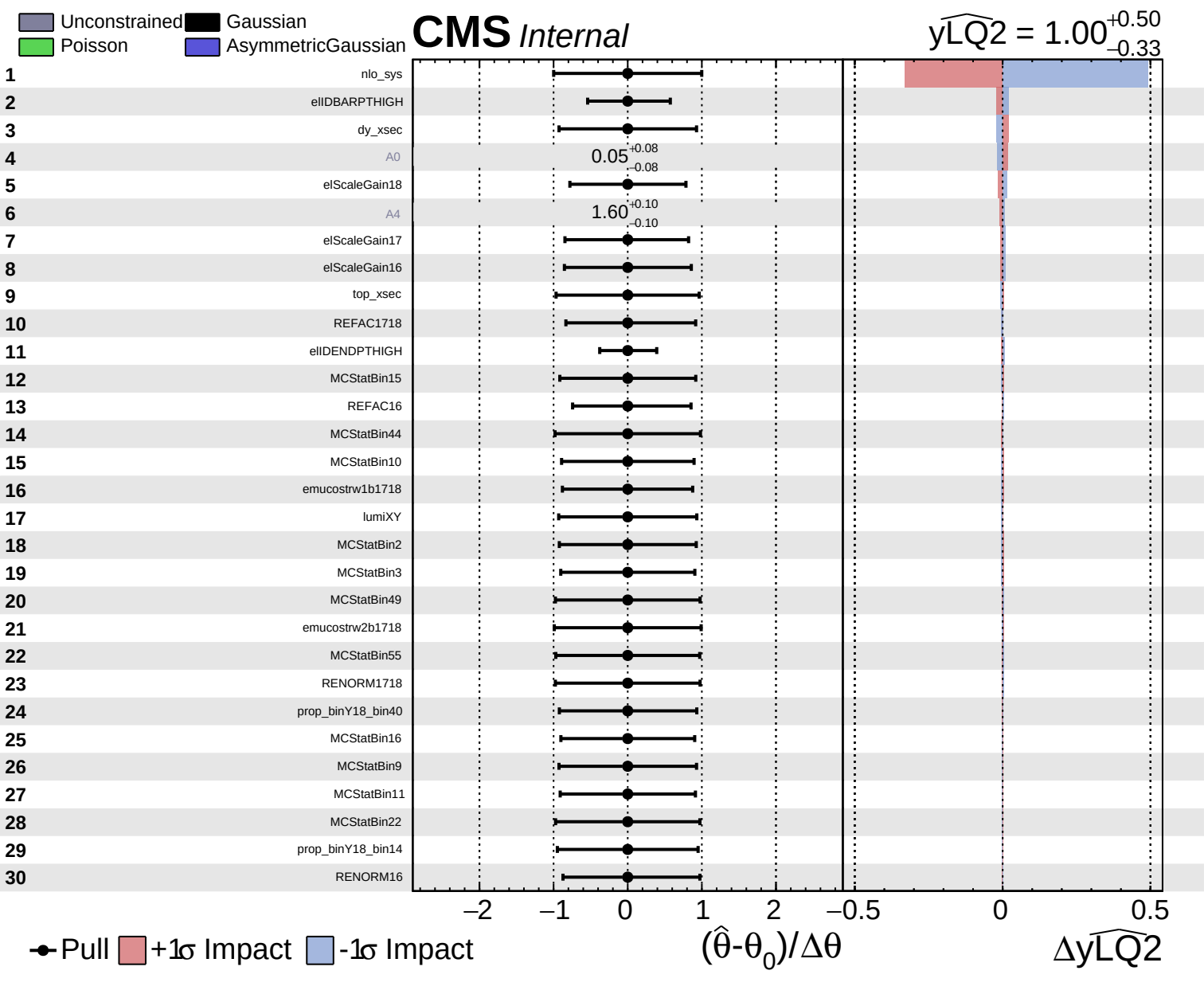
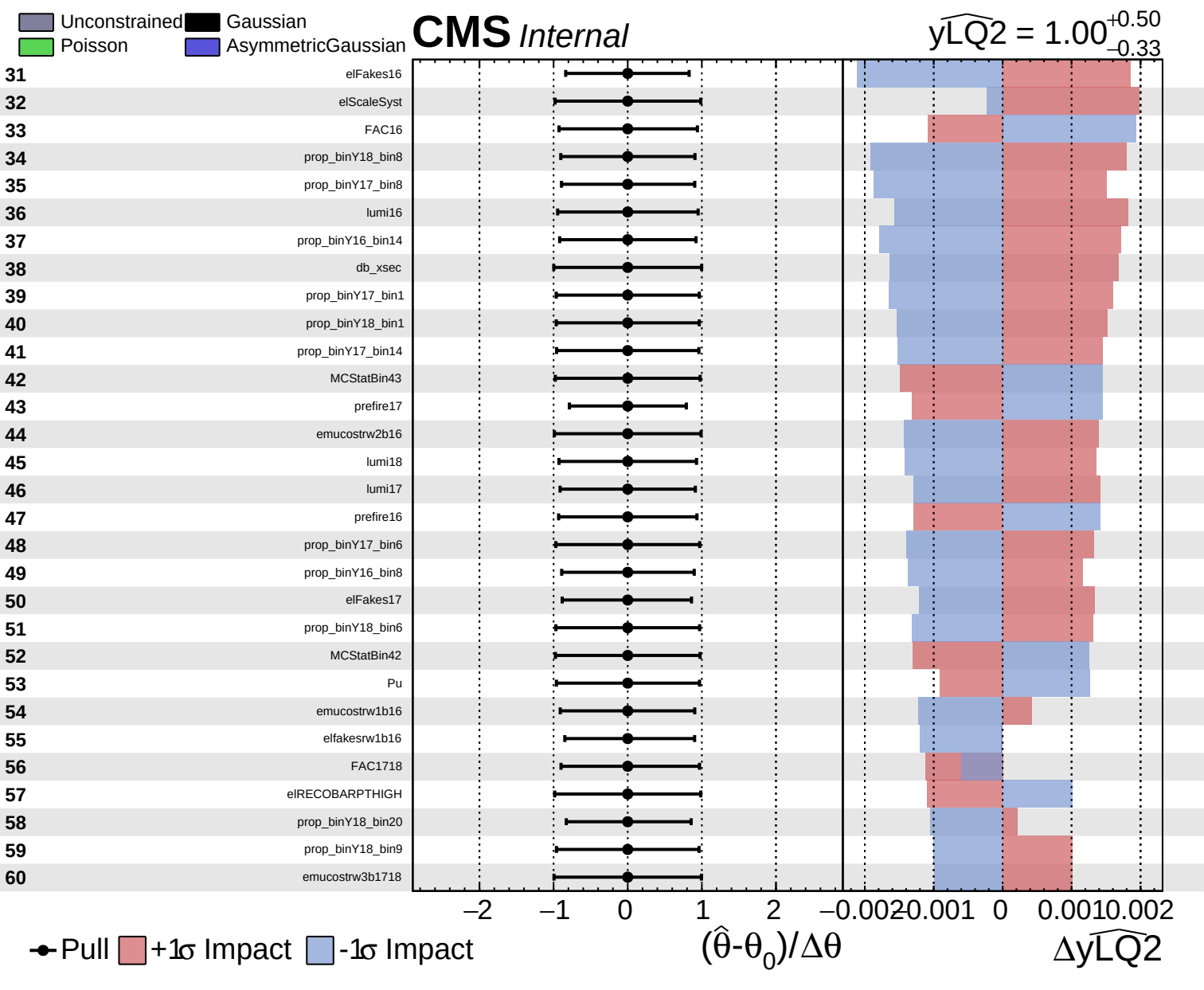
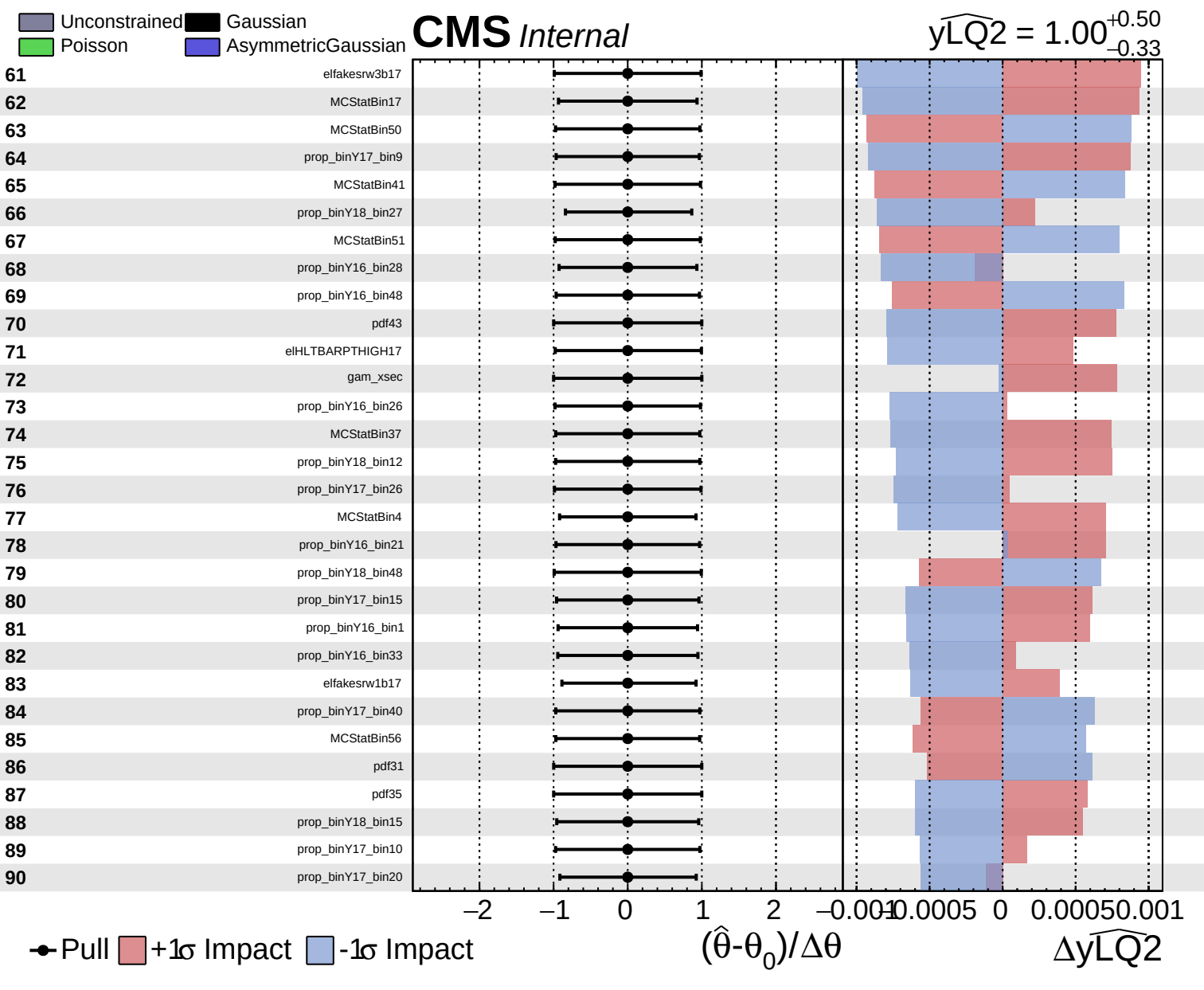
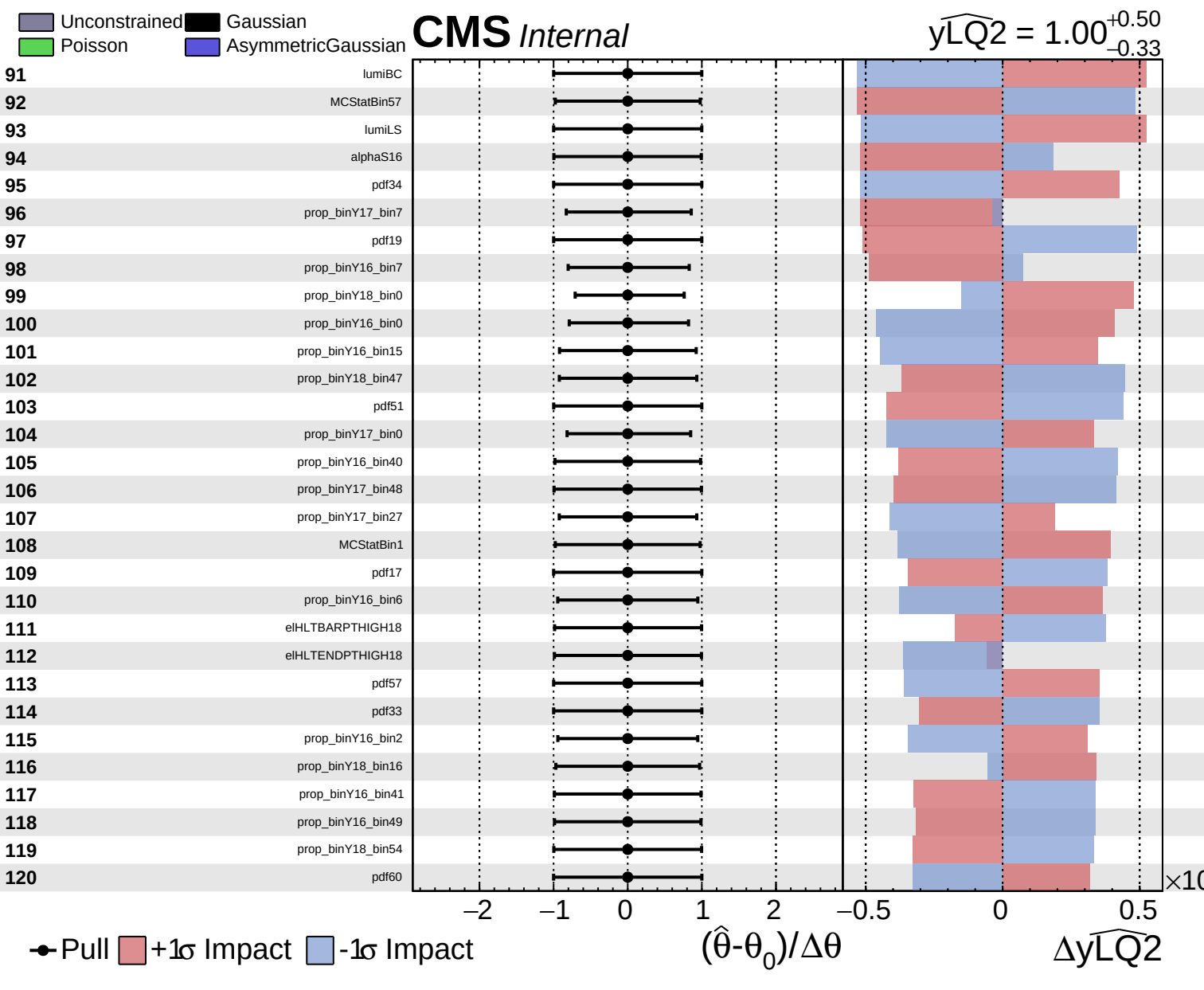
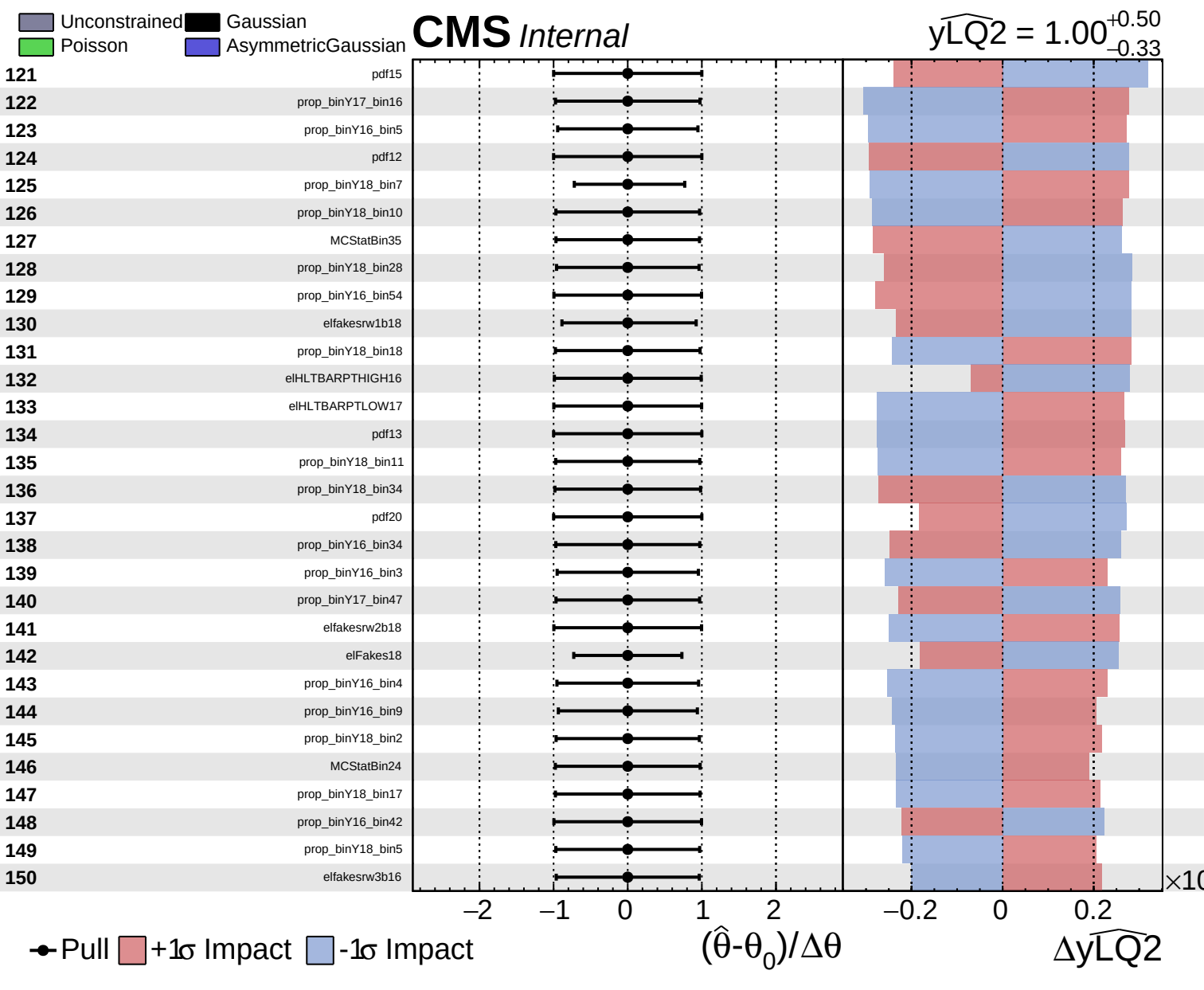
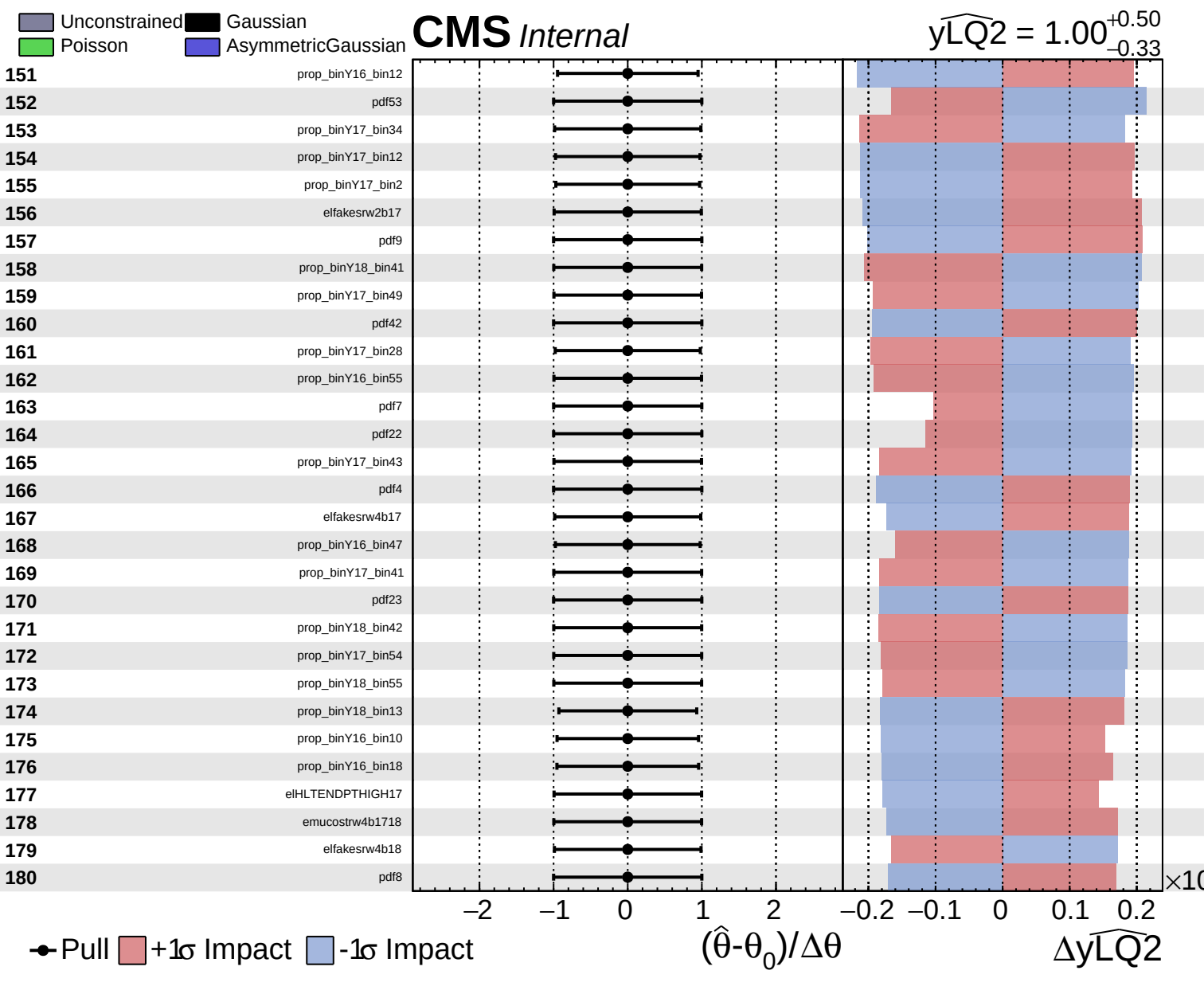

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
$\widehat{yLQ2} = 1.00^{+0.50}_{-0.33}$
1 nlo_sys
2 elIDBARPTHIGH
3 dy_xsec
4 A0
$0.05^{+0.08}_{-0.08}$
5 elScaleGain18
6 A4
$1.60^{+0.10}_{-0.10}$
7 elScaleGain17
8 elScaleGain16
9 top_xsec
10 REFAC1718
11 elIDENDPTHIGH
12 MCStatBin15
13 REFAC16
14 MCStatBin44
15 MCStatBin10
16 emucostrw1b1718
17 lumiXY
18 MCStatBin2
19 MCStatBin3
20 MCStatBin49
21 emucostrw2b1718
22 MCStatBin55
23 RENORM1718
24 prop_binY18_bin40
25 MCStatBin16
26 MCStatBin9
27 MCStatBin11
28 MCStatBin22
29 prop_binY18_bin14
30 RENORM16
−2 −1 0 1 2
−0.5 0 0.5
Pull
+1σ Impact
-1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\widehat{yLQ2}$

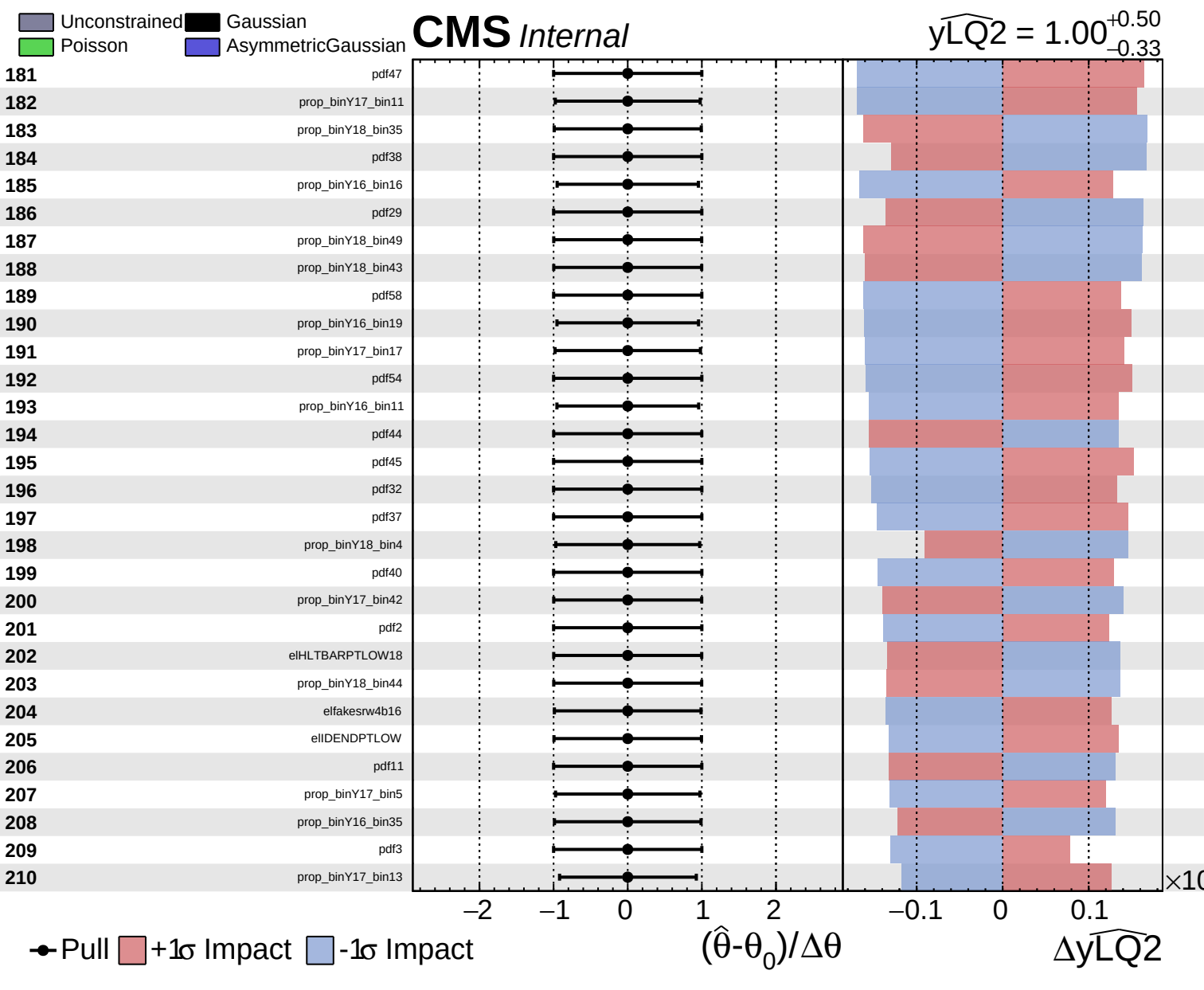

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
