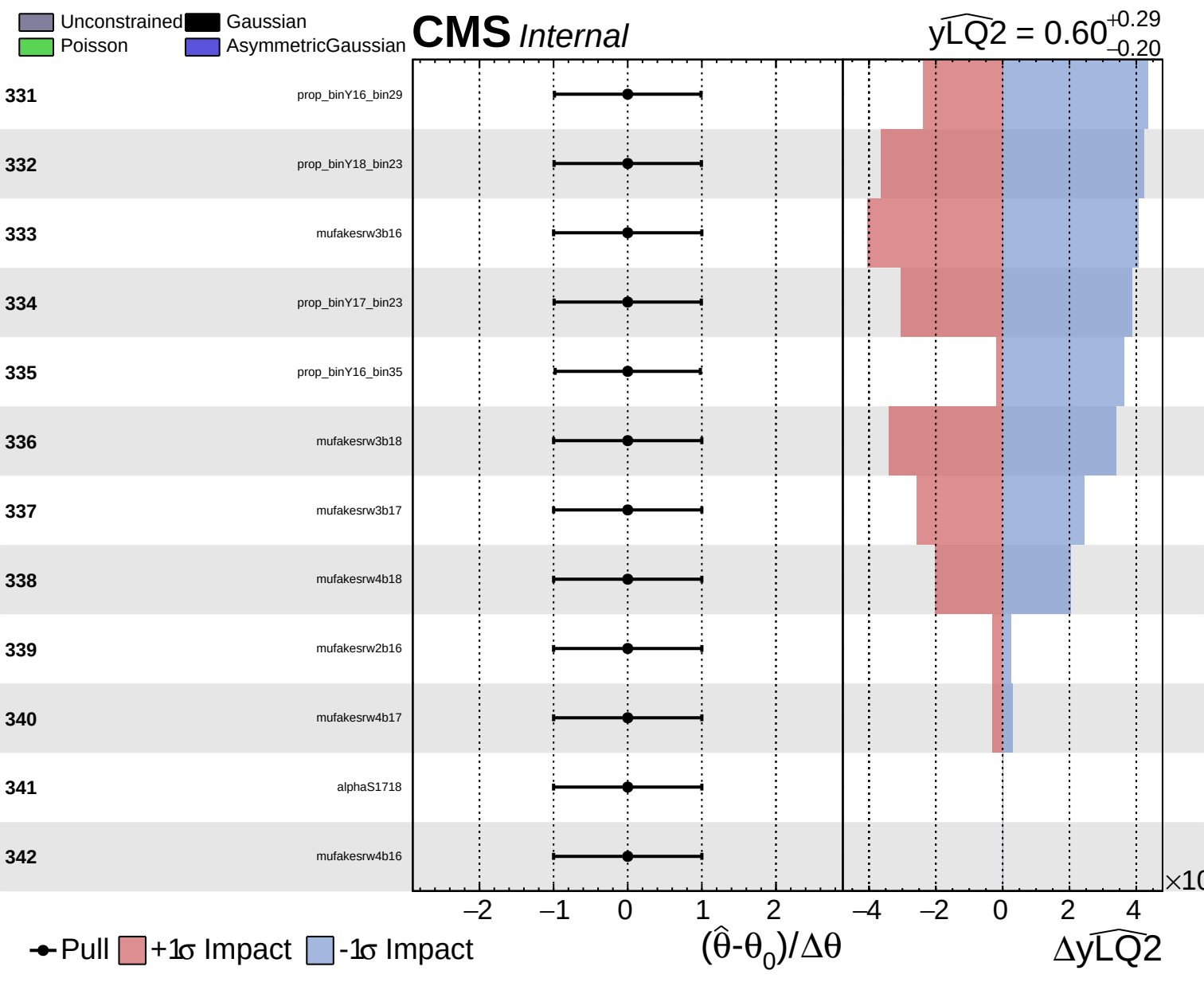

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
$\widehat{yLQ2} = 0.60^{+0.29}_{-0.20}$
181 prop_binY17_bin3
182 pdf18
183 prop_binY16_bin7
184 pdf56
185 prop_binY17_bin2
186 pdf32
187 prop_binY17_bin19
188 muIDEND18
189 prop_binY16_bin45
190 prop_binY18_bin3
191 prop_binY17_bin4
192 prop_binY18_bin4
193 prop_binY17_bin46
194 prop_binY18_bin45
195 pdf36
196 prop_binY17_bin5
197 prop_binY16_bin58
198 prop_binY17_bin59
199 prop_binY17_bin27
200 pdf5
201 pdf37
202 prop_binY16_bin48
203 pdf3
204 pdf20
205 prop_binY18_bin42
206 prop_binY16_bin9
207 prop_binY17_bin15
208 prop_binY17_bin20
209 muISOEND16
210 prop_binY17_bin9
×10
−2
−1
0
1
2
−0.05
0
0.05
Pull
+1σ Impact
-1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\widehat{yLQ2}$


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 0.60 +0.29 −0.20
211 prop_binY17_bin41
212 prop_binY16_bin42
213 pdf54
214 pdf48
215 gam_xsec
216 prop_binY16_bin44
217 prop_binY18_bin58
218 pdf38
219 prop_binY18_bin52
220 pdf53
221 prop_binY17_bin33
222 prop_binY18_bin33
223 pdf14
224 prop_binY16_bin43
225 prop_binY18_bin54
226 prop_binY17_bin45
227 prop_binY17_bin48
228 emucostrw3b16
229 mufakesrw1b18
230 pdf27
231 prop_binY16_bin54
232 prop_binY17_bin12
233 prop_binY17_bin10
234 prop_binY18_bin39
235 prop_binY18_bin44
236 prop_binY17_bin39
237 prop_binY17_bin58
238 prop_binY18_bin43
239 prop_binY17_bin11
240 pdf7
−2 −1 0 1 2
−0.04 −0.02 0 0.02 0.04
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 0.60 +0.29 −0.20
241 pdf26
242 prop_binY17_bin42
243 prop_binY16_bin39
244 mulSOSYS
245 prop_binY16_bin33
246 emucostrw4b16
247 prop_binY17_bin52
248 prop_binY18_bin57
249 prop_binY16_bin26
250 prop_binY18_bin51
251 prop_binY18_bin49
252 pdf49
253 prop_binY17_bin44
254 prop_binY16_bin27
255 prop_binY17_bin28
256 pdf55
257 prop_binY16_bin57
258 prop_binY16_bin21
259 prop_binY18_bin38
260 prop_binY18_bin50
261 prop_binY18_bin56
262 pdf10
263 prop_binY18_bin37
264 prop_binY17_bin43
