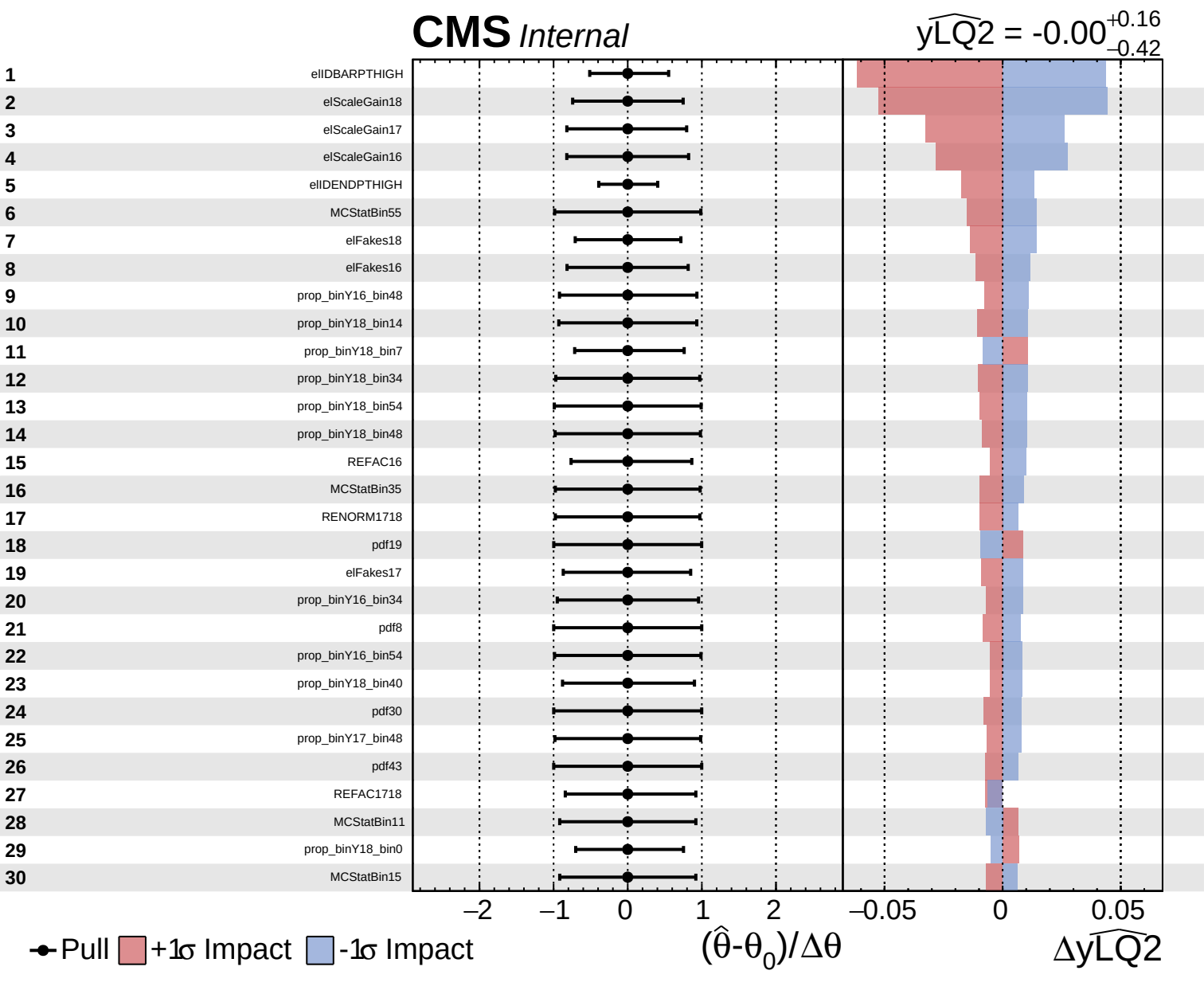
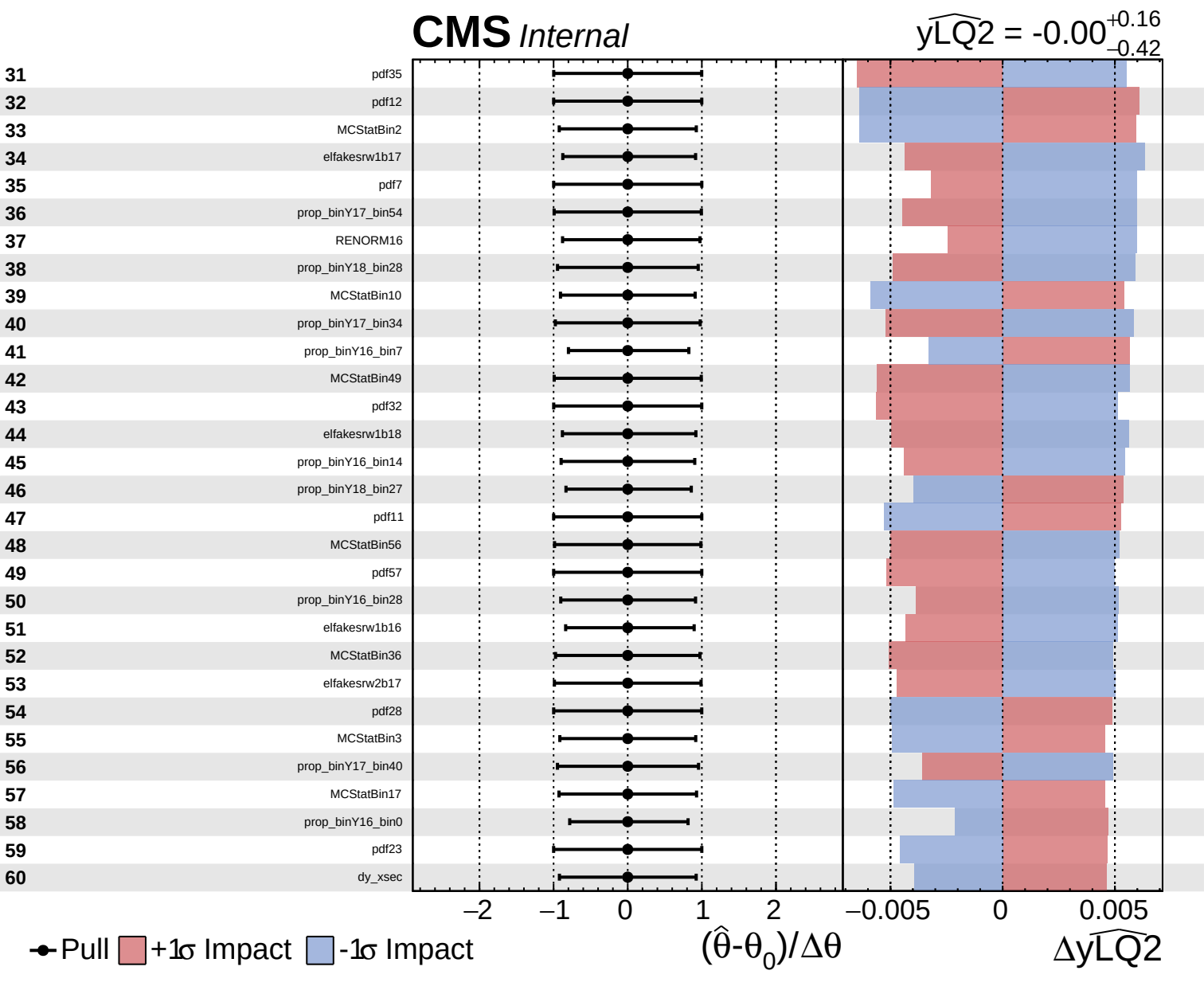