31 elFakes16
32 elScaleSyst
33 FAC16
34 prop_binY18_bin8
35 prop_binY17_bin8
36 lumi16
37 prop_binY16_bin14
38 db_xsec
39 prop_binY17_bin1
40 prop_binY18_bin1
41 prop_binY17_bin14
42 MCStatBin43
43 prefire17
44 emucostrw2b16
45 lumi18
46 lumi17
47 prefire16
48 prop_binY17_bin6
49 prop_binY16_bin8
50 elFakes17
51 prop_binY18_bin6
52 MCStatBin42
53 Pu
54 emucostrw1b16
55 elfakesrw1b16
56 FAC1718
57 elRECOBARPTHIGH
58 prop_binY18_bin20
59 prop_binY18_bin9
60 emucostrw3b1718
−2 −1 0 1 2
−0.002 −0.001 0 0.001 0.002
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

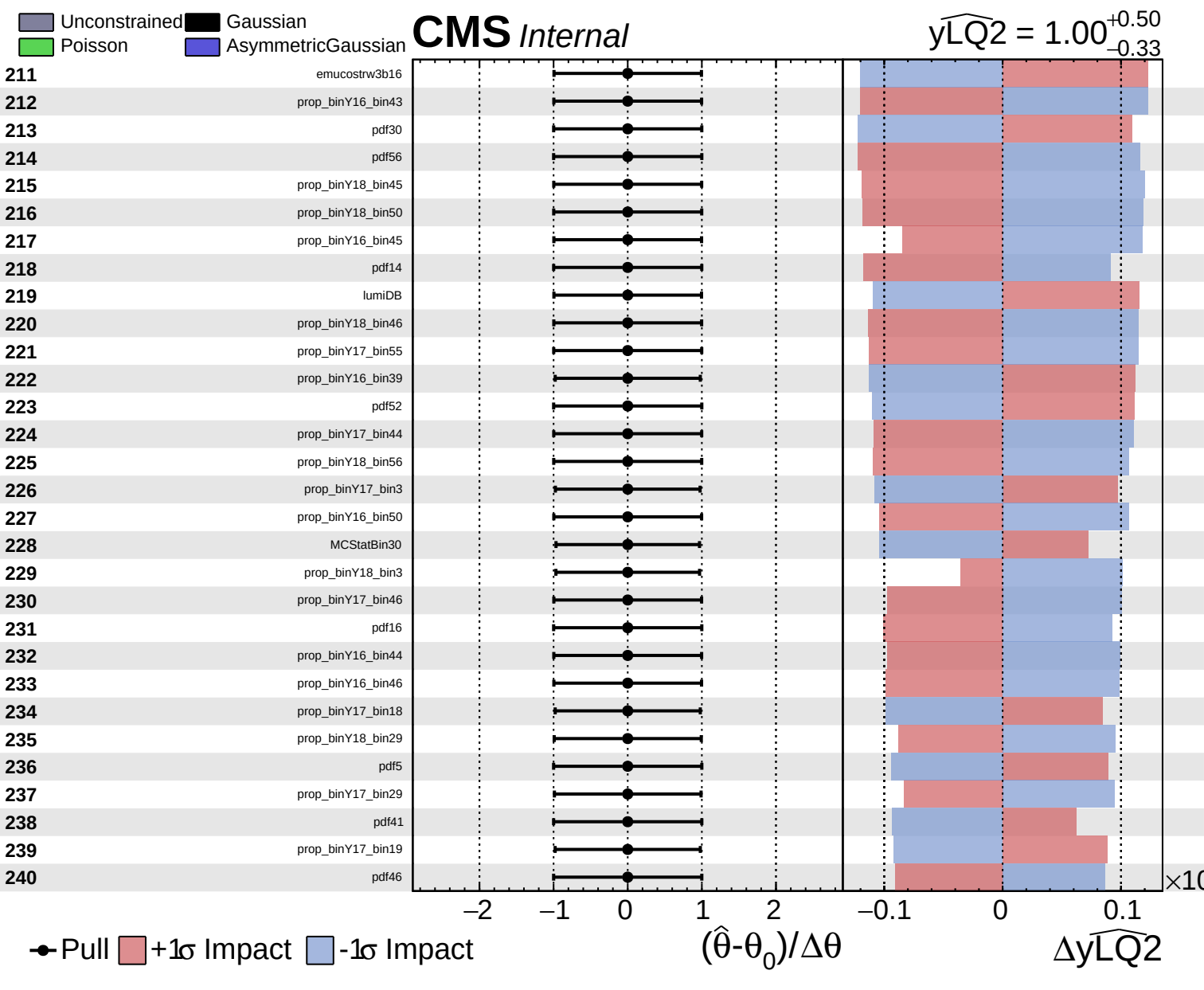

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
61 elfakesrw3b17
62 MCStatBin17
63 MCStatBin50
64 prop_binY17_bin9
65 MCStatBin41
66 prop_binY18_bin27
67 MCStatBin51
68 prop_binY16_bin28
69 prop_binY16_bin48
70 pdf43
71 elHLTBARPTHIGH17
72 gam_xsec
73 prop_binY16_bin26
74 MCStatBin37
75 prop_binY18_bin12
76 prop_binY17_bin26
77 MCStatBin4
78 prop_binY16_bin21
79 prop_binY18_bin48
80 prop_binY17_bin15
