

Class	Coefficients	LHC_NLO_QUAD_GLOB	
		Fitted	Fixed
2FB	$c_{c\varphi}$	✓	
	$c_{b\varphi}$	✓	
	$c_{t\varphi}$	✓	
	$c_{\tau\varphi}$	✓	
	c_{tG}	✓	
	c_{tW}	✓	
	c_{tZ}	✓	
	$c_{\varphi q}^{(3)}$	✓	
	$c_{\varphi Q}^{(3)}$	✓	
	$c_{\varphi q}^{(-)}$	✓	
	$c_{\varphi Q}^{(-)}$	✓	
	$c_{\varphi u}$	✓	
	$c_{\varphi d}$	✓	
	$c_{\varphi t}$	✓	
	$c_{\varphi l_1}$	✓	
	$c_{\varphi l_2}$	✓	
	$c_{\varphi l_3}$	✓	
	$c_{\varphi l_1}^{(3)}$	✓	
	$c_{\varphi l_2}^{(3)}$	✓	
	$c_{\varphi l_3}^{(3)}$	✓	
	$c_{\varphi e}$	✓	
	$c_{\varphi \mu}$	✓	
	$c_{\varphi \tau}$	✓	
2L2H	$c_{1,8}^{Qq}$	✓	
	$c_{1,1}^{Qq}$	✓	
	$c_{3,8}^{Qq}$	✓	
	$c_{3,1}^{Qq}$	✓	
	c_{8}^{Qq}	✓	
	c_{1}^{tq}	✓	
	c_{8}^{tq}	✓	
	c_{1}^{tu}	✓	
	c_{8}^{tu}	✓	
	c_{1}^{Qu}	✓	
	c_{8}^{Qu}	✓	
	c_{1}^{td}	✓	
	c_{8}^{td}	✓	
	c_{1}^{Qd}	✓	
	c_{8}^{Qd}	✓	
4H	c_{1}^{QQ}	✓	
	c_{8}^{QQ}	✓	
	c_{1}^{Qt}	✓	
	c_{8}^{Qt}	✓	
	c_{1}^{tt}	✓	
4l	c_{ll}	✓	
B	$c_{\varphi G}$	✓	
	$c_{\varphi B}$	✓	
	$c_{\varphi W}$	✓	
	$c_{\varphi WB}$	✓	
	c_{WWW}	✓	
	$c_{\varphi \square}$	✓	
	$c_{\varphi D}$	✓	
	Number fitted coefficients	50	

