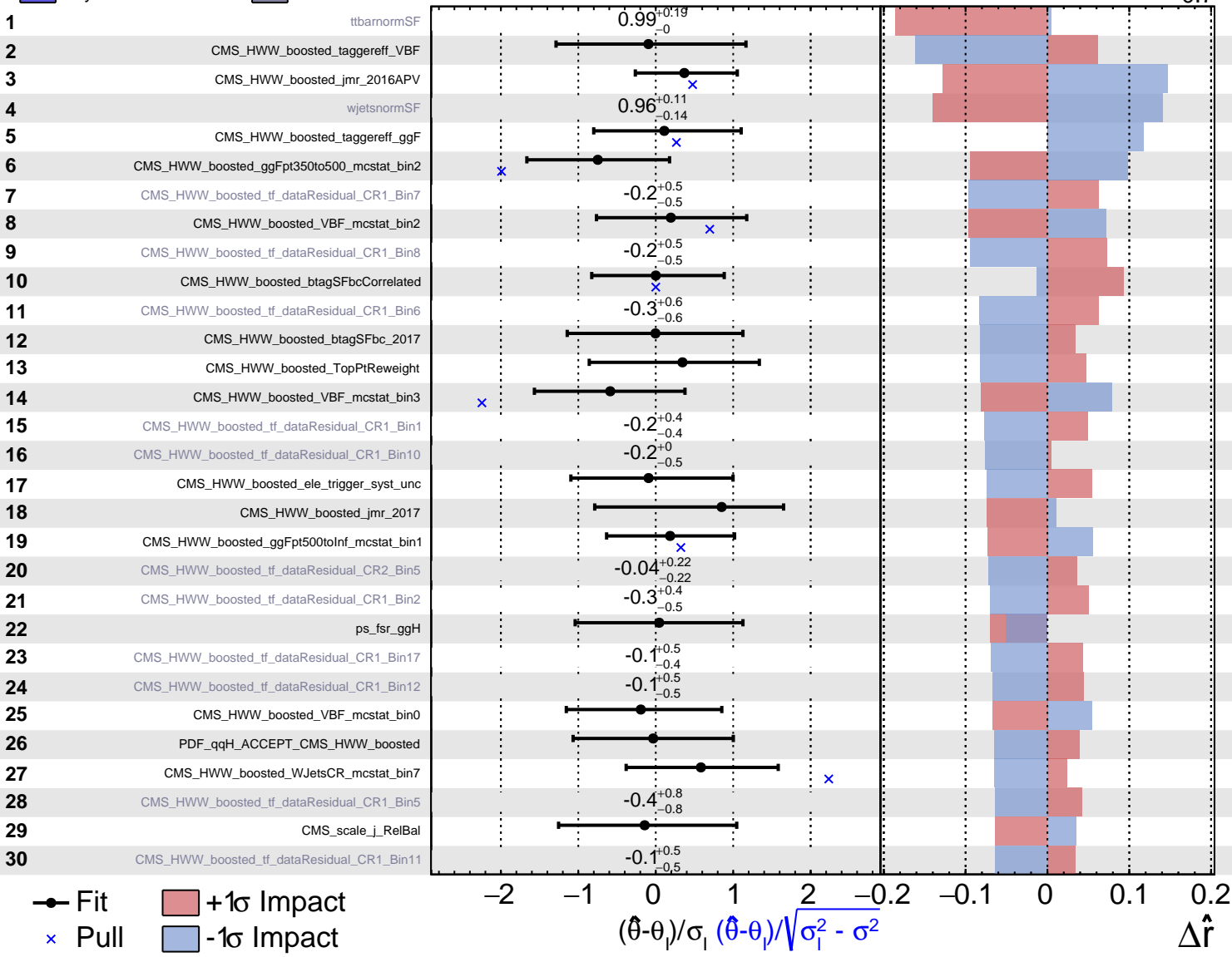
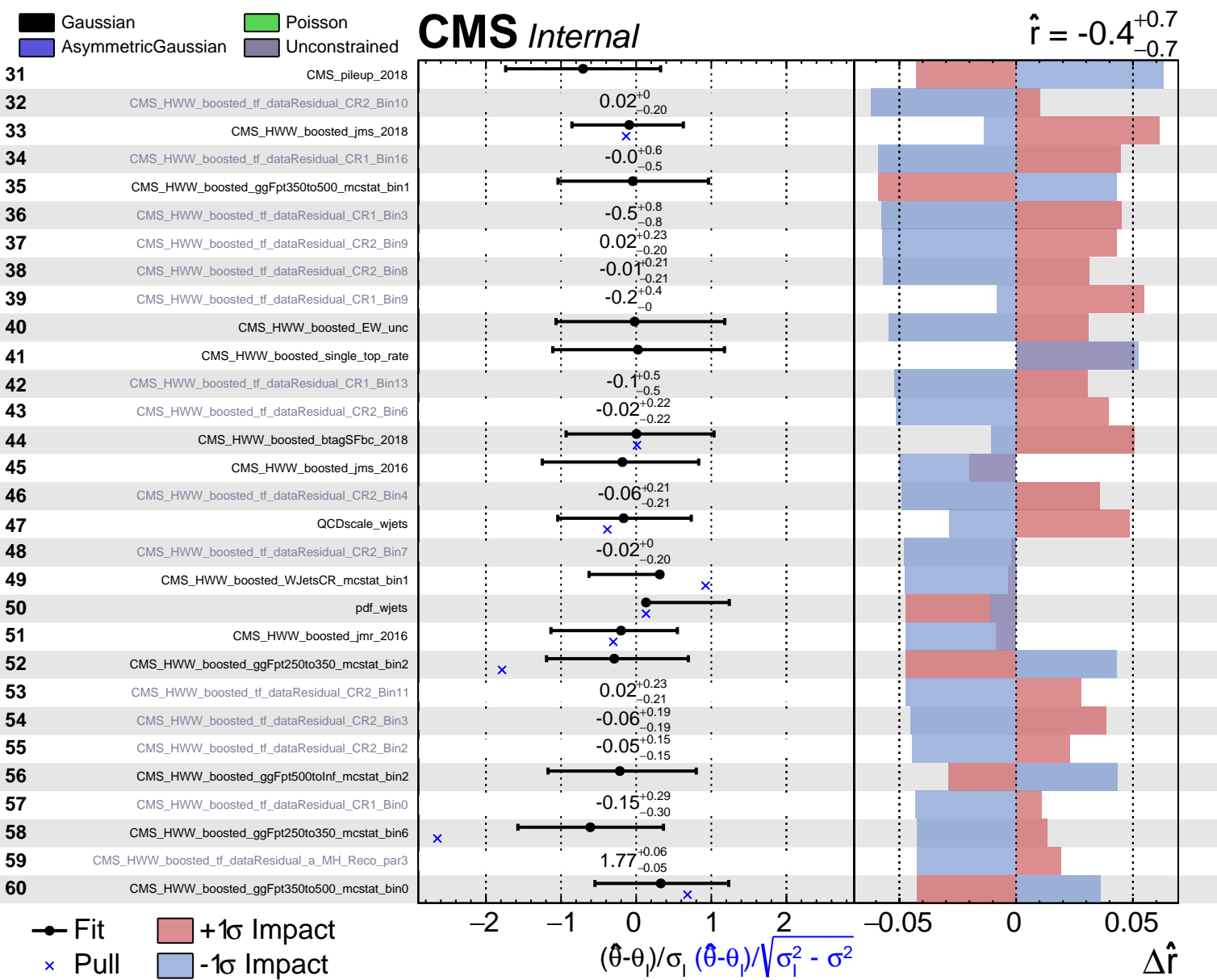