265 prop_binY16_bin20
266 prop_binY17_bin49
267 prop_binY17_bin57
268 prop_binY16_bin49
269 prop_binY17_bin51
270 pdf59
×10
−2
−1
0
1
2
−0.02
0
0.02
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 0.60 +0.29 −0.20
271 prop_binY18_bin36
272 prop_binY16_bin50
273 pdf58
274 prop_binY16_bin55
275 prop_binY18_bin55
276 prop_binY16_bin56
277 prop_binY16_bin38
278 prop_binY18_bin28
279 prop_binY17_bin50
280 prop_binY17_bin32
281 prop_binY17_bin38
282 prop_binY18_bin32
283 prop_binY18_bin26
284 prop_binY17_bin34
285 prop_binY17_bin55
286 prop_binY16_bin25
287 prop_binY17_bin26
288 pdf28
289 prop_binY17_bin56
290 pdf39
291 pdf25
292 prop_binY18_bin25
293 prop_binY16_bin32
294 prop_binY16_bin37
295 mufakesrw2b18
296 prop_binY17_bin37
297 prop_binY18_bin34
298 prop_binY16_bin28
299 pdf21
300 prop_binY18_bin22
−2 −1 0 1 2
−0.01 0 0.01
×10
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 0.60 +0.29 −0.20
301 prop_binY18_bin31
302 muISOEND18
303 prop_binY16_bin31
304 prop_binY18_bin35
305 muFakes16
306 prop_binY18_bin27
307 prop_binY17_bin25
308 prop_binY18_bin20
309 pdf1
310 prop_binY18_bin21
311 prop_binY17_bin22
312 muISOEND17
313 prop_binY17_bin35
314 prop_binY17_bin54
315 prop_binY18_bin30
316 prop_binY16_bin36
317 prop_binY16_bin24
318 mufakesrw1b16
319 prop_binY17_bin36
320 prop_binY17_bin21
321 prop_binY17_bin29
322 prop_binY17_bin31
323 prop_binY16_bin22
324 prop_binY17_bin24
325 prop_binY17_bin30
326 prop_binY16_bin23
327 prop_binY18_bin29
328 prop_binY18_bin24
329 mufakesrw2b17
330 prop_binY16_bin30
−2 −1 0 1 2
−10 −5 0 5 10
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
$\widehat{yLQ2} = 0.60^{+0.29}_{-0.20}$
331 prop_binY16_bin29
332 prop_binY18_bin23
333 mufakesrw3b16
334 prop_binY17_bin23
335 prop_binY16_bin35
336 mufakesrw3b18
337 mufakesrw3b17
338 mufakesrw4b18
339 mufakesrw2b16
340 mufakesrw4b17
341 alphaS1718
342 mufakesrw4b16
−2 −1 0 1 2
−4 −2 0 2 4
×10
Pull
+1σ Impact
-1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\widehat{yLQ2}$