Table 1: Coefficient comparison

Type	Datasets	LHC_NLO_QUAD_GLOB
4H	ATLAS_ttbb_13TeV_2016	✓
	ATLAS_tttt_13TeV_run2	✓
	ATLAS_tttt_13TeV_slep_inc	✓
	CMS_ttbb_13TeV	✓
	CMS_ttbb_13TeV_2016	✓
	CMS_ttbb_13TeV_dilepton_inc	✓
	CMS_ttbb_13TeV_ljets_inc	✓
	CMS_tttt_13TeV	✓
	CMS_tttt_13TeV_run2	✓
	CMS_tttt_13TeV_slep_inc	✓
AC	ATLAS_CMS_tt_AC_8TeV	✓
	ATLAS_tt_13TeV_asy_2022	✓
	CMS_tt_13TeV_asy	✓
Hdiff	ATLAS_WH_Hbb_13TeV	✓
	ATLAS_ZH_Hbb_13TeV	✓
	ATLAS_ggF_13TeV_2015	✓
	ATLAS_ggF_ZZ_13TeV	✓
	CMS_H_13TeV_2015_pTH	✓
	CMS_ggF_aa_13TeV	✓
	ATLAS_STXS_runII_13TeV	✓
HrunI	ATLAS_CMS_SSinc_RunI	✓
HrunII	ATLAS_SSinc_RunII	✓
	CMS_SSinc_RunII	✓
LEP	LEP1_EWPOs_2006	✓
	LEP_Bhabha_2013	✓
	LEP_Brw_2013	✓
	LEP_alphaEW	✓
	LEP_eeWW_182GeV	✓
	LEP_eeWW_189GeV	✓
	LEP_eeWW_198GeV	✓
	LEP_eeWW_206GeV	✓
VV	ATLAS_WW_13TeV_2016_memu	✓
	ATLAS_WZ_13TeV_2016_mTWZ	✓
	CMS_WZ_13TeV_2016_pTZ	✓
	CMS_WZ_13TeV_2022_pTZ	✓
WhelF	ATLAS_WhelF_8TeV	✓
	ATLAS_WhelF_13TeV	✓
	CMS_WhelF_8TeV	✓
t13	ATLAS_t_sch_13TeV_inc	✓
	ATLAS_t_tch_13TeV_inc	✓
	CMS_t_tch_13TeV_2016_diff_Yt	✓
	CMS_t_tch_13TeV_2019_diff_Yt	✓
	CMS_t_tch_13TeV_inc	✓
t8	ATLAS_t_sch_8TeV	✓
	ATLAS_t_tch_8TeV_diff_Yt	✓
	CMS_t_sch_8TeV	✓
	CMS_t_tch_8TeV_diff_Yt	✓
	CMS_t_tch_8TeV_inc	✓
tW	ATLAS_tW_13TeV_inc	✓
	ATLAS_tW_8TeV_inc	✓
	ATLAS_tW_slep_8TeV_inc	✓
	CMS_tW_13TeV_inc	✓
	CMS_tW_13TeV_slep_inc	✓
	CMS_tW_8TeV_inc	✓
tZ	ATLAS_tZ_13TeV_inc	✓
	ATLAS_tZ_13TeV_run2_inc	✓
	CMS_tZ_13TeV_2016_inc	✓
	CMS_tZ_13TeV_inc	✓
	CMS_tZ_13TeV_pTt	✓
	ATLAS_tt_13TeV_ljets_2016_Mtt	✓
	CMS_tt_13TeV_Mtt	✓

	CMS_tt_13TeV_dilep_2015_Mtt	✓
	CMS_tt_13TeV_dilep_2016_Mtt	✓
	CMS_tt_13TeV_ljets_2015_Mtt	✓
	CMS_tt_13TeV_ljets_2016_Mtt	✓
	CMS_tt_13TeV_ljets_inc	✓
tt8	ATLAS_tt_8TeV_dilep_Mtt	✓
	ATLAS_tt_8TeV_ljets_Mtt	✓
	CMS_tt2D_8TeV_dilep_MttYtt	✓
	CMS_tt_8TeV_ljets_Ytt	✓
ttW	ATLAS_ttW_13TeV	✓
	ATLAS_ttW_13TeV_2016	✓
	ATLAS_ttW_8TeV	✓
	CMS_ttW_13TeV	✓
	CMS_ttW_8TeV	✓
ttZ	ATLAS_ttZ_13TeV	✓
	ATLAS_ttZ_13TeV_2016	✓
	ATLAS_ttZ_13TeV_pTZ	✓
	ATLAS_ttZ_8TeV	✓
	CMS_ttZ_13TeV	✓
	CMS_ttZ_13TeV_pTZ	✓
	CMS_ttZ_8TeV	✓
tta	ATLAS_tta_8TeV	✓
	CMS_tta_8TeV	✓

Table 1: Dataset comparison

χ^2 table. Blue color text represents a value that is lower than the SM χ^2 by more than one standard deviation of the χ^2 distribution. Similarly, red color text represents values that are higher than the SM χ^2 by more than one standard deviation. In parenthesis is the total SM χ^2 for the dataset included in the fit.