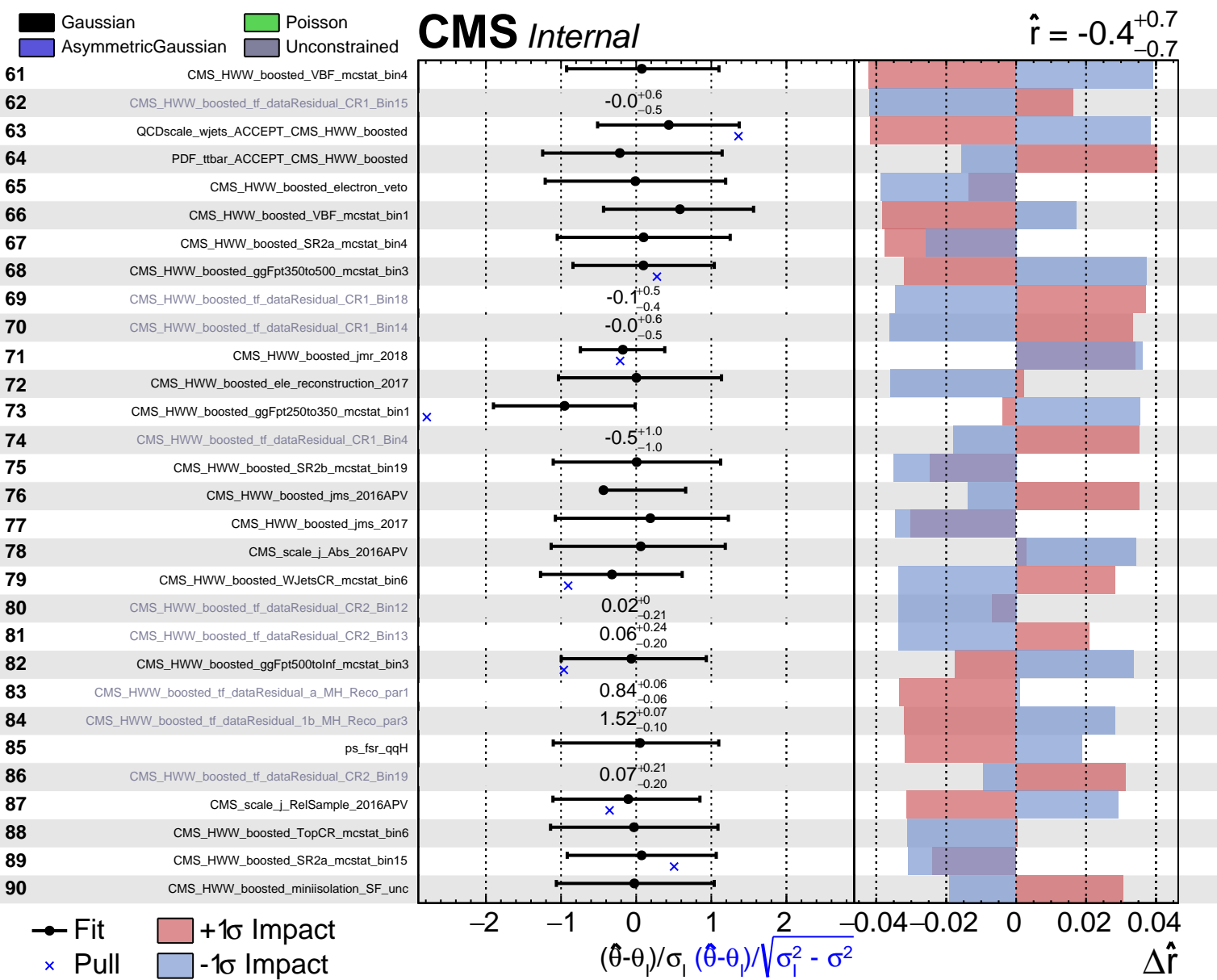
Gaussian  
 Poisson  
 AsymmetricGaussian  
 Unconstrained