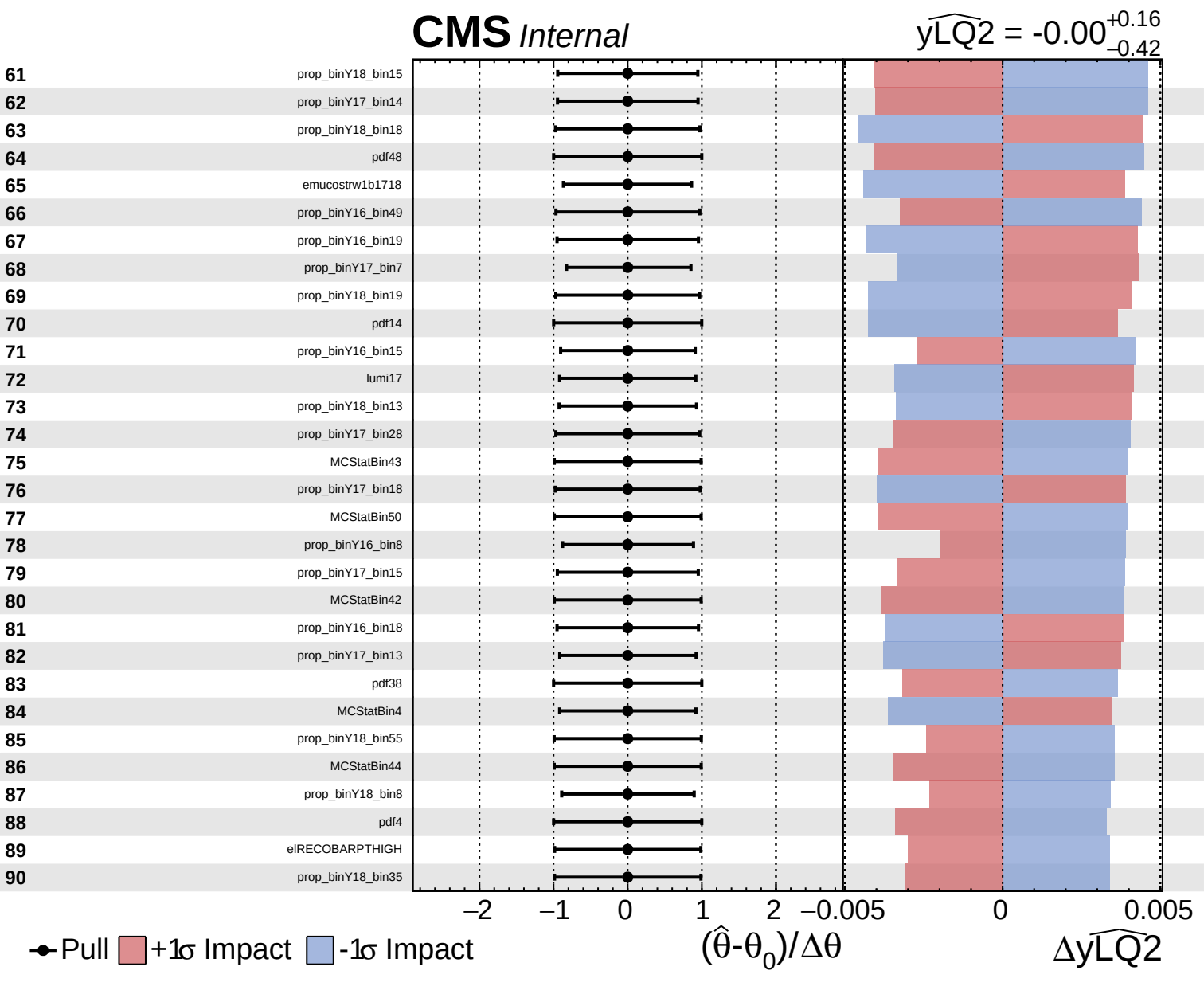
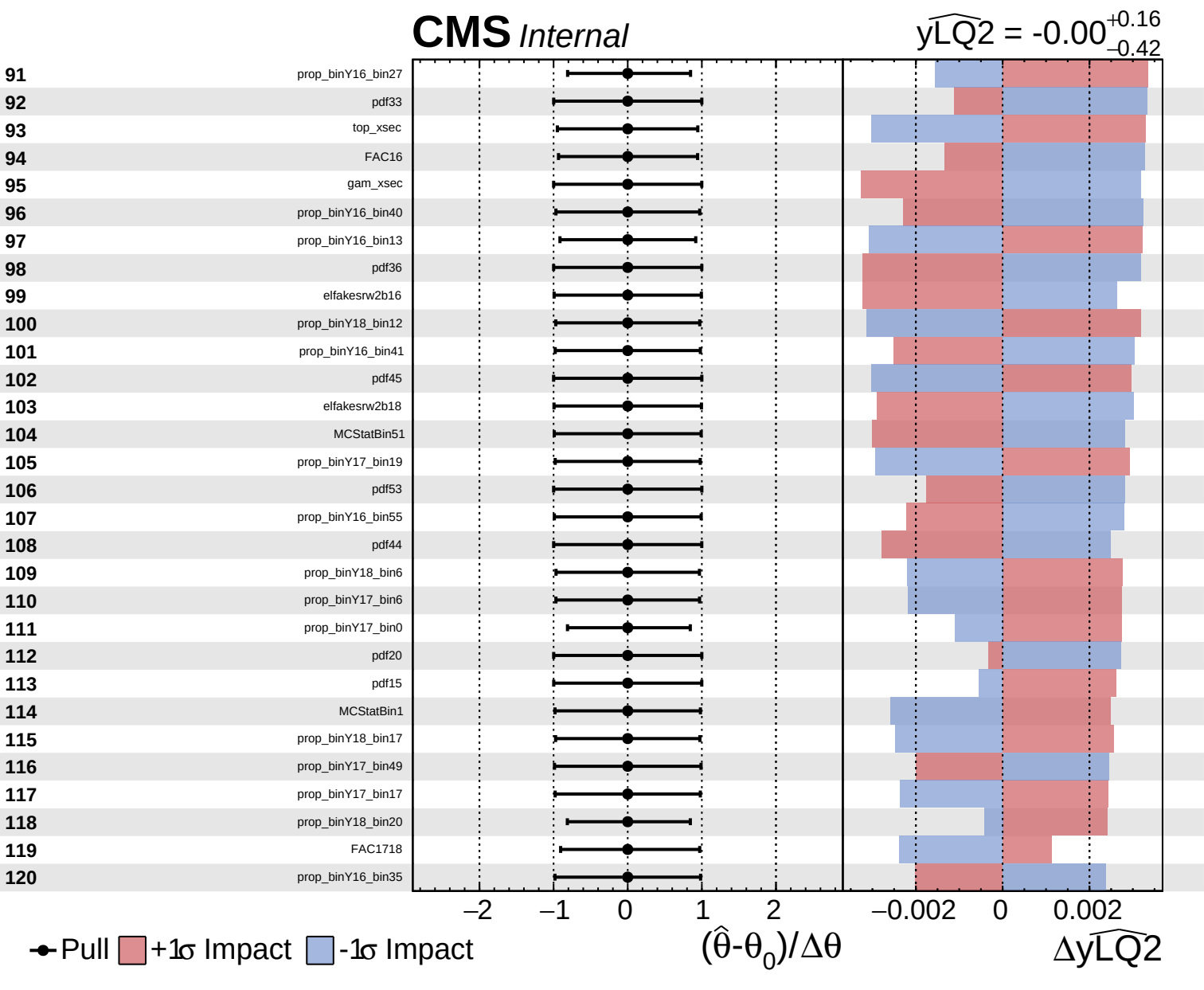