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_ttbb_13TeV_2016	1	0.906	0.604
ATLAS_tttt_13TeV_run2	1	2.352	0.178
ATLAS_tttt_13TeV_slep_inc	1	0.701	0.151
CMS_ttbb_13TeV	1	4.959	6.798
CMS_ttbb_13TeV_2016	1	1.754	3.208
CMS_ttbb_13TeV_dilepton_inc	1	0.962	0.493
CMS_ttbb_13TeV_ljets_inc	1	0.9	0.320
CMS_tttt_13TeV	1	0.055	0.130
CMS_tttt_13TeV_run2	1	0.051	2.506
CMS_tttt_13TeV_slep_inc	1	0.204	0.054
Total			1.444 (1.284)

Table 1: χ^2 table for 4H data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_CMS_tt_AC_8TeV	6	0.861	0.857
ATLAS_tt_13TeV_asy_2022	5	1.011	0.799
CMS_tt_13TeV_asy	3	1.01	0.999
Total			0.866 (0.947)

Table 2: χ^2 table for AC data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_WH_Hbb_13TeV	2	0.1	0.177
ATLAS_ZH_Hbb_13TeV	3	0.496	0.375
ATLAS_ggF_13TeV_2015	9	1.11	1.144
ATLAS_ggF_ZZ_13TeV	6	0.958	0.816
CMS_H_13TeV_2015_pTH	9	0.8	0.720
CMS_ggF_aa_13TeV	6	1.049	1.070
ATLAS_STXS_runII_13TeV	36	0.364	0.421
Total			0.630 (0.620)

Table 3: χ^2 table for Hdiff data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_CMS_SSinc_RunI	22	0.859	0.949
Total			0.949 (0.859)

Table 4: χ^2 table for HrunI data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_SSinc_RunII	16	0.542	0.510
CMS_SSinc_RunII	20	0.853	0.944
Total			0.751 (0.715)

Table 5: χ^2 table for HrunII data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
LEP1_EWPOs_2006	19	1.028	0.736
LEP_Bhabha_2013	21	1.097	1.169
LEP_Brw_2013	3	2.632	3.683
LEP_alphaEW	1	3.966	0.063
LEP_eeWW_182GeV	10	1.38	1.342
LEP_eeWW_189GeV	10	0.885	0.784
LEP_eeWW_198GeV	10	1.609	1.783
LEP_eeWW_206GeV	10	1.085	1.088
Total			1.186 (1.238)

Table 6: χ^2 table for LEP data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_WW_13TeV_2016_memu	13	1.657	1.822
ATLAS_WZ_13TeV_2016_mTWZ	6	1.466	1.363
CMS_WZ_13TeV_2016_pTZ	11	1.424	1.289
CMS_WZ_13TeV_2022_pTZ	11	2.215	1.740
Total			1.590 (1.716)

Table 7: χ^2 table for VV data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_WhelF_8TeV	3	1.967	1.830
ATLAS_Whel_13TeV	2	0.37	0.480
CMS_WhelF_8TeV	3	0.296	0.345
Total			0.936 (0.941)

Table 8: χ^2 table for WhelF data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_t_sch_13TeV_inc	1	0.659	0.128
ATLAS_t_tch_13TeV_inc	2	0.011	0.067
CMS_t_tch_13TeV_2016_diff_Yt	4	0.476	0.537
CMS_t_tch_13TeV_2019_diff_Yt	5	0.58	0.606
CMS_t_tch_13TeV_inc	2	0.345	0.334
Total			0.436 (0.441)

Table 9: χ^2 table for t13 data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_t_sch_8TeV	1	0.085	0.012
ATLAS_t_tch_8TeV_diff_Yt	4	0.89	0.341
CMS_t_sch_8TeV	1	1.239	1.325
CMS_t_tch_8TeV_diff_Yt	6	0.11	0.397
CMS_t_tch_8TeV_inc	2	0.293	0.069
Total			0.373 (0.438)

Table 10: χ^2 table for t8 data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tW_13TeV_inc	1	0.549	0.689
ATLAS_tW_8TeV_inc	1	0.026	0.008
ATLAS_tW_slep_8TeV_inc	1	0.134	0.222
CMS_tW_13TeV_inc	1	3.855	2.687
CMS_tW_13TeV_slep_inc	1	0.926	1.336
CMS_tW_8TeV_inc	1	0.0	0.017
Total			0.827 (0.915)