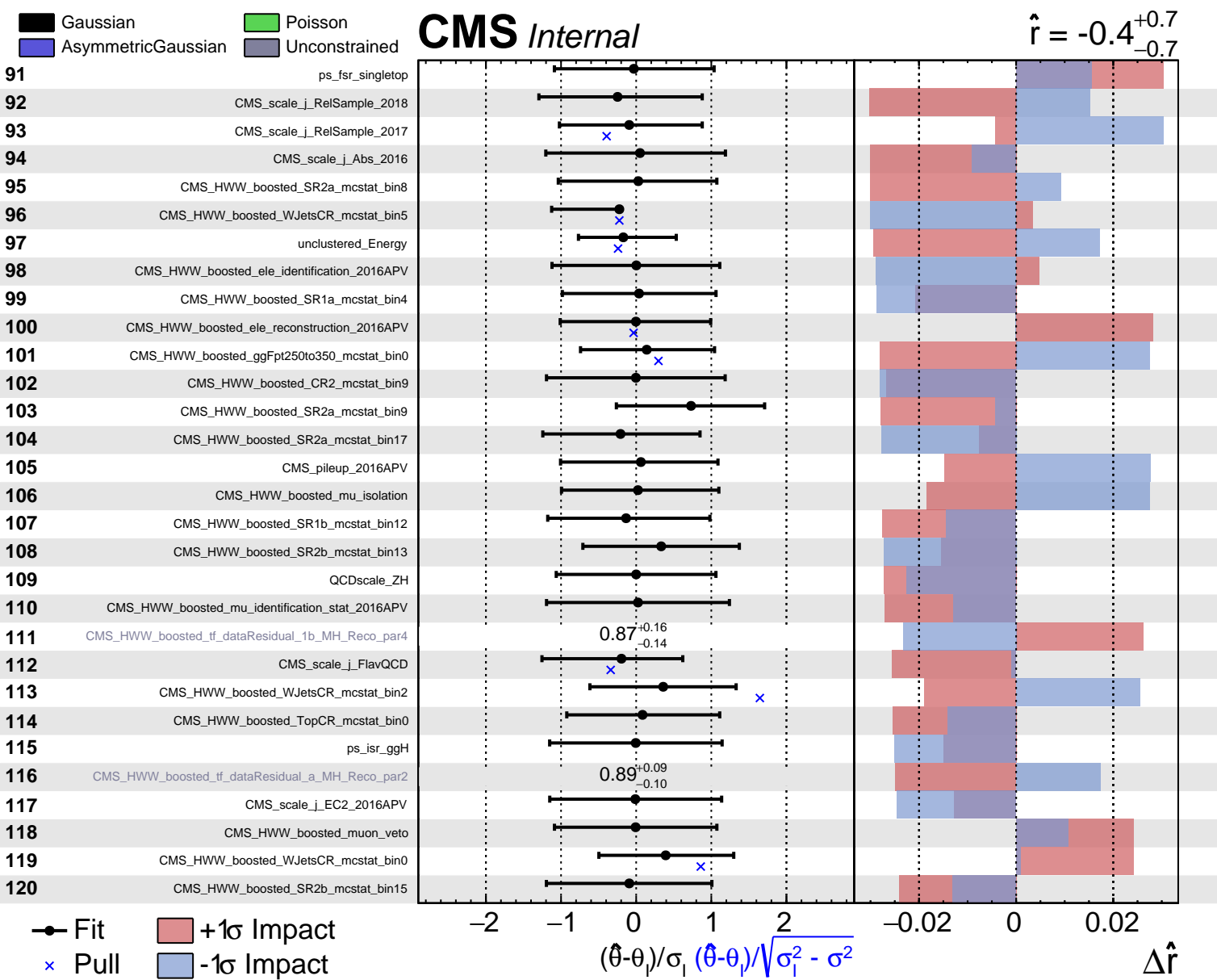
# CMS Internal

$\hat{r} = -0.4^{+0.7}_{-0.7}$





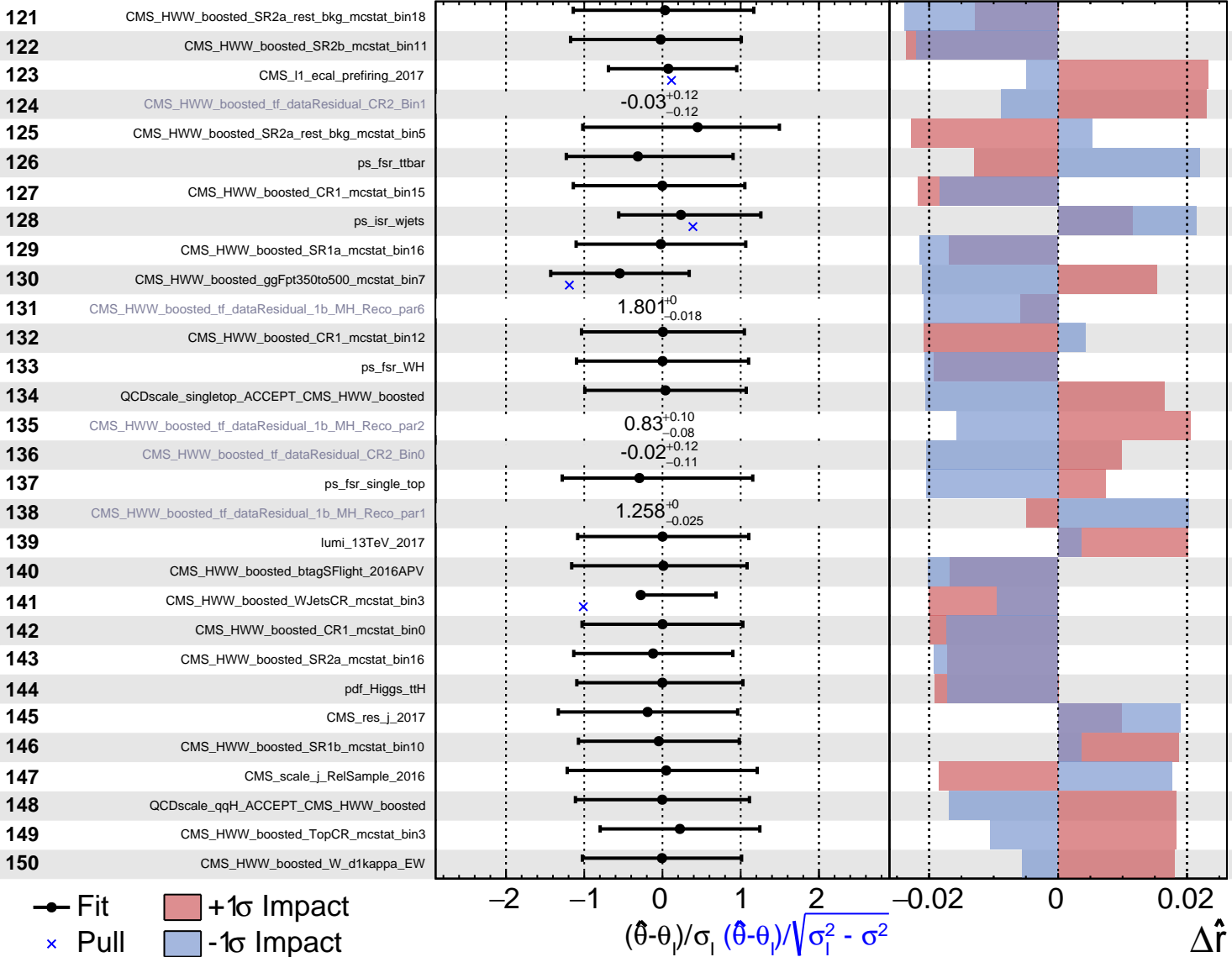




Gaussian  
 Poisson  
 AsymmetricGaussian  
 Unconstrained

# CMS Internal

$\hat{r} = -0.4^{+0.7}_{-0.7}$

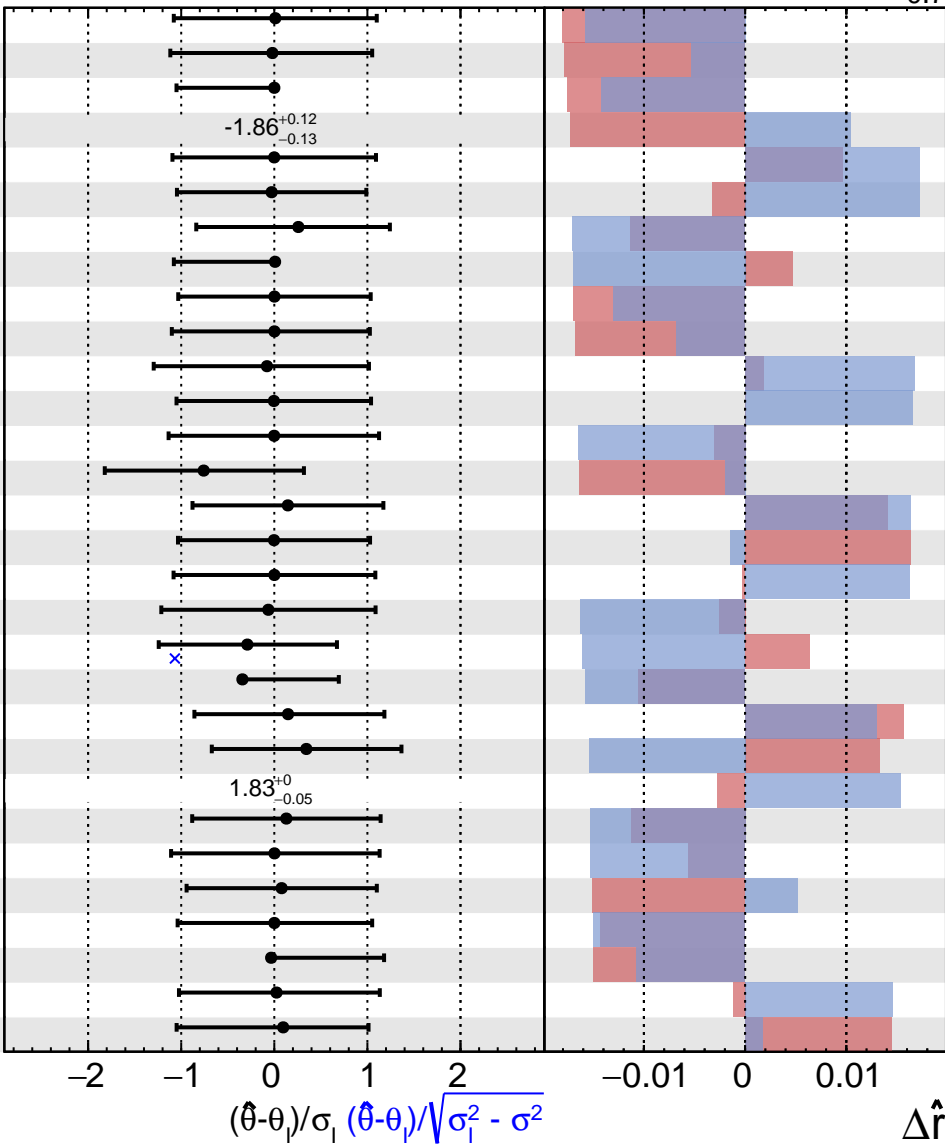


Gaussian  
 Poisson  
 AsymmetricGaussian  
 Unconstrained

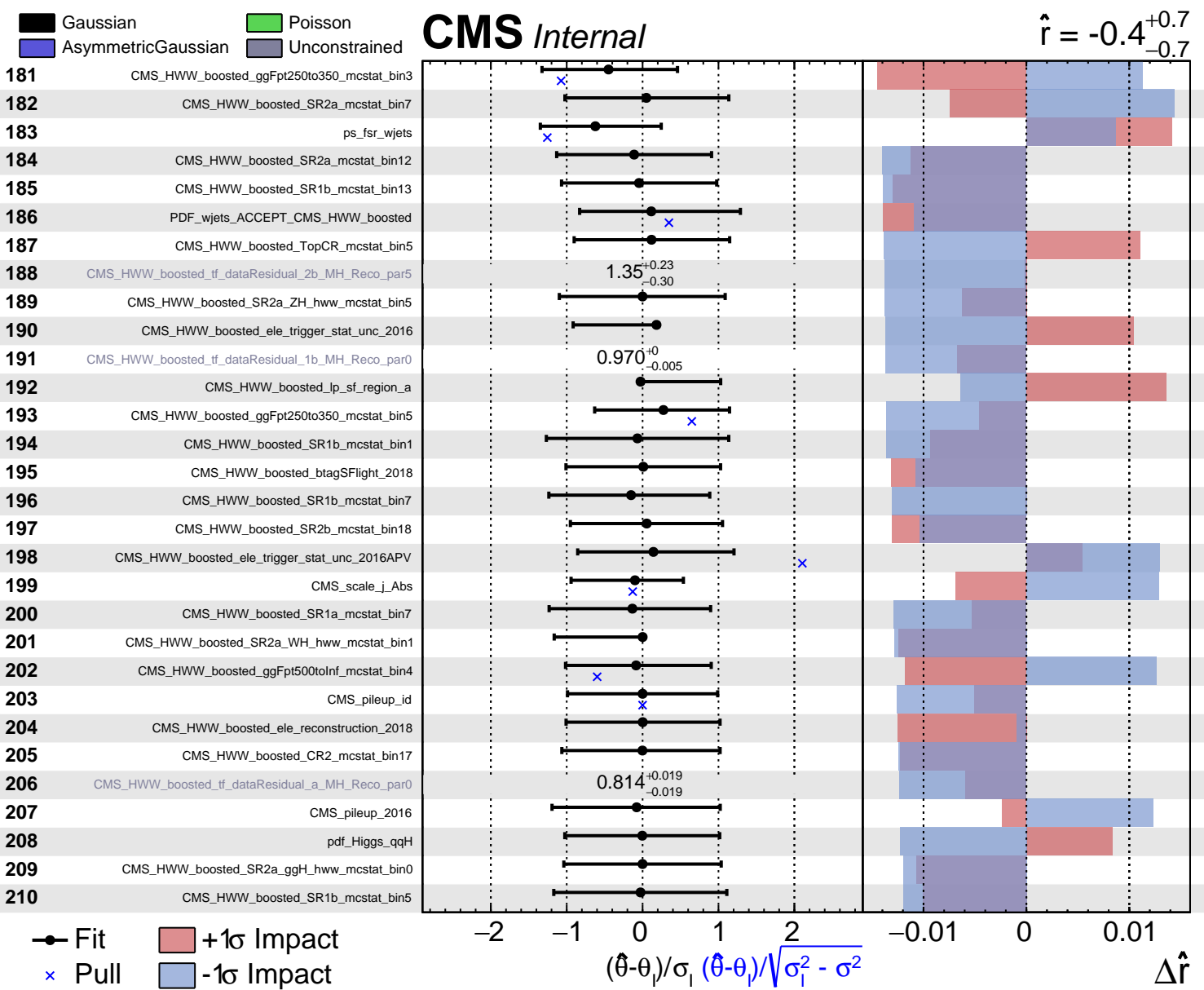
**CMS Internal**

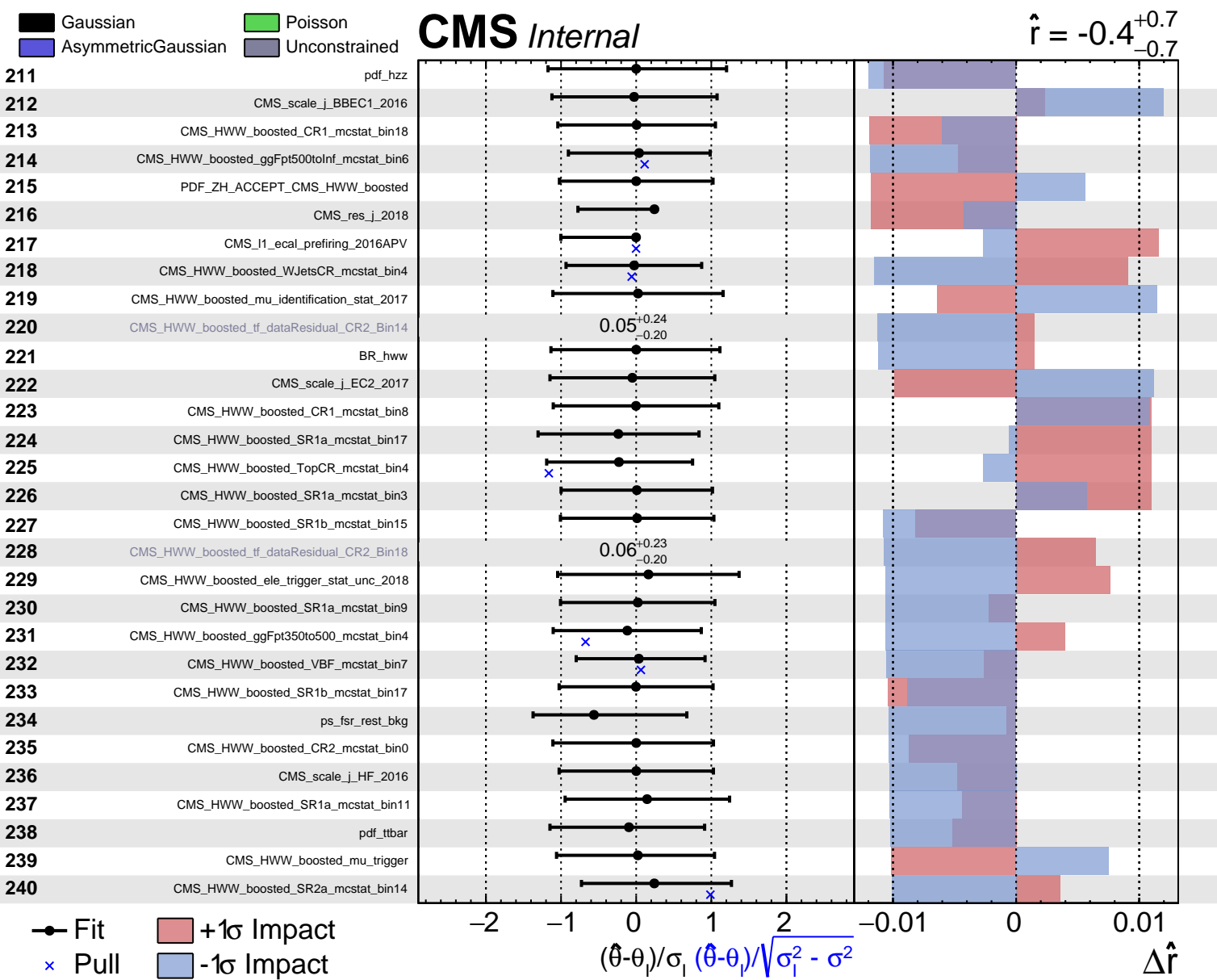
$\hat{r} = -0.4^{+0.7}_{-0.7}$

151	QCDscale_ggH_ACCEPT_CMS_HWW_boosted