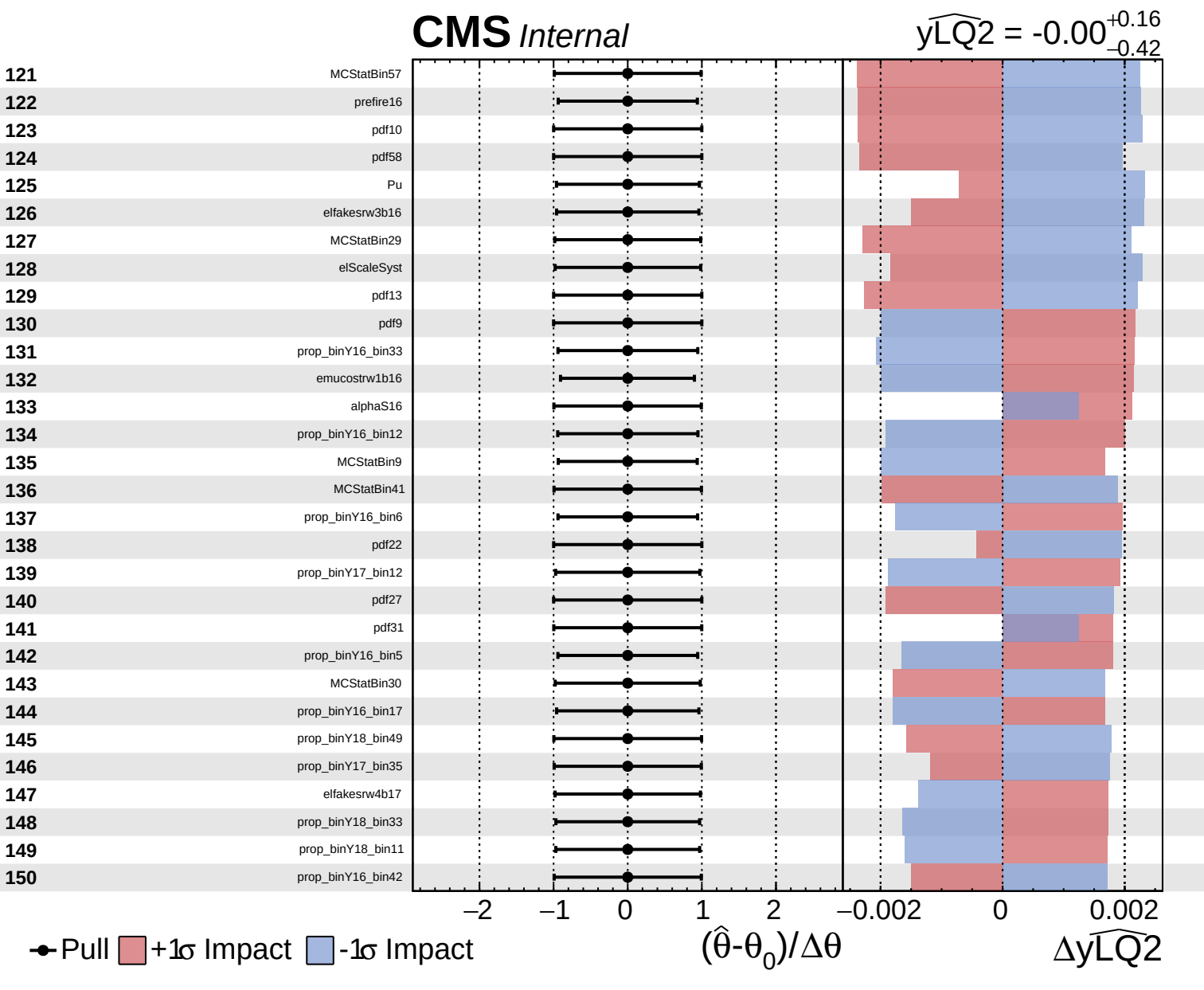
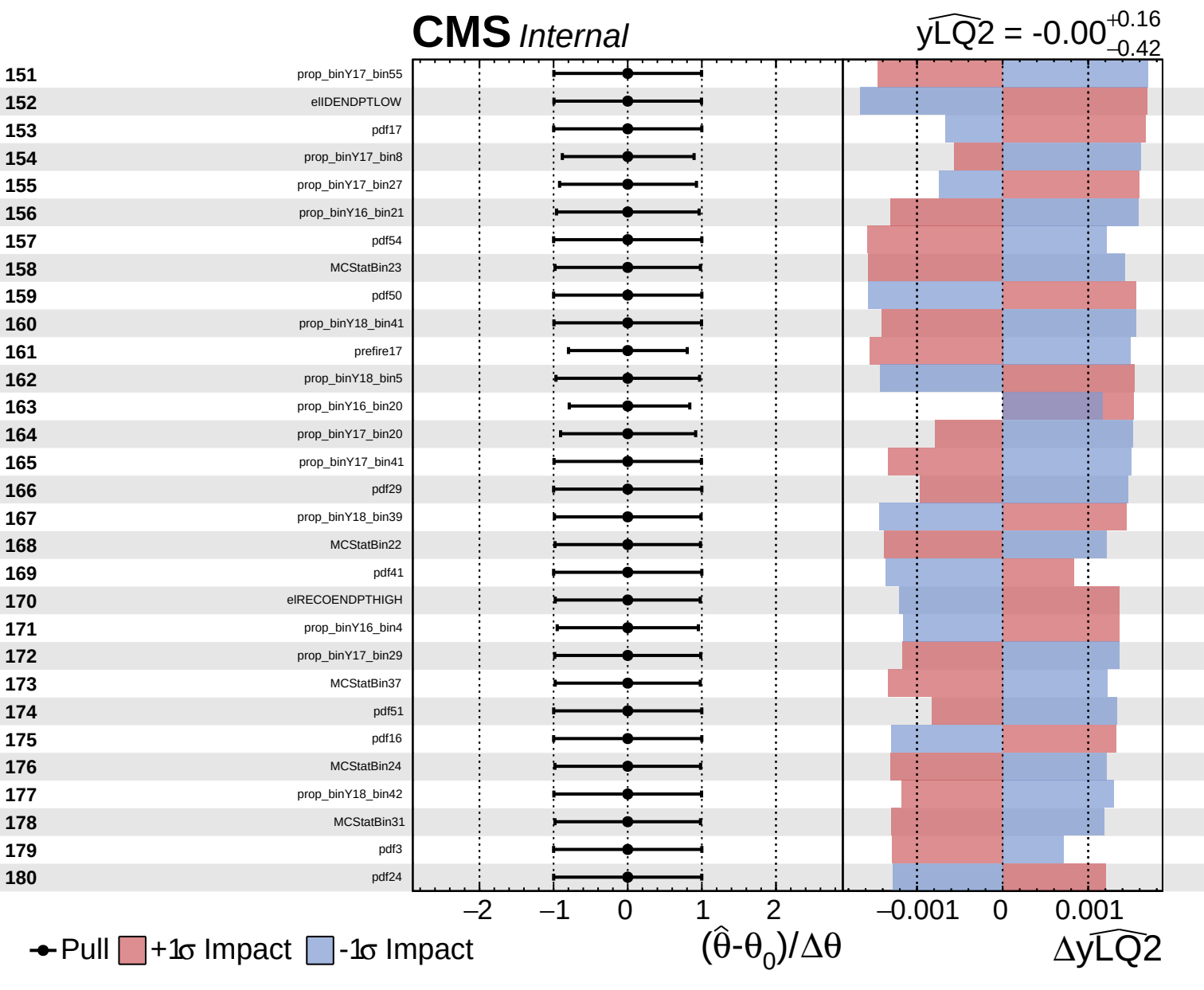