Table 11: χ^2 table for tW data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tZ_13TeV_inc	1	1.177	0.853
ATLAS_tZ_13TeV_run2_inc	1	0.048	0.488
CMS_tZ_13TeV_2016_inc	1	1.23	0.080
CMS_tZ_13TeV_inc	1	0.678	0.244
CMS_tZ_13TeV_pTt	3	0.0	0.037
Total			0.254 (0.448)

Table 12: χ^2 table for tZ data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tt_13TeV_ljets_2016_Mtt	7	0.986	1.431
CMS_tt_13TeV_Mtt	15	1.588	1.272
CMS_tt_13TeV_dilep_2015_Mtt	6	1.299	1.463
CMS_tt_13TeV_dilep_2016_Mtt	7	2.282	2.106
CMS_tt_13TeV_ljets_2015_Mtt	8	0.939	0.760
CMS_tt_13TeV_ljets_2016_Mtt	10	1.992	1.795
CMS_tt_13TeV_ljets_inc	1	0.218	1.816
Total			1.453 (1.521)

Table 13: χ^2 table for tt13 data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tt_8TeV_dilep_Mtt	6	0.086	0.124
ATLAS_tt_8TeV_ljets_Mtt	7	2.953	3.009
CMS_tt2D_8TeV_dilep_MttYtt	16	1.628	1.149
CMS_tt_8TeV_ljets_Ytt	10	0.906	1.005
Total			1.288 (1.443)

Table 14: χ^2 table for tt8 data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_ttW_13TeV	1	0.828	0.888
ATLAS_ttW_13TeV_2016	1	0.225	0.371
ATLAS_ttW_8TeV	1	1.334	1.538
CMS_ttW_13TeV	1	0.028	0.100
CMS_ttW_8TeV	1	1.781	1.982
Total			0.976 (0.839)

Table 15: χ^2 table for ttW data

		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_ttZ_13TeV	1	0.007	0.029
ATLAS_ttZ_13TeV_2016	1	0.001	0.410
ATLAS_ttZ_13TeV_pTZ	7	2.243	1.928
ATLAS_ttZ_8TeV	1	1.314	0.582
CMS_ttZ_13TeV	1	1.011	2.410
CMS_ttZ_13TeV_pTZ	4	0.732	1.230
CMS_ttZ_8TeV	1	0.042	0.313
Total			1.385 (1.313)