81 prop_binY16_bin1
82 prop_binY16_bin33
83 elfakesrw1b17
84 prop_binY17_bin40
85 MCStatBin56
86 pdf31
87 pdf35
88 prop_binY18_bin15
89 prop_binY17_bin10
90 prop_binY17_bin20
−2 −1 0 1 2
−0.001 −0.0005 0 0.0005 0.001
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

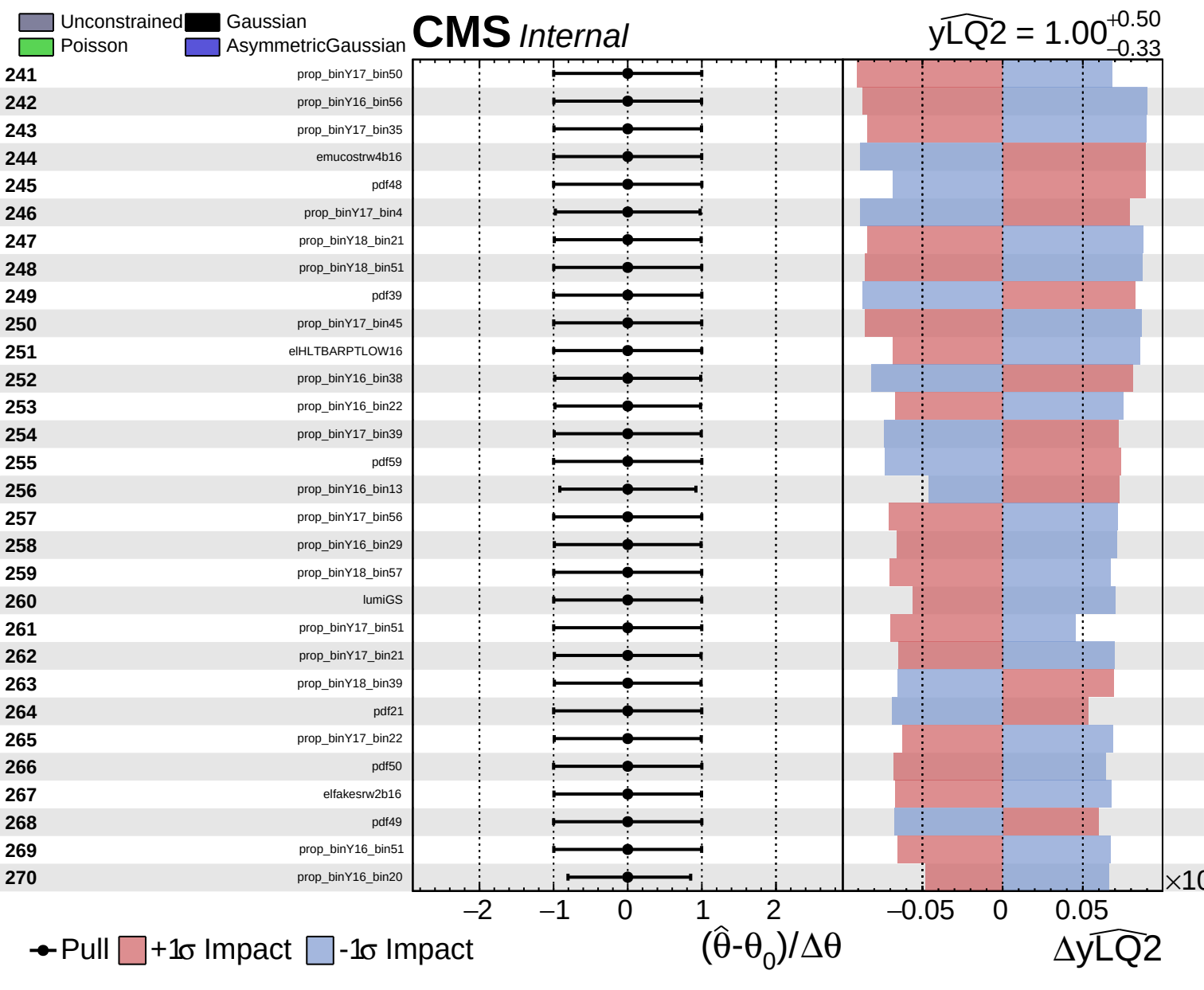

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
91 lumiBC
92 MCStatBin57
93 lumiLS
94 alphaS16
95 pdf34
96 prop_binY17_bin7
97 pdf19
98 prop_binY16_bin7
99 prop_binY18_bin0
100 prop_binY16_bin0
101 prop_binY16_bin15
102 prop_binY18_bin47
103 pdf51
104 prop_binY17_bin0
105 prop_binY16_bin40
106 prop_binY17_bin48
107 prop_binY17_bin27
108 MCStatBin1
109 pdf17
110 prop_binY16_bin6
111 elHLTBARPTHIGH18
112 elHLTENDPTHIGH18
113 pdf57
114 pdf33
115 prop_binY16_bin2
116 prop_binY18_bin16
117 prop_binY16_bin41
118 prop_binY16_bin49
119 prop_binY18_bin54
120 pdf60
×10
−2 −1 0 1 2
−0.5 0 0.5
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

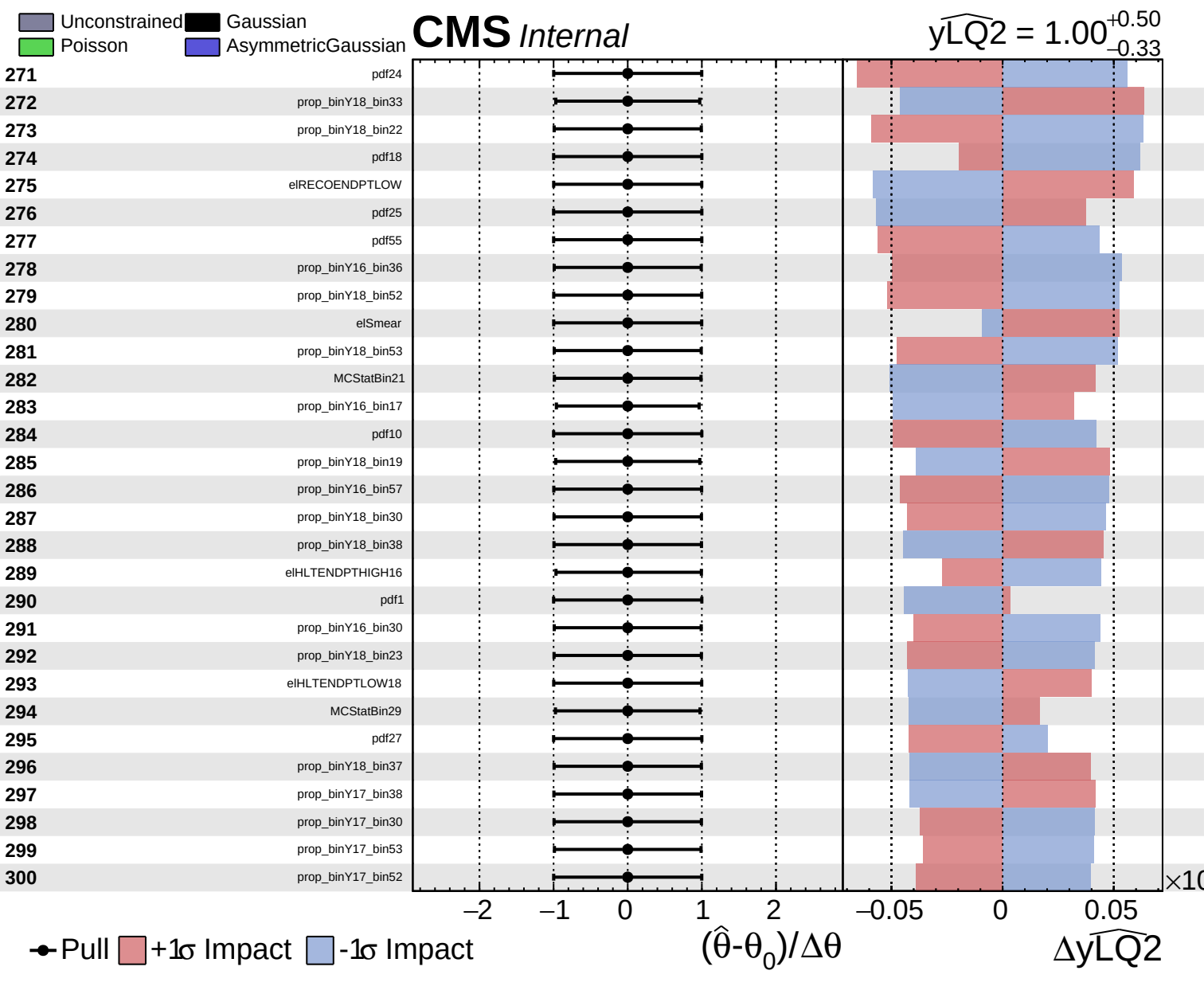