CMS Internal
ŷLQ2 = -0.00 +0.16 −0.42
1 elIDBARPTHIGH
2 elScaleGain18
3 elScaleGain17
4 elScaleGain16
5 elIDENDPTHIGH
6 MCStatBin55
7 elFakes18
8 elFakes16
9 prop_binY16_bin48
10 prop_binY18_bin14
11 prop_binY18_bin7
12 prop_binY18_bin34
13 prop_binY18_bin54
14 prop_binY18_bin48
15 REFAC16
16 MCStatBin35
17 RENORM1718
18 pdf19
19 elFakes17
20 prop_binY16_bin34
21 pdf8
22 prop_binY16_bin54
23 prop_binY18_bin40
24 pdf30
25 prop_binY17_bin48
26 pdf43
27 REFAC1718
28 MCStatBin11
29 prop_binY18_bin0
30 MCStatBin15
−2 −1 0 1 2
−0.05 0 0.05
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

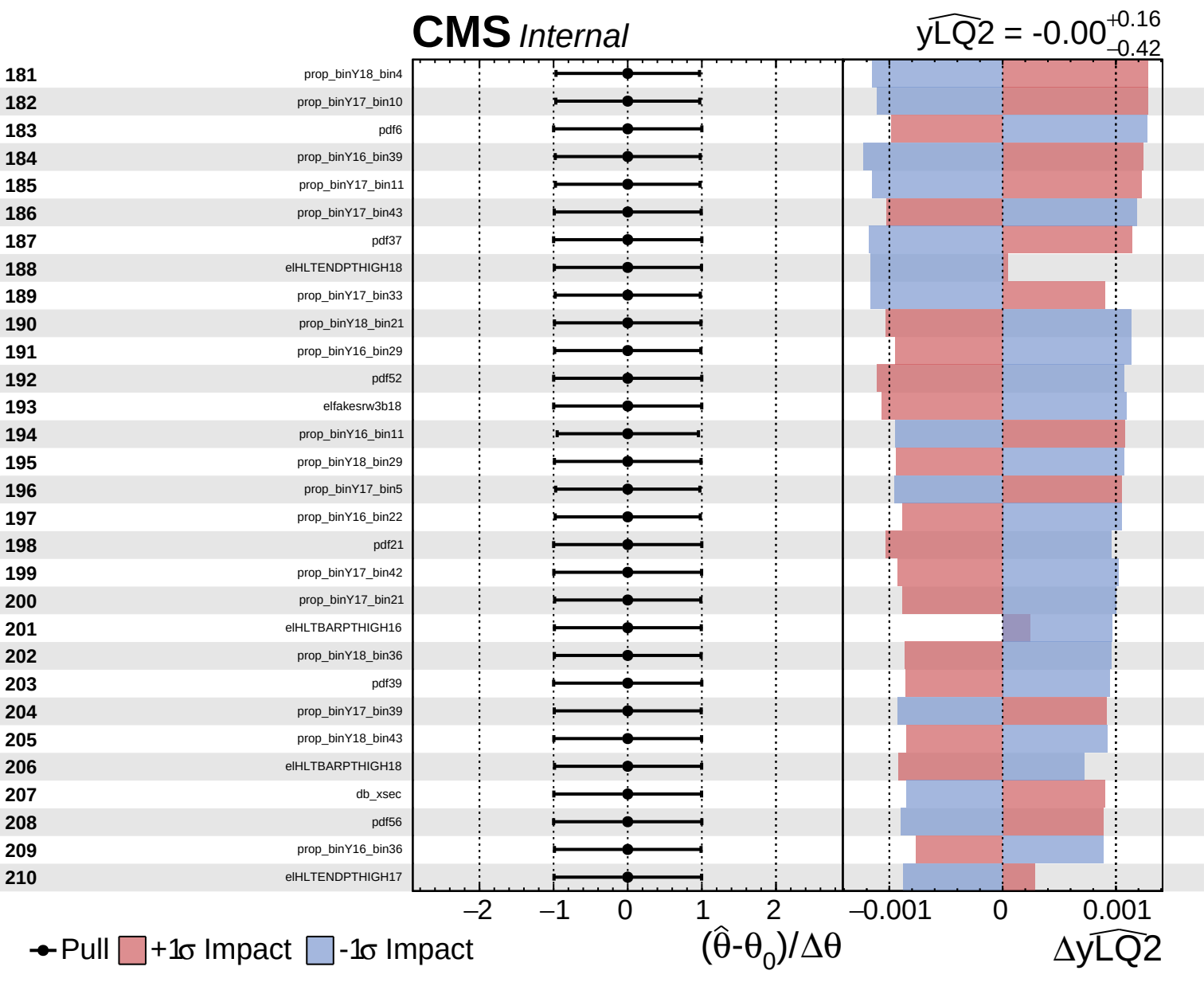

CMS Internal
yLQ2 = -0.00 +0.16 −0.42
31 pdf35
32 pdf12
33 MCStatBin2
34 elfakesrw1b17
35 pdf7
36 prop_binY17_bin54
37 RENORM16
38 prop_binY18_bin28
39 MCStatBin10
40 prop_binY17_bin34
41 prop_binY16_bin7
42 MCStatBin49
43 pdf32
44 elfakesrw1b18
45 prop_binY16_bin14
46 prop_binY18_bin27
47 pdf11
48 MCStatBin56
49 pdf57
50 prop_binY16_bin28
51 elfakesrw1b16
52 MCStatBin36
53 elfakesrw2b17
54 pdf28
55 MCStatBin3
56 prop_binY17_bin40
57 MCStatBin17
58 prop_binY16_bin0
59 pdf23
60 dy_xsec
−2 −1 0 1 2
−0.005 0 0.005
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔyLQ2