152	CMS_HWW_boosted_SR1a_mcstat_bin10
153	CMS_HWW_boosted_btagSFlight_2016
154	CMS_HWW_boosted_tf_dataResidual_2b_MH_Reco_par6
155	CMS_HWW_boosted_SR2a_qqH_hww_mcstat_bin0
156	CMS_scale_j_EC2
157	CMS_HWW_boosted_SR2a_mcstat_bin13
158	CMS_HWW_boosted_btagSFbc_2016APV
159	CMS_HWW_boosted_SR2a_ggH_hww_mcstat_bin1
160	hzz
161	CMS_scale_j_Abs_2017
162	CMS_scale_j_BBEC1_2016APV
163	ps_isr_tth
164	CMS_HWW_boosted_VBF_mcstat_bin5
165	CMS_HWW_boosted_SR1b_mcstat_bin11
166	CMS_HWW_boosted_CR2_mcstat_bin14
167	CMS_scale_j_HF
168	CMS_scale_j_BBEC1_2018
169	CMS_HWW_boosted_ggFpt500toInf_mcstat_bin5
170	CMS_HWW_boosted_ggFpt350to500_mcstat_bin5
171	CMS_HWW_boosted_ele_trigger_stat_unc_2017
172	CMS_HWW_boosted_TopCR_mcstat_bin7
173	CMS_HWW_boosted_tf_dataResidual_1b_MH_Reco_par5
174	CMS_HWW_boosted_SR1a_mcstat_bin5
175	QCDscale_single_top_ACCEPT_CMS_HWW_boosted
176	CMS_HWW_boosted_SR1b_mcstat_bin9
177	CMS_HWW_boosted_CR2_mcstat_bin3
178	CMS_HWW_boosted_btagSFbc_2016
179	CMS_HWW_boosted_mu_identification_stat_2018
180	CMS_HWW_boosted_triggerEffSF_uncorrelated