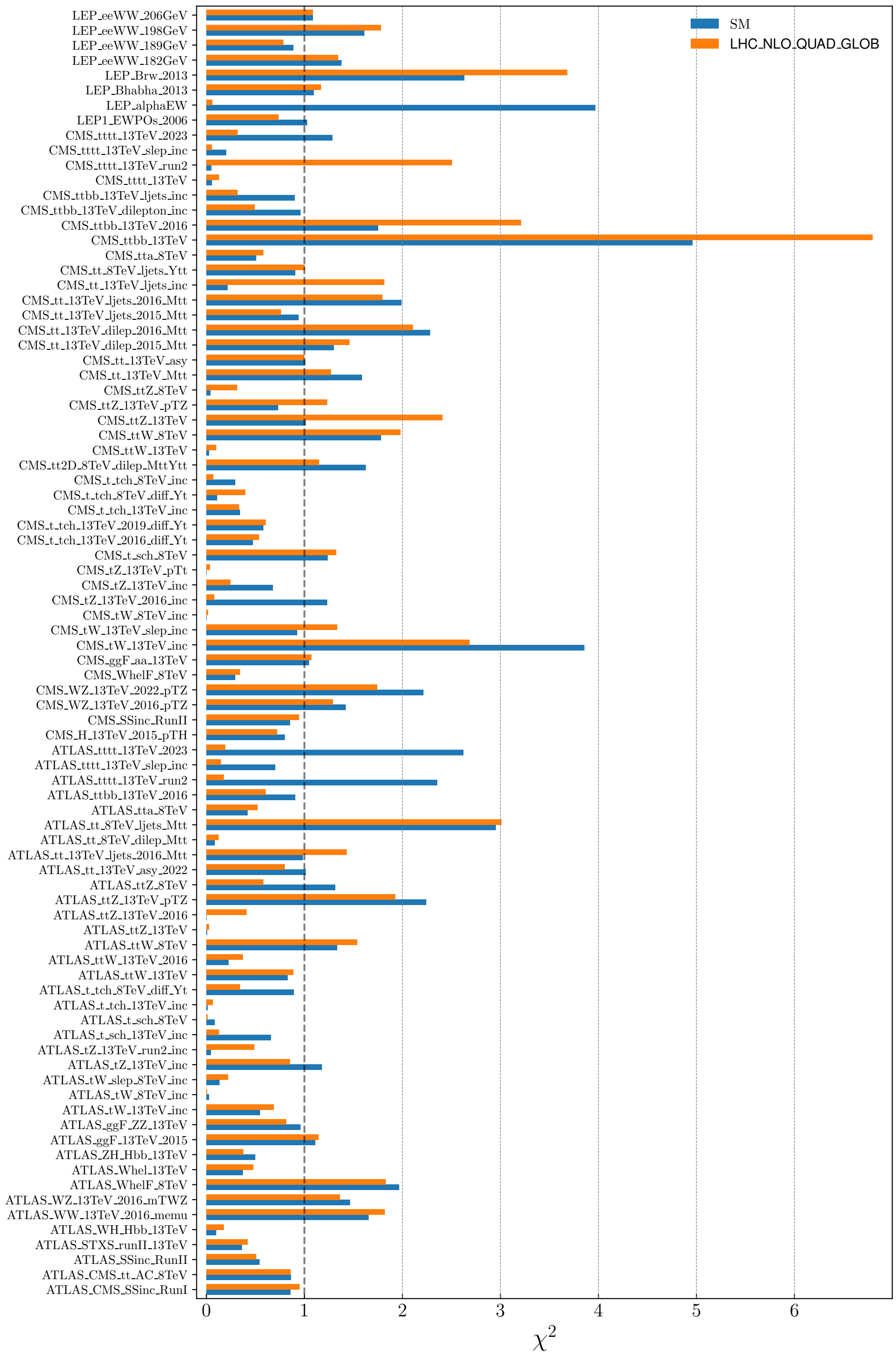
Table 16: χ^2 table for ttZ data

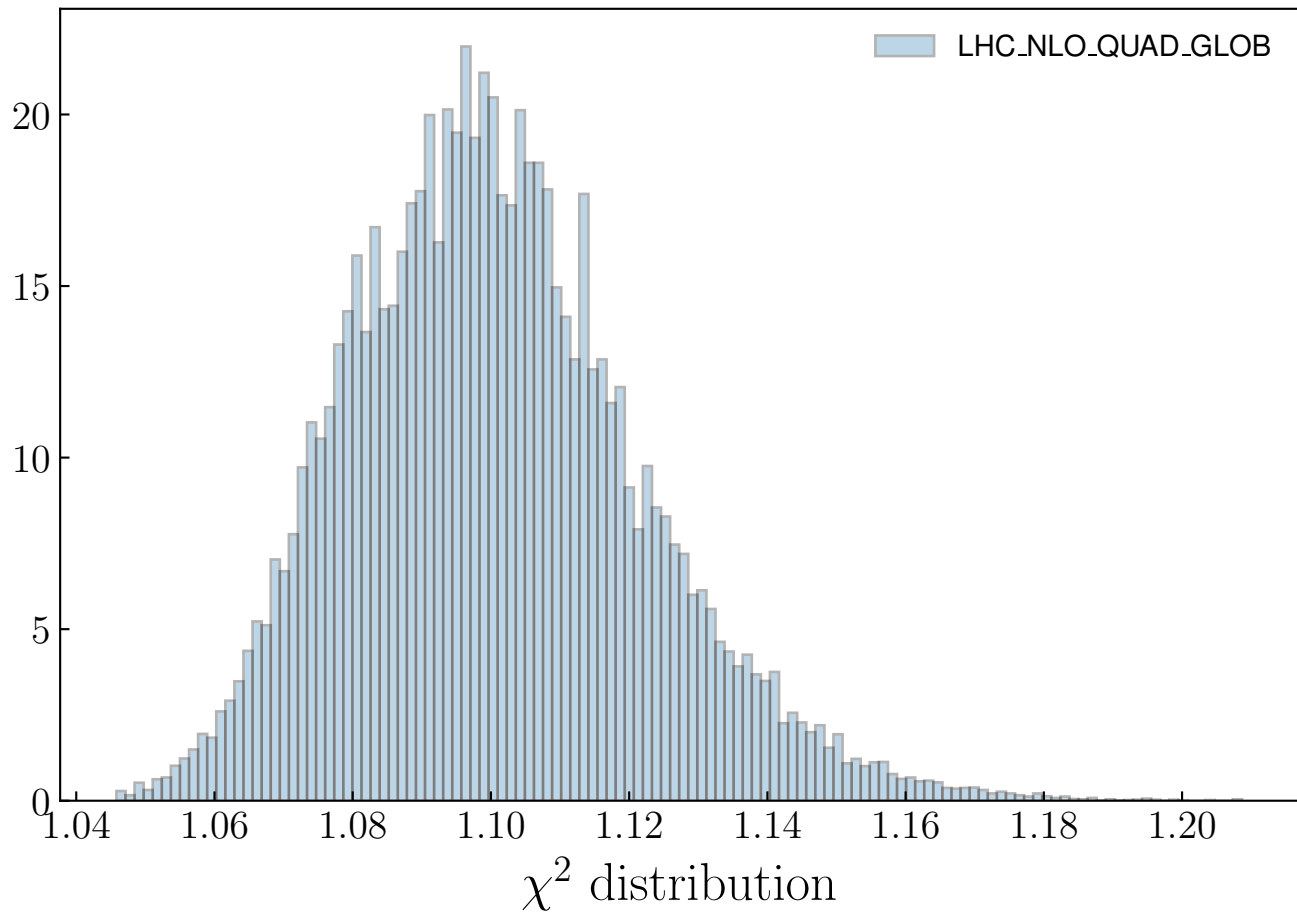
		SM	LHC_NLO_QUAD_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tta_8TeV	1	0.422	0.522
CMS_tta_8TeV	1	0.508	0.580
Total			0.551 (0.465)

Table 17: χ^2 table for tta data

	LHC_NLO_QUAD_GLOB	
Process	N_{data}	χ^2/N_{data}
tt8	39.0	1.288 (1.443)
tt13	54.0	1.453 (1.521)
tta	2.0	0.551 (0.465)
WhelF	8.0	0.936 (0.941)
AC	14.0	0.866 (0.947)
4H	10.0	1.444 (1.284)
ttZ	16.0	1.385 (1.313)
ttW	5.0	0.976 (0.839)
t8	14.0	0.373 (0.438)
t13	14.0	0.436 (0.441)
tW	6.0	0.827 (0.915)
tZ	7.0	0.254 (0.448)
HrunI	22.0	0.949 (0.859)
HrunII	36.0	0.751 (0.715)
Hdiff	71.0	0.630 (0.620)
VV	41.0	1.590 (1.716)
LEP	84.0	1.186 (1.238)
Total	443.0	1.053 (1.088)