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
121 pdf15
122 prop_binY17_bin16
123 prop_binY16_bin5
124 pdf12
125 prop_binY18_bin7
126 prop_binY18_bin10
127 MCStatBin35
128 prop_binY18_bin28
129 prop_binY16_bin54
130 elfakesrw1b18
131 prop_binY18_bin18
132 elHLTBARPTHIGH16
133 elHLTBARPTLOW17
134 pdf13
135 prop_binY18_bin11
136 prop_binY18_bin34
137 pdf20
138 prop_binY16_bin34
139 prop_binY16_bin3
140 prop_binY17_bin47
141 elfakesrw2b18
142 elFakes18
143 prop_binY16_bin4
144 prop_binY16_bin9
145 prop_binY18_bin2
146 MCStatBin24
147 prop_binY18_bin17
148 prop_binY16_bin42
149 prop_binY18_bin5
150 elfakesrw3b16
−2
−1
0
1
2
−0.2
0
0.2
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

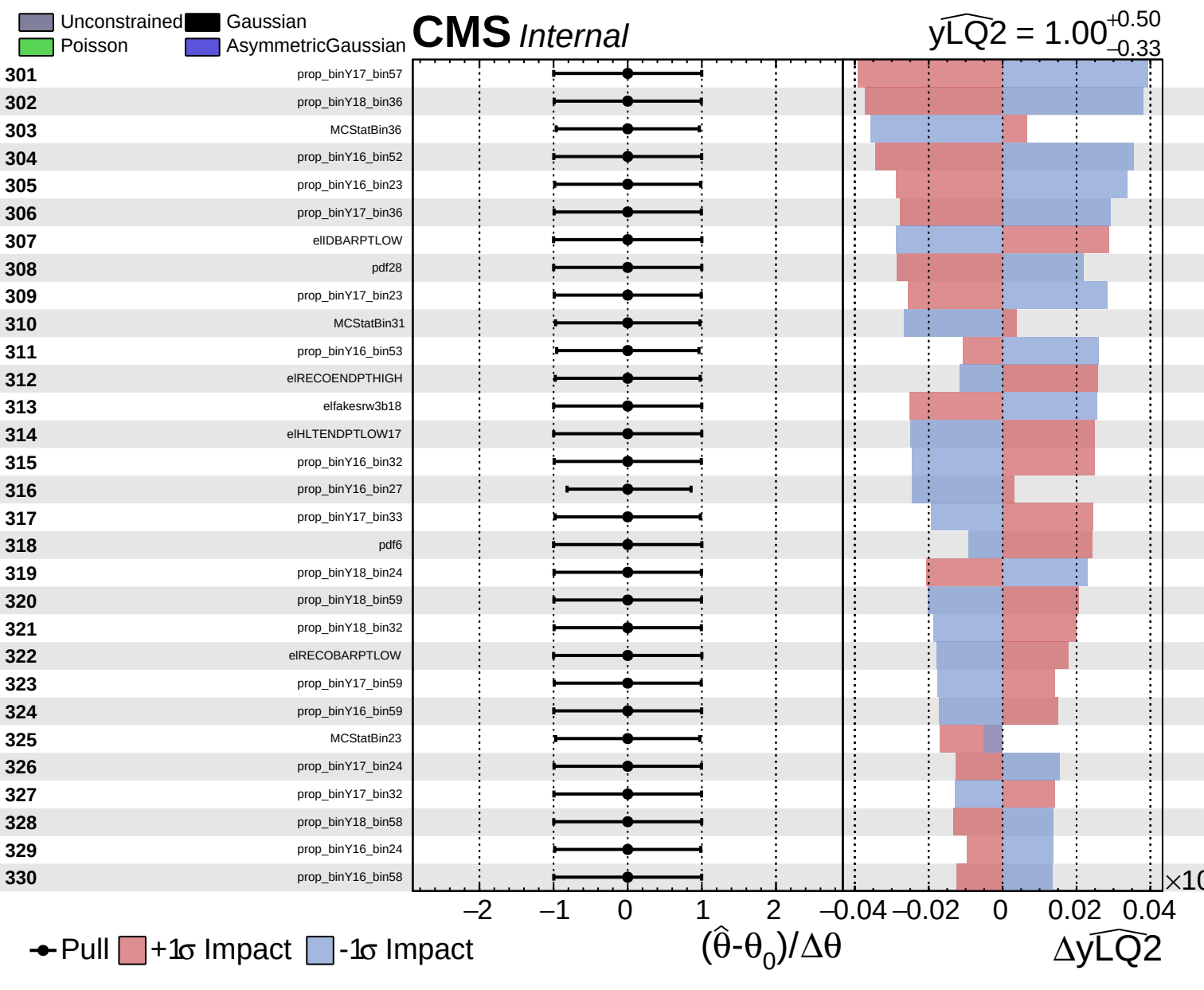

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
151 prop_binY16_bin12
152 pdf53
153 prop_binY17_bin34
154 prop_binY17_bin12
155 prop_binY17_bin2
156 elfakesrw2b17
157 pdf9
158 prop_binY18_bin41
159 prop_binY17_bin49
160 pdf42
161 prop_binY17_bin28
162 prop_binY16_bin55
163 pdf7