Fit  
 Pull  
 +1 $\sigma$  Impact  
 -1 $\sigma$  Impact





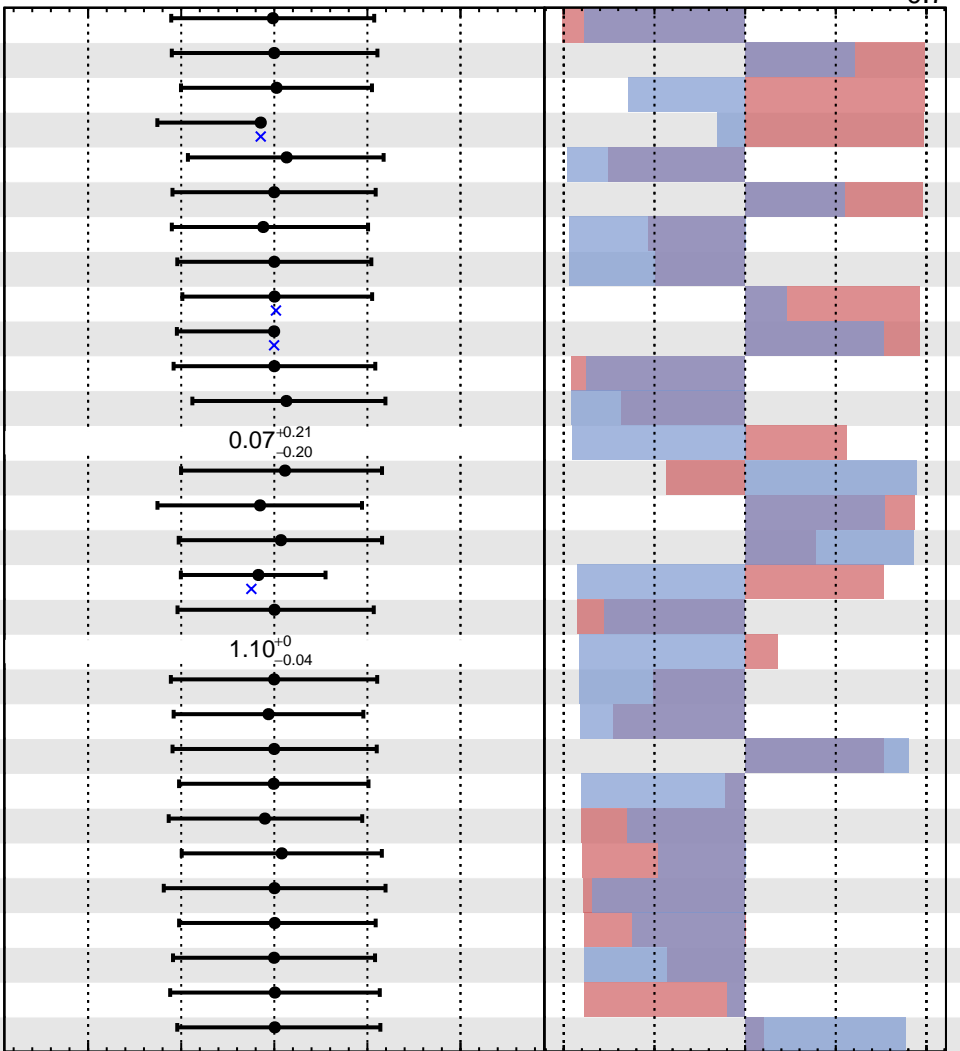


Gaussian  
 Poisson  
 AsymmetricGaussian  
 Unconstrained

# CMS Internal

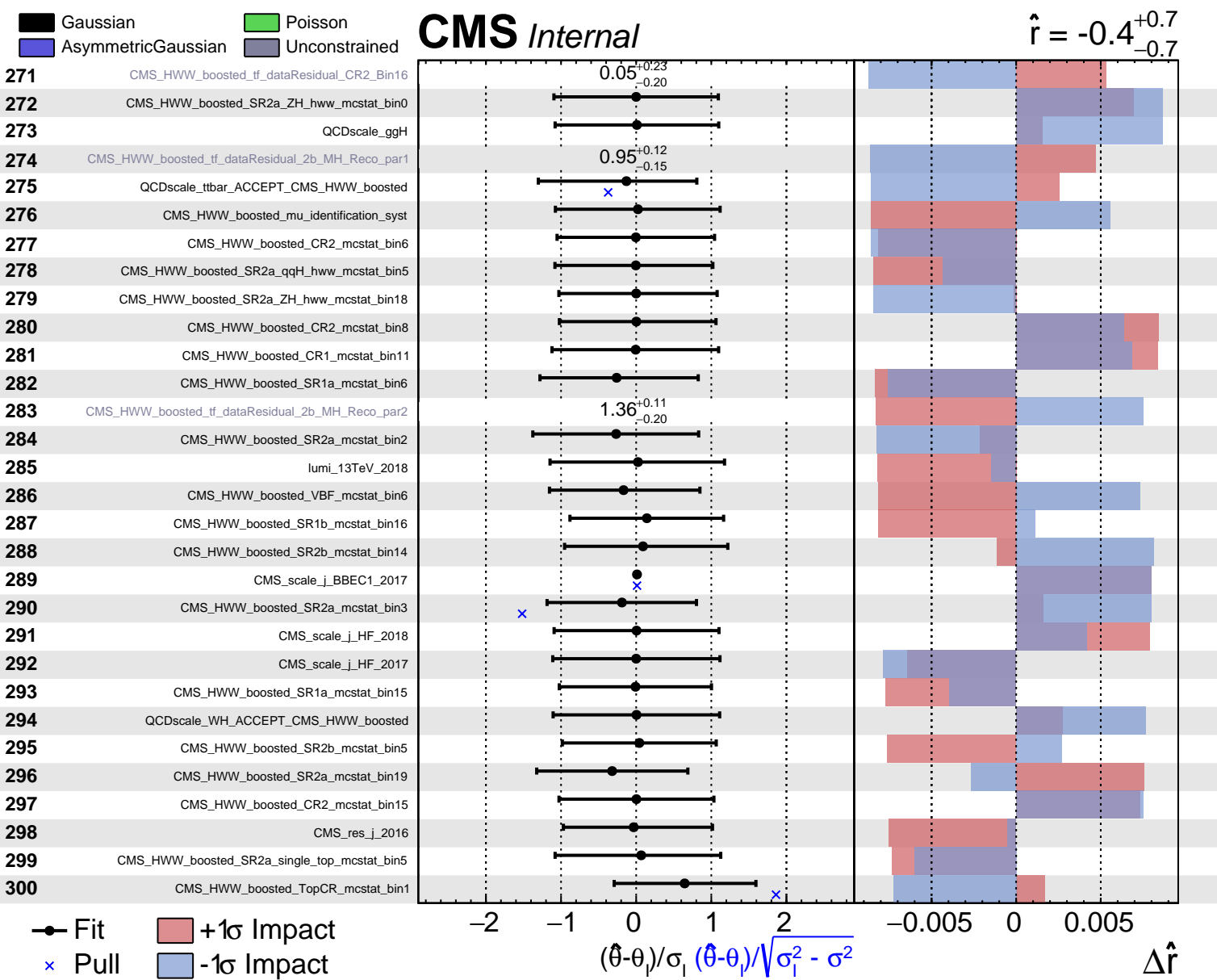
$\hat{r} = -0.4^{+0.7}_{-0.7}$

- 241 CMS\_HWW\_boosted\_SR2b\_mcstat\_bin10
- 242 QCDscale\_hzz
- 243 CMS\_HWW\_boosted\_SR2a\_ttbar\_mcstat\_bin0
- 244 CMS\_pileup\_2017
- 245 CMS\_HWW\_boosted\_SR1a\_mcstat\_bin14
- 246 QCDscale\_ZH\_ACCEPT\_CMS\_HWW\_boosted
- 247 CMS\_HWW\_boosted\_ggFt500toInf\_mcstat\_bin7
- 248 CMS\_HWW\_boosted\_SR2a\_WH\_hww\_mcstat\_bin18
- 249 CMS\_l1\_ecal\_prefiring\_2016
- 250 CMS\_HWW\_boosted\_ele\_identification\_2017
- 251 CMS\_HWW\_boosted\_SR2a\_tth\_hww\_mcstat\_bin1
- 252 CMS\_HWW\_boosted\_SR1a\_mcstat\_bin13
- 253 CMS\_HWW\_boosted\_tf\_dataResidual\_CR2\_Bin17
- 254 CMS\_HWW\_boosted\_rest\_bkg\_rate
- 255 CMS\_HWW\_boosted\_SR2a\_wjets\_mcstat\_bin1
- 256 CMS\_HWW\_boosted\_SR2a\_ttbar\_mcstat\_bin5
- 257 CMS\_scale\_j\_Abs\_2018
- 258 CMS\_HWW\_boosted\_CR1\_mcstat\_bin14
- 259 CMS\_HWW\_boosted\_tf\_dataResidual\_2b\_MH\_Reco\_par0
- 260 CMS\_HWW\_boosted\_CR2\_mcstat\_bin5
- 261 CMS\_HWW\_boosted\_SR1b\_mcstat\_bin14
- 262 QCDscale\_qqH
- 263 ps\_fsr\_tth
- 264 CMS\_HWW\_boosted\_SR1b\_mcstat\_bin18
- 265 CMS\_HWW\_boosted\_SR2a\_wjets\_mcstat\_bin0
- 266 lumi\_13TeV\_2016
- 267 pdf\_Higgs\_ggH
- 268 CMS\_HWW\_boosted\_SR2a\_single\_top\_mcstat\_bin18
- 269 CMS\_HWW\_boosted\_CR2\_mcstat\_bin16
- 270 ps\_isr\_qqH



Fit  
 +1σ Impact  
 Pull  
 -1σ Impact

-2 -1 0 1 2 -0.01 -0.005 0 0.005 0.01  
 $(\hat{\theta}-\theta_i)/\sigma_i$   $(\hat{\theta}-\theta_i)/\sqrt{\sigma_i^2 - \sigma^2}$   $\Delta \hat{r}$