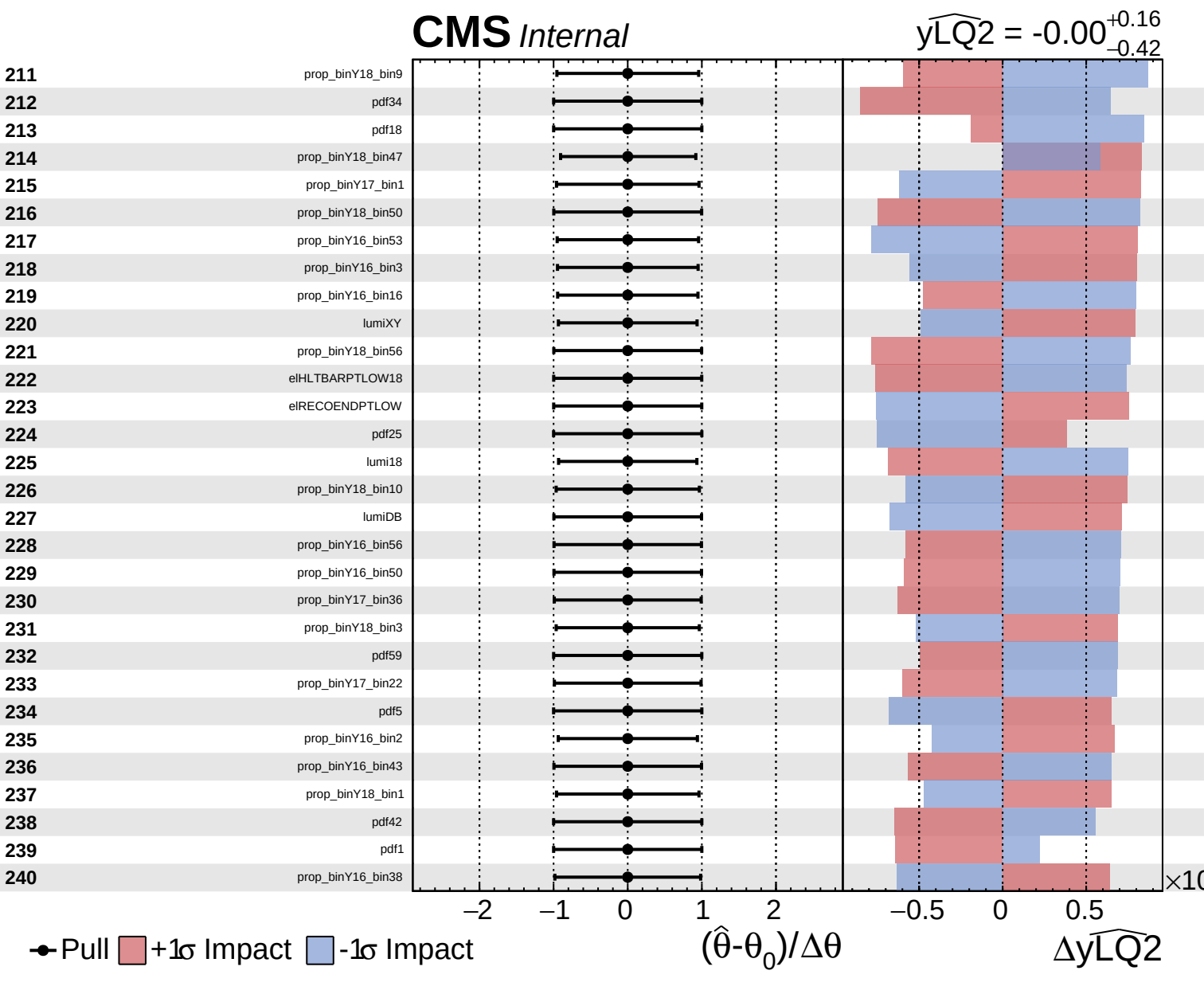

CMS Internal
ŷLQ2 = -0.00 +0.16 −0.42
61 prop_binY18_bin15
62 prop_binY17_bin14
63 prop_binY18_bin18
64 pdf48
65 emucostrw1b1718
66 prop_binY16_bin49
67 prop_binY16_bin19
68 prop_binY17_bin7
69 prop_binY18_bin19
70 pdf14
71 prop_binY16_bin15
72 lumi17
73 prop_binY18_bin13
74 prop_binY17_bin28
75 MCStatBin43
76 prop_binY17_bin18
77 MCStatBin50
78 prop_binY16_bin8
79 prop_binY17_bin15
80 MCStatBin42
81 prop_binY16_bin18
82 prop_binY17_bin13
83 pdf38
84 MCStatBin4
85 prop_binY18_bin55
86 MCStatBin44
87 prop_binY18_bin8
88 pdf4
89 elRECOBARPTHIGH
90 prop_binY18_bin35
−2 −1 0 1 2
−0.005 0 0.005
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