164 pdf22
165 prop_binY17_bin43
166 pdf4
167 elfakesrw4b17
168 prop_binY16_bin47
169 prop_binY17_bin41
170 pdf23
171 prop_binY18_bin42
172 prop_binY17_bin54
173 prop_binY18_bin55
174 prop_binY18_bin13
175 prop_binY16_bin10
176 prop_binY16_bin18
177 elHLTENDPTHIGH17
178 emucostrw4b1718
179 elfakesrw4b18
180 pdf8
×10
−2 −1 0 1 2
−0.2 −0.1 0 0.1 0.2
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

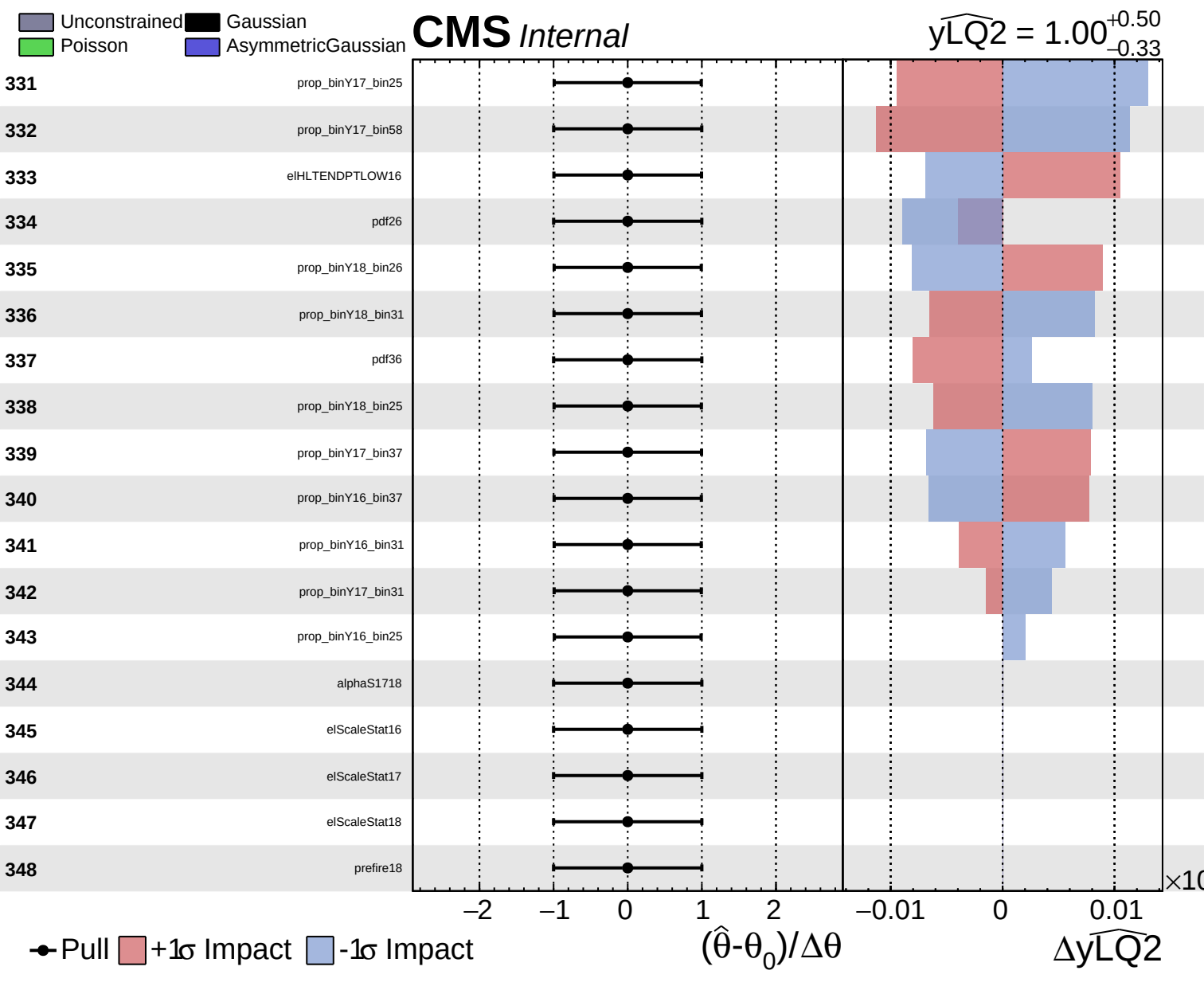

Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
181 pdf47
182 prop_binY17_bin11
183 prop_binY18_bin35
184 pdf38
185 prop_binY16_bin16
186 pdf29
187 prop_binY18_bin49
188 prop_binY18_bin43
189 pdf58
190 prop_binY16_bin19
191 prop_binY17_bin17
192 pdf54
193 prop_binY16_bin11
194 pdf44
195 pdf45
196 pdf32
197 pdf37
198 prop_binY18_bin4
199 pdf40
200 prop_binY17_bin42
201 pdf2
202 elHLTBARPTLOW18
203 prop_binY18_bin44
204 elfakesrw4b16
205 elIDENDPTLOW
206 pdf11
207 prop_binY17_bin5
208 prop_binY16_bin35
209 pdf3
210 prop_binY17_bin13
−2 −1 0 1 2
−0.1 0 0.1