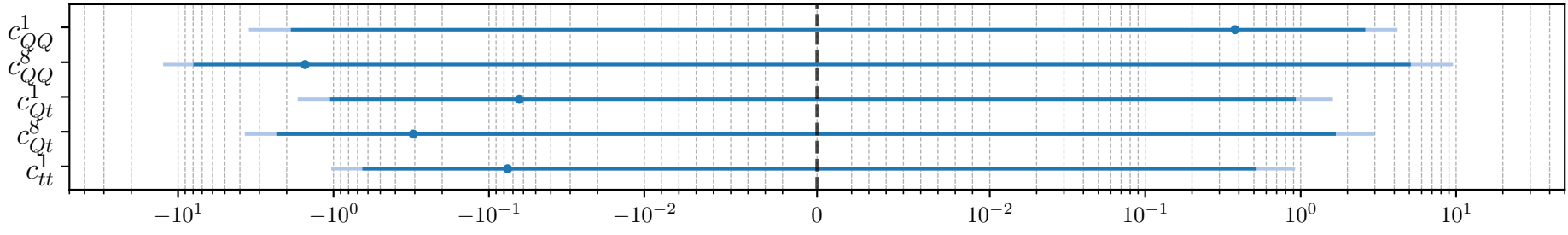
Table 18: χ^2 table for grouped data. In parenthesis is the total SM χ^2 for the dataset included in the fit. The SM column refers to all the datasets available in the group



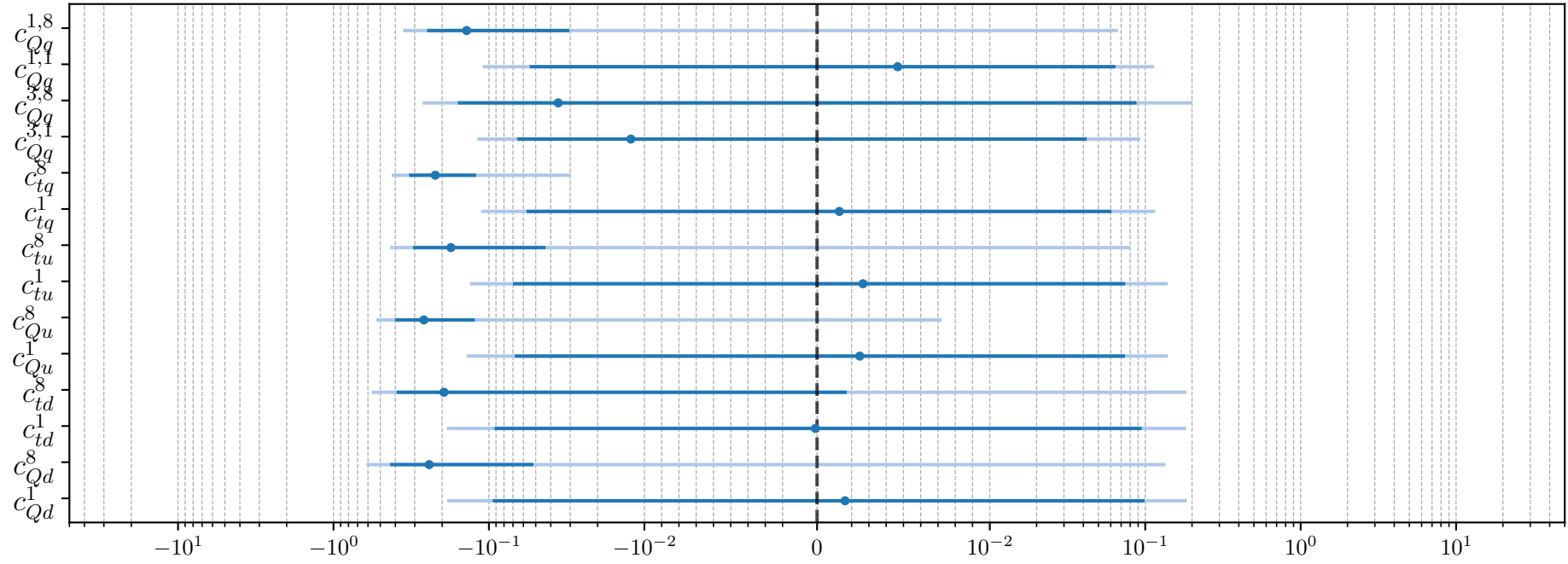


—●— LHC_NLO_QUAD_GLOB