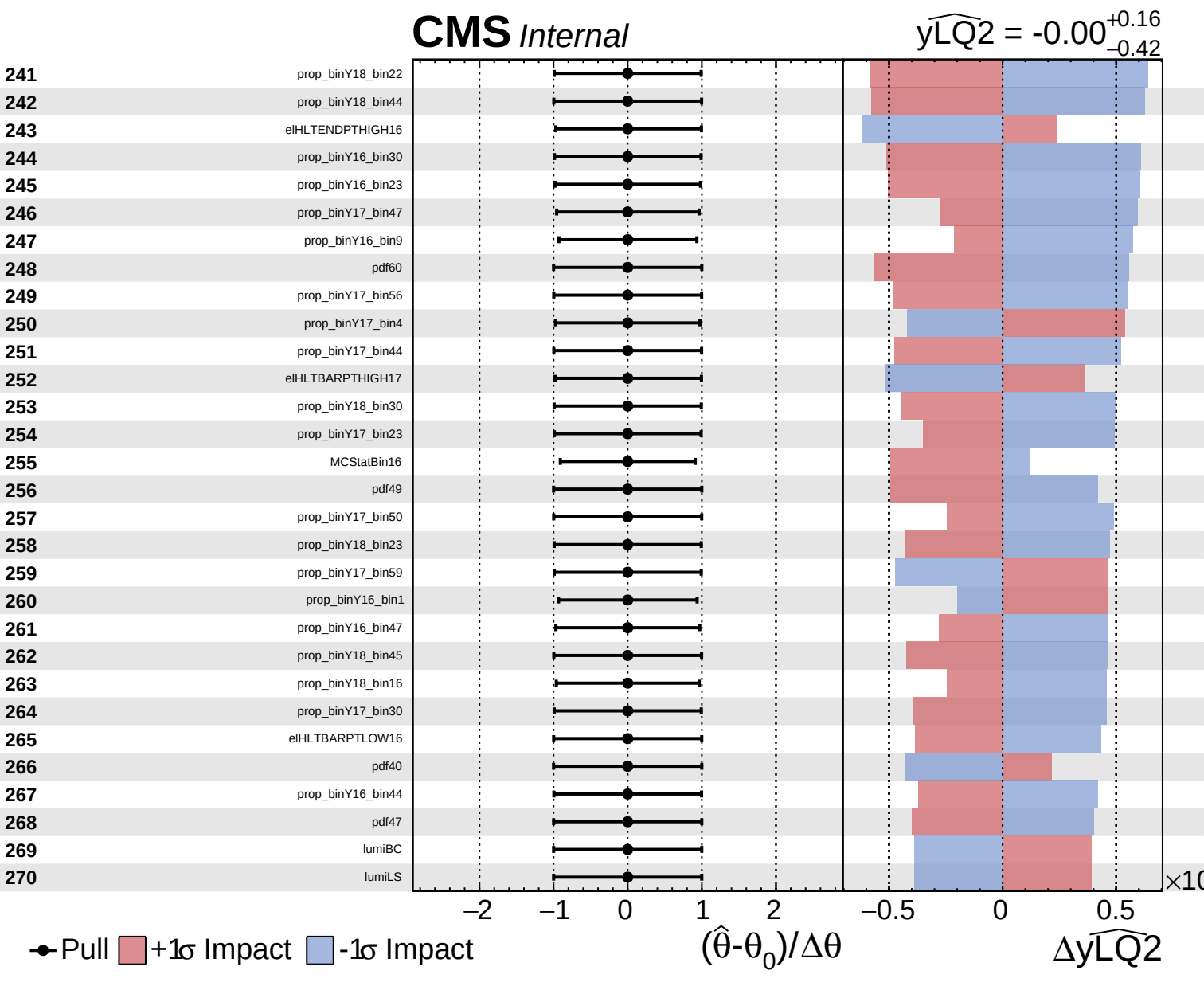

CMS Internal
yLQ2 = -0.00 +0.16 −0.42
91 prop_binY16_bin27
92 pdf33
93 top_xsec
94 FAC16
95 gam_xsec
96 prop_binY16_bin40
97 prop_binY16_bin13
98 pdf36
99 elfakesrw2b16
100 prop_binY18_bin12
101 prop_binY16_bin41
102 pdf45
103 elfakesrw2b18
104 MCStatBin51
105 prop_binY17_bin19
106 pdf53
107 prop_binY16_bin55
108 pdf44
109 prop_binY18_bin6
110 prop_binY17_bin6
111 prop_binY17_bin0
112 pdf20
113 pdf15
114 MCStatBin1
115 prop_binY18_bin17
116 prop_binY17_bin49
117 prop_binY17_bin17
118 prop_binY18_bin20
119 FAC1718
120 prop_binY16_bin35
−2
−1
0
1
2
−0.002
0
0.002
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔyLQ2

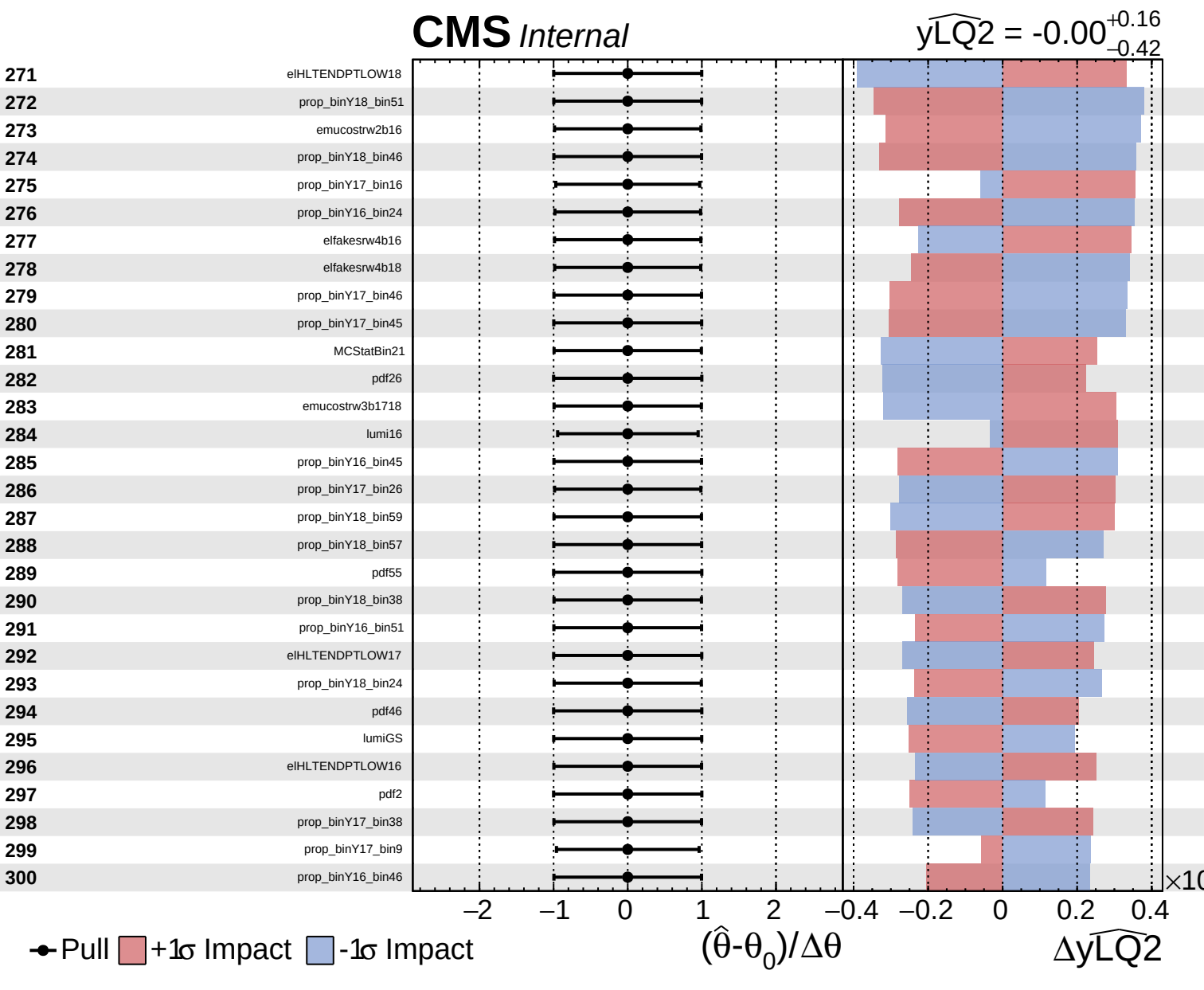

CMS Internal
ŷLQ2 = -0.00 +0.16 −0.42
121 MCStatBin57
122 prefire16
123 pdf10
124 pdf58
125 Pu
126 elfakesrw3b16
127 MCStatBin29
128 elScaleSyst
129 pdf13
130 pdf9
131 prop_binY16_bin33
132 emucostrw1b16
133 alphaS16
134 prop_binY16_bin12
135 MCStatBin9
136 MCStatBin41
137 prop_binY16_bin6
138 pdf22
139 prop_binY17_bin12
140 pdf27
141 pdf31
142 prop_binY16_bin5
143 MCStatBin30
144 prop_binY16_bin17
145 prop_binY18_bin49
146 prop_binY17_bin35
147 elfakesrw4b17
148 prop_binY18_bin33
149 prop_binY18_bin11
150 prop_binY16_bin42
−2 −1 0 1 2
−0.002 0 0.002
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