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
211 emucostrw3b16
212 prop_binY16_bin43
213 pdf30
214 pdf56
215 prop_binY18_bin45
216 prop_binY18_bin50
217 prop_binY16_bin45
218 pdf14
219 lumiDB
220 prop_binY18_bin46
221 prop_binY17_bin55
222 prop_binY16_bin39
223 pdf52
224 prop_binY17_bin44
225 prop_binY18_bin56
226 prop_binY17_bin3
227 prop_binY16_bin50
228 MCStatBin30
229 prop_binY18_bin3
230 prop_binY17_bin46
231 pdf16
232 prop_binY16_bin44
233 prop_binY16_bin46
234 prop_binY17_bin18
235 prop_binY18_bin29
236 pdf5
237 prop_binY17_bin29
238 pdf41
239 prop_binY17_bin19
240 pdf46
−2
−1
0
1
2
−0.1
0
0.1
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
241 prop_binY17_bin50
242 prop_binY16_bin56
243 prop_binY17_bin35
244 emucostrw4b16
245 pdf48
246 prop_binY17_bin4
247 prop_binY18_bin21
248 prop_binY18_bin51
249 pdf39
250 prop_binY17_bin45
251 elHLTBARPTLOW16
252 prop_binY16_bin38
253 prop_binY16_bin22
254 prop_binY17_bin39
255 pdf59
256 prop_binY16_bin13
257 prop_binY17_bin56
258 prop_binY16_bin29