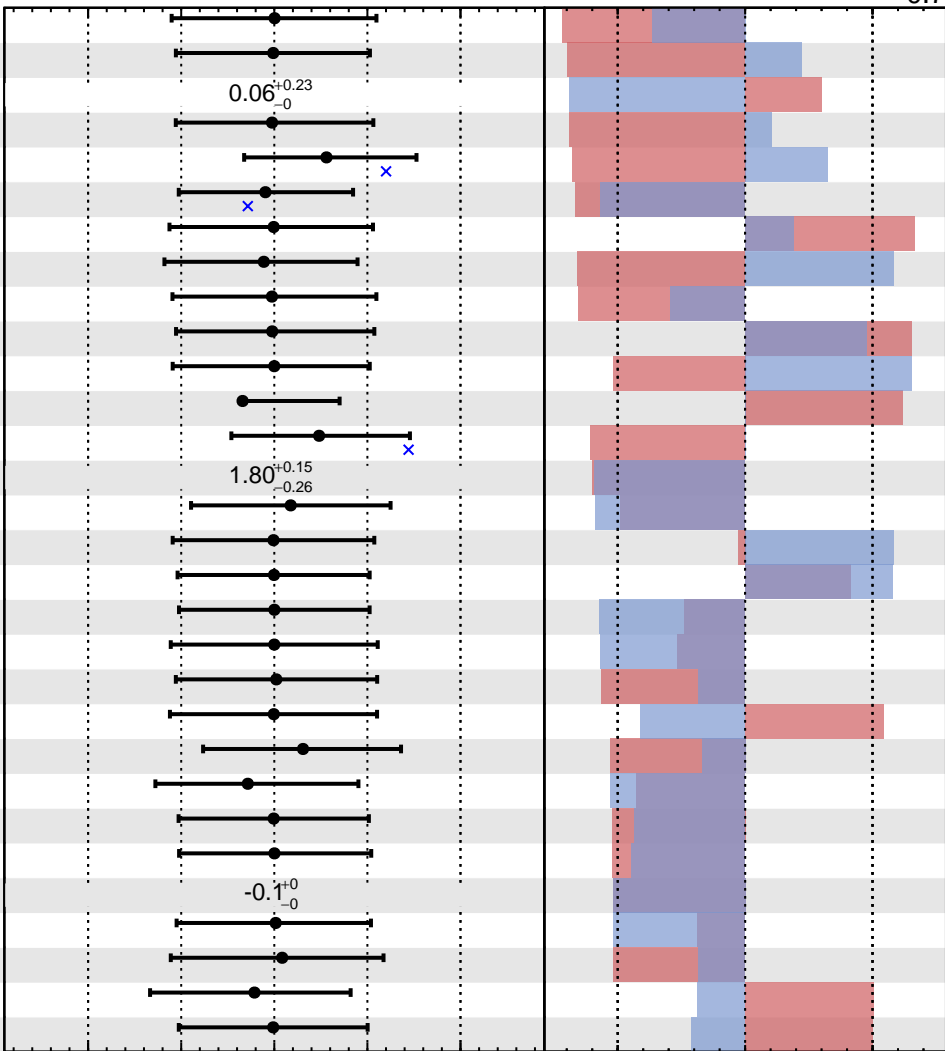


Gaussian  
 Poisson  
 AsymmetricGaussian  
 Unconstrained

# CMS Internal

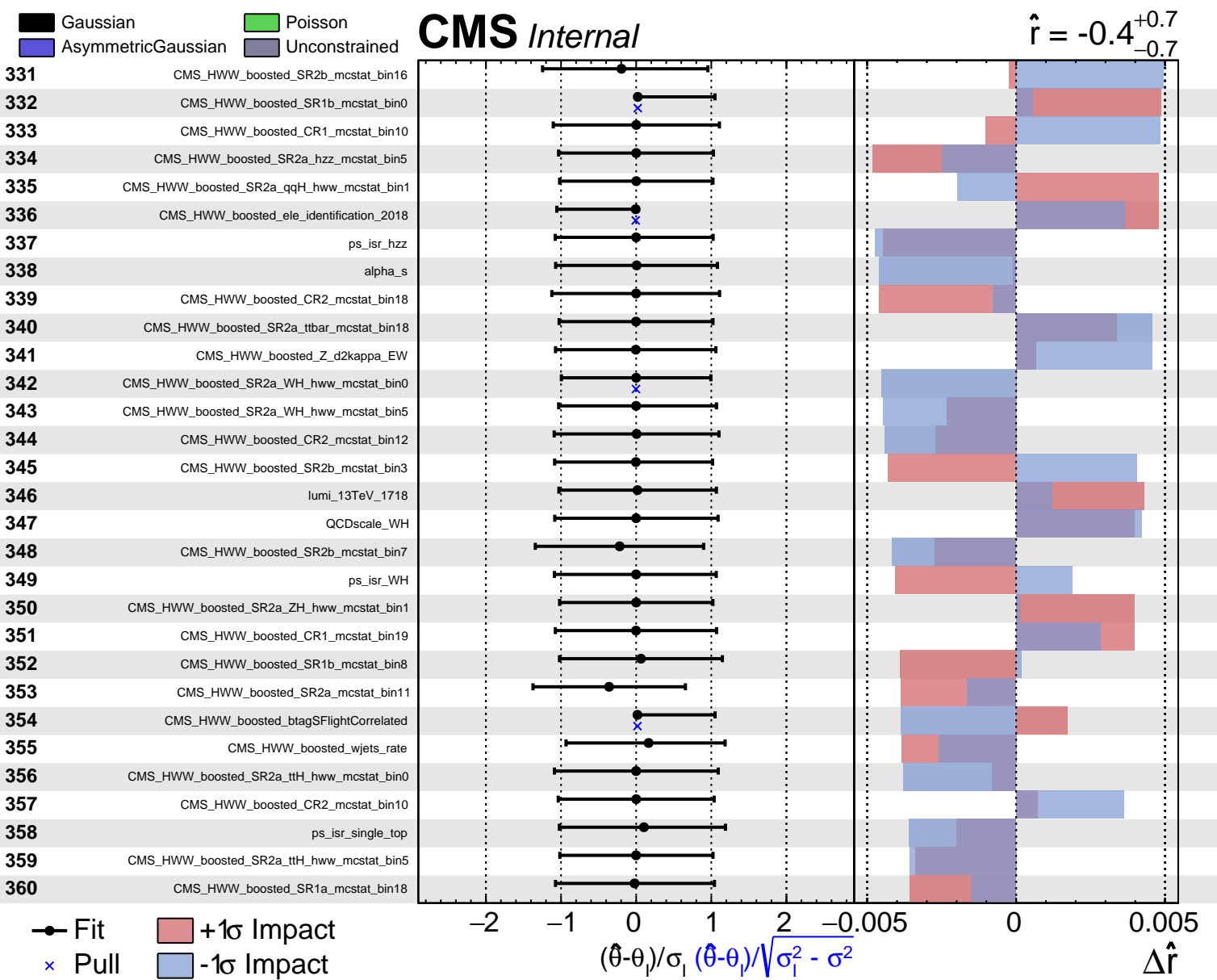
$\hat{r} = -0.4^{+0.7}_{-0.7}$

- 301 ps\_fsr\_ZH
- 302 CMS\_HWW\_boosted\_ele\_identification\_2016
- 303 CMS\_HWW\_boosted\_tf\_dataResidual\_CR2\_Bin15
- 304 CMS\_scale\_j\_EC2\_2018
- 305 QCDscale\_ttbar
- 306 CMS\_HWW\_boosted\_ggFpt250to350\_mcstat\_bin4
- 307 CMS\_scale\_j\_EC2\_2016
- 308 CMS\_scale\_j\_BBEC1
- 309 CMS\_HWW\_boosted\_SR1a\_mcstat\_bin0
- 310 CMS\_HWW\_boosted\_SR1b\_mcstat\_bin4
- 311 pdf\_Higgs\_ZH
- 312 CMS\_HWW\_boosted\_TopCR\_mcstat\_bin2
- 313 CMS\_HWW\_boosted\_SR2a\_mcstat\_bin6
- 314 CMS\_HWW\_boosted\_tf\_dataResidual\_2b\_MH\_Reco\_par4
- 315 CMS\_HWW\_boosted\_SR2b\_mcstat\_bin9
- 316 CMS\_HWW\_boosted\_CR2\_mcstat\_bin13
- 317 CMS\_HWW\_boosted\_CR1\_mcstat\_bin9
- 318 CMS\_HWW\_boosted\_CR2\_mcstat\_bin11
- 319 CMS\_HWW\_boosted\_CR2\_mcstat\_bin4
- 320 ps\_isr\_singletop
- 321 CMS\_HWW\_boosted\_SR2a\_ggH\_hww\_mcstat\_bin5
- 322 ps\_isr\_ttbar
- 323 QCDscale\_single\_top
- 324 CMS\_HWW\_boosted\_CR1\_mcstat\_bin3
- 325 CMS\_HWW\_boosted\_CR1\_mcstat\_bin13
- 326 CMS\_HWW\_boosted\_tf\_dataResidual\_CR1\_Bin19
- 327 CMS\_HWW\_boosted\_SR2b\_mcstat\_bin4
- 328 PDF\_single\_top\_ACCEPT\_CMS\_HWW\_boosted
- 329 CMS\_HWW\_boosted\_SR2b\_mcstat\_bin12
- 330 QCDscale\_tH\_ACCEPT\_CMS\_HWW\_boosted