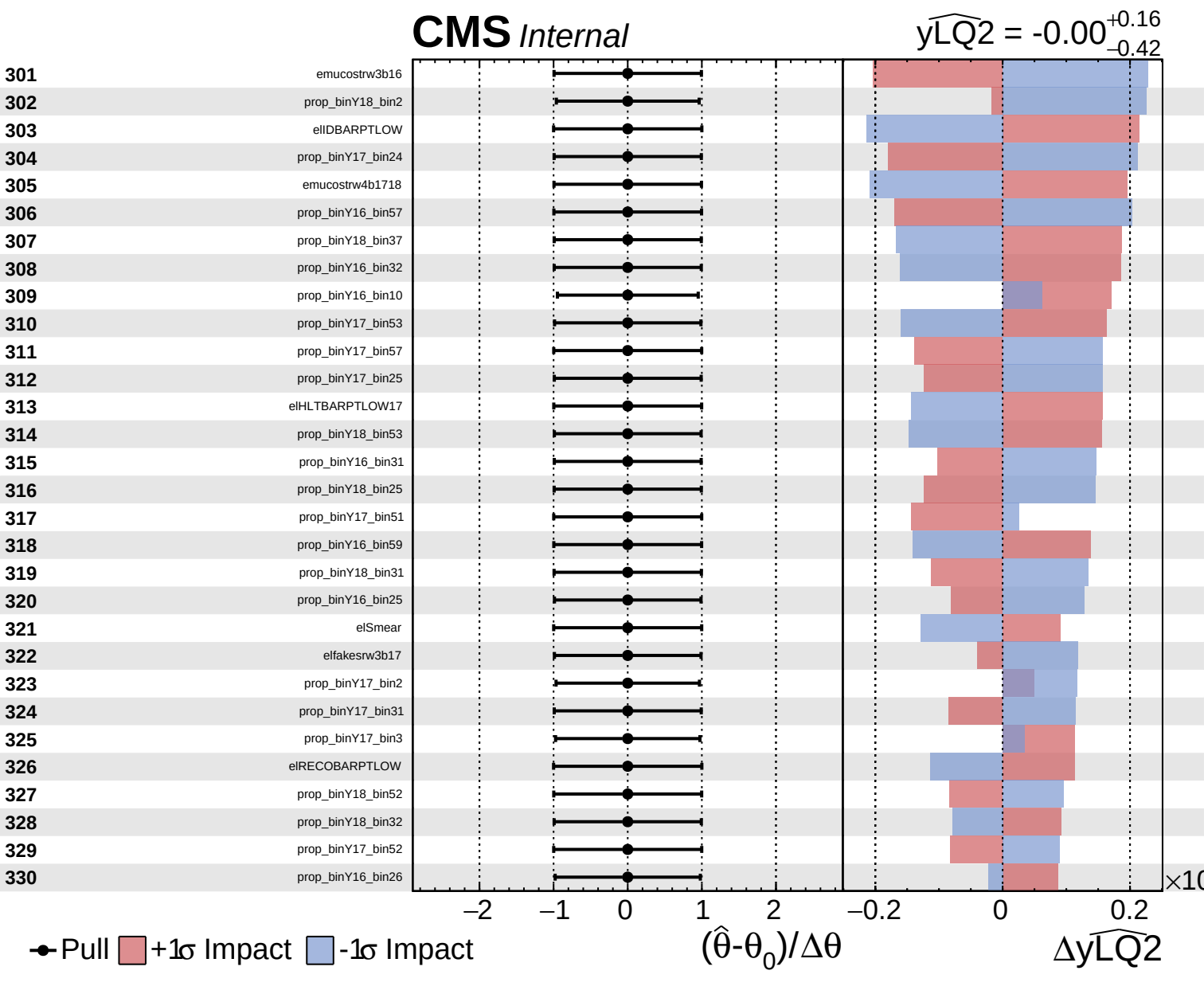

CMS Internal
ŷLQ2 = -0.00 +0.16 −0.42
151 prop_binY17_bin55
152 elIDENDPTLOW
153 pdf17
154 prop_binY17_bin8
155 prop_binY17_bin27
156 prop_binY16_bin21
157 pdf54
158 MCStatBin23
159 pdf50
160 prop_binY18_bin41
161 prefire17
162 prop_binY18_bin5
163 prop_binY16_bin20
164 prop_binY17_bin20
165 prop_binY17_bin41
166 pdf29
167 prop_binY18_bin39
168 MCStatBin22
169 pdf41
170 elRECOENDPTHIGH
171 prop_binY16_bin4
172 prop_binY17_bin29
173 MCStatBin37
174 pdf51
175 pdf16
176 MCStatBin24
177 prop_binY18_bin42
178 MCStatBin31
179 pdf3
180 pdf24
−2
−1
0
1
2
−0.001
0
0.001
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2