259 prop_binY18_bin57
260 lumiGS
261 prop_binY17_bin51
262 prop_binY17_bin21
263 prop_binY18_bin39
264 pdf21
265 prop_binY17_bin22
266 pdf50
267 elfakesrw2b16
268 pdf49
269 prop_binY16_bin51
270 prop_binY16_bin20
×10
−2 −1 0 1 2
−0.05 0 0.05
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
271 pdf24
272 prop_binY18_bin33
273 prop_binY18_bin22
274 pdf18
275 elRECOENDPTLOW
276 pdf25
277 pdf55
278 prop_binY16_bin36
279 prop_binY18_bin52
280 elSmear
281 prop_binY18_bin53
282 MCStatBin21
283 prop_binY16_bin17
284 pdf10
285 prop_binY18_bin19
286 prop_binY16_bin57
287 prop_binY18_bin30
288 prop_binY18_bin38
289 elHLTENDPTHIGH16
290 pdf1
291 prop_binY16_bin30
292 prop_binY18_bin23
293 elHLTENDPTLOW18
294 MCStatBin29
295 pdf27
296 prop_binY18_bin37
297 prop_binY17_bin38
298 prop_binY17_bin30
299 prop_binY17_bin53
300 prop_binY17_bin52
−2
−1
0
1
2
−0.05
0
0.05
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
ŷLQ2 = 1.00 +0.50 −0.33
301 prop_binY17_bin57
302 prop_binY18_bin36
303 MCStatBin36
304 prop_binY16_bin52