Fit  
 Pull  
 +1 $\sigma$  Impact  
 -1 $\sigma$  Impact

$(\hat{\theta} - \theta_i) / \sigma_i$        $(\hat{\theta} - \theta_i) / \sqrt{\sigma_i^2 - \sigma^2}$        $\Delta \hat{r}$

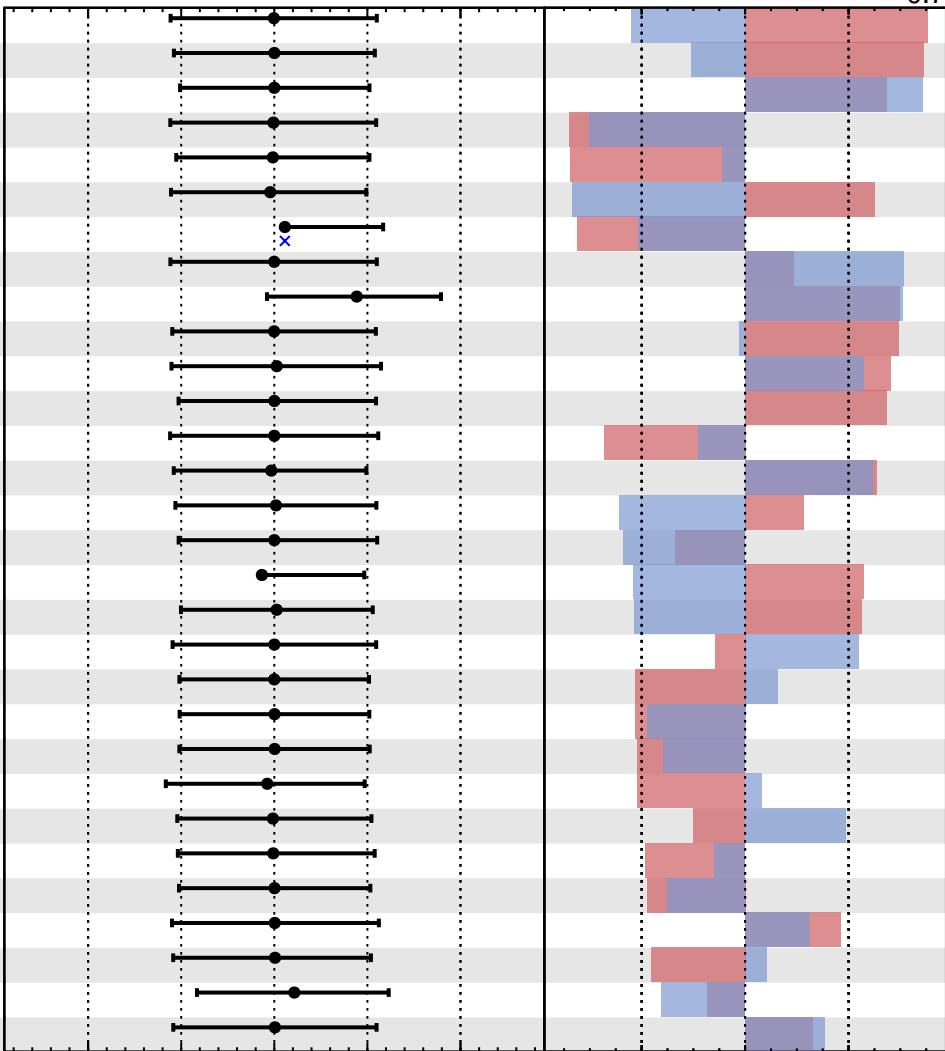


Gaussian  
 Poisson  
 AsymmetricGaussian  
 Unconstrained

**CMS** *Internal*

$\hat{r} = -0.4^{+0.7}_{-0.7}$

- 361 QCDscale\_ttH
- 362 PDF\_WH\_ACCEPT\_CMS\_HWW\_boosted
- 363 CMS\_HWW\_boosted\_CR2\_mcstat\_bin19
- 364 CMS\_HWW\_boosted\_CR1\_mcstat\_bin16
- 365 CMS\_HWW\_boosted\_SR1a\_mcstat\_bin8
- 366 CMS\_HWW\_boosted\_SR2a\_ttbar\_mcstat\_bin1
- 367 CMS\_HWW\_boosted\_SR1a\_mcstat\_bin19
- 368 CMS\_HWW\_boosted\_CR1\_mcstat\_bin4
- 369 CMS\_HWW\_boosted\_ggFpt350to500\_mcstat\_bin6
- 370 PDF\_ttH\_ACCEPT\_CMS\_HWW\_boosted
- 371 pdf\_single\_top
- 372 ps\_fsr\_hzz
- 373 ps\_isr\_ZH
- 374 CMS\_HWW\_boosted\_SR1a\_mcstat\_bin1
- 375 CMS\_HWW\_boosted\_SR1b\_mcstat\_bin6
- 376 pdf\_Higgs\_WH
- 377 CMS\_HWW\_boosted\_SR1a\_mcstat\_bin12
- 378 CMS\_HWW\_boosted\_SR1b\_mcstat\_bin19
- 379 CMS\_HWW\_boosted\_CR1\_mcstat\_bin5
- 380 CMS\_HWW\_boosted\_CR2\_mcstat\_bin1
- 381 CMS\_HWW\_boosted\_CR2\_mcstat\_bin2
- 382 CMS\_HWW\_boosted\_CR1\_mcstat\_bin1
- 383 CMS\_HWW\_boosted\_ttbar\_rate
- 384 CMS\_HWW\_boosted\_SR2a\_rest\_bkg\_mcstat\_bin1
- 385 CMS\_HWW\_boosted\_SR1b\_mcstat\_bin2
- 386 CMS\_scale\_i\_HF\_2016APV
- 387 CMS\_HWW\_boosted\_CR2\_mcstat\_bin7
- 388 PDF\_ggH\_ACCEPT\_CMS\_HWW\_boosted
- 389 ps\_isr\_rest\_bkg
- 390 CMS\_HWW\_boosted\_CR1\_mcstat\_bin7



Fit  
 +1σ Impact  
 -1σ Impact  
x Pull

$(\hat{\theta} - \theta_0)/\sigma_1$   
 $(\hat{\theta} - \theta_0)/\sqrt{\sigma_1^2 - \sigma^2}$

$\Delta \hat{r}$

Gaussian  
 AsymmetricGaussian  
 Poisson  
 Unconstrained

**CMS** *Internal*

$\hat{r} = -0.4^{+0.7}_{-0.7}$