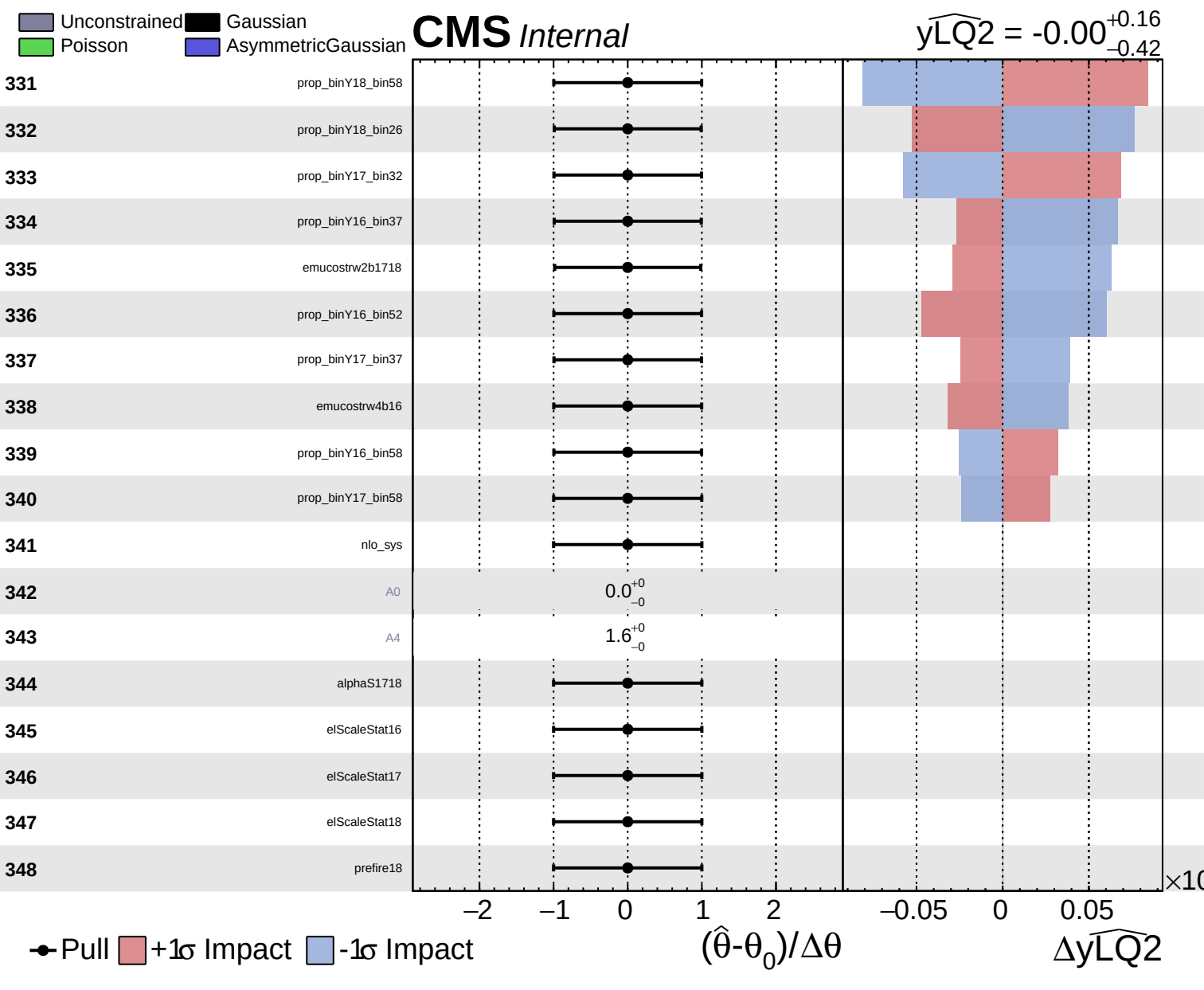

CMS Internal
$\widehat{yLQ2}$ = -0.00$^{+0.16}_{-0.42}$
181 prop_binY18_bin4
182 prop_binY17_bin10
183 pdf6
184 prop_binY16_bin39
185 prop_binY17_bin11
186 prop_binY17_bin43
187 pdf37
188 elHLTENDPTHIGH18
189 prop_binY17_bin33
190 prop_binY18_bin21
191 prop_binY16_bin29
192 pdf52
193 elfakesrw3b18
194 prop_binY16_bin11
195 prop_binY18_bin29
196 prop_binY17_bin5
197 prop_binY16_bin22
198 pdf21
199 prop_binY17_bin42
200 prop_binY17_bin21
201 elHLTBARPTHIGH16
202 prop_binY18_bin36
203 pdf39
204 prop_binY17_bin39
205 prop_binY18_bin43
206 elHLTBARPTHIGH18
207 db_xsec
208 pdf56
209 prop_binY16_bin36
210 elHLTENDPTHIGH17
–2 –1 0 1 2
–0.001 0 0.001
Pull +1σ Impact -1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\widehat{yLQ2}$


CMS Internal
yLQ2 = -0.00 +0.16 −0.42
211 prop_binY18_bin9
212 pdf34
213 pdf18
214 prop_binY18_bin47
215 prop_binY17_bin1
216 prop_binY18_bin50
217 prop_binY16_bin53
218 prop_binY16_bin3
219 prop_binY16_bin16
220 lumiXY
221 prop_binY18_bin56
222 elHLTBARPTLOW18
223 elRECOENDPTLOW
224 pdf25
225 lumi18
226 prop_binY18_bin10
227 lumiDB
228 prop_binY16_bin56
229 prop_binY16_bin50
230 prop_binY17_bin36
231 prop_binY18_bin3
232 pdf59
233 prop_binY17_bin22
234 pdf5
235 prop_binY16_bin2
236 prop_binY16_bin43
237 prop_binY18_bin1
238 pdf42
239 pdf1
240 prop_binY16_bin38
×10
−2 −1 0 1 2
−0.5 0 0.5
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔyLQ2


CMS Internal
$\widehat{yLQ2}$ = -0.00$^{+0.16}_{-0.42}$
241 prop_binY18_bin22
242 prop_binY18_bin44
243 elHLTENDPTHIGH16
244 prop_binY16_bin30
245 prop_binY16_bin23
246 prop_binY17_bin47
247 prop_binY16_bin9
248 pdf60
249 prop_binY17_bin56
250 prop_binY17_bin4
251 prop_binY17_bin44
252 elHLTBARPTHIGH17
253 prop_binY18_bin30
254 prop_binY17_bin23
255 MCStatBin16
256 pdf49
257 prop_binY17_bin50
258 prop_binY18_bin23
259 prop_binY17_bin59
260 prop_binY16_bin1
261 prop_binY16_bin47
262 prop_binY18_bin45
263 prop_binY18_bin16
264 prop_binY17_bin30
265 elHLTBARPTLOW16
266 pdf40
267 prop_binY16_bin44
268 pdf47
269 lumiBC
270 lumiLS
×10
−2 −1 0 1 2
−0.5 0 0.5
Pull +1σ Impact -1σ Impact
$(\hat{\theta}-\theta_0)/\Delta\theta$
$\Delta\widehat{yLQ2}$


CMS Internal
ŷLQ2 = -0.00 +0.16 −0.42
271 elHLTENDPTLOW18
272 prop_binY18_bin51
273 emucostrw2b16
274 prop_binY18_bin46
275 prop_binY17_bin16
276 prop_binY16_bin24
277 elfakesrw4b16
278 elfakesrw4b18
279 prop_binY17_bin46
280 prop_binY17_bin45
281 MCStatBin21
282 pdf26
283 emucostrw3b1718
284 lumi16
285 prop_binY16_bin45
286 prop_binY17_bin26
287 prop_binY18_bin59
288 prop_binY18_bin57
289 pdf55
290 prop_binY18_bin38
291 prop_binY16_bin51
292 elHLTENDPTLOW17
293 prop_binY18_bin24
294 pdf46
295 lumiGS
296 elHLTENDPTLOW16
297 pdf2
298 prop_binY17_bin38
299 prop_binY17_bin9
300 prop_binY16_bin46
×10
−2 −1 0 1 2
−0.4 −0.2 0 0.2 0.4
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔŷLQ2


CMS Internal
yLQ2 = -0.00 +0.16 −0.42
301 emucostrw3b16
302 prop_binY18_bin2
303 elIDBARPTLOW
304 prop_binY17_bin24
305 emucostrw4b1718
306 prop_binY16_bin57
307 prop_binY18_bin37
308 prop_binY16_bin32
309 prop_binY16_bin10
310 prop_binY17_bin53
311 prop_binY17_bin57
312 prop_binY17_bin25
313 elHLTBARPTLOW17
314 prop_binY18_bin53
315 prop_binY16_bin31
316 prop_binY18_bin25
317 prop_binY17_bin51
318 prop_binY16_bin59
319 prop_binY18_bin31
320 prop_binY16_bin25
321 elSmear
322 elfakesrw3b17
323 prop_binY17_bin2
324 prop_binY17_bin31
325 prop_binY17_bin3
326 elRECOBARPTLOW
327 prop_binY18_bin52
328 prop_binY18_bin32
329 prop_binY17_bin52
330 prop_binY16_bin26
×10
−2 −1 0 1 2
−0.2 0 0.2
Pull +1σ Impact -1σ Impact
(θ̂-θ0)/Δθ
ΔyLQ2


Unconstrained
Gaussian
Poisson
AsymmetricGaussian
CMS Internal
yLQ2 = -0.00 +0.16 −0.42
331 prop_binY18_bin58
332 prop_binY18_bin26
333 prop_binY17_bin32
334 prop_binY16_bin37
335 emucostrw2b1718
336 prop_binY16_bin52
337 prop_binY17_bin37
338 emucostrw4b16
339 prop_binY16_bin58
340 prop_binY17_bin58
341 nlo_sys
342 A0
0.0 +0 −0
343 A4
1.6 +0 −0
344 alphaS1718
345 elScaleStat16
346 elScaleStat17
347 elScaleStat18
348 prefire18
×10
−2 −1 0 1 2
−0.05 0 0.05
Pull
+1σ Impact
-1σ Impact
(θ̂-θ0)/Δθ
ΔyLQ2