305 prop_binY16_bin23
306 prop_binY17_bin36
307 elIDBARPTLOW
308 pdf28
309 prop_binY17_bin23
310 MCStatBin31
311 prop_binY16_bin53
312 elRECOENDPTHIGH
313 elfakesrw3b18
314 elHLTENDPTLOW17
315 prop_binY16_bin32
316 prop_binY16_bin27
317 prop_binY17_bin33
318 pdf6
319 prop_binY18_bin24
320 prop_binY18_bin59
321 prop_binY18_bin32
322 elRECOBARPTLOW
323 prop_binY17_bin59
324 prop_binY16_bin59
325 MCStatBin23
326 prop_binY17_bin24
327 prop_binY17_bin32
328 prop_binY18_bin58
329 prop_binY16_bin24
330 prop_binY16_bin58
−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 = 1.00 +0.50 −0.33
331 prop_binY17_bin25
332 prop_binY17_bin58
333 elHLTENDPTLOW16
334 pdf26
335 prop_binY18_bin26
336 prop_binY18_bin31
337 pdf36
338 prop_binY18_bin25
339 prop_binY17_bin37
340 prop_binY16_bin37
341 prop_binY16_bin31
342 prop_binY17_bin31
343 prop_binY16_bin25
344 alphaS1718
345 elScaleStat16
346 elScaleStat17
347 elScaleStat18
348 prefire18
−2 −1 0 1 2
−0.01 0 0.01
×10
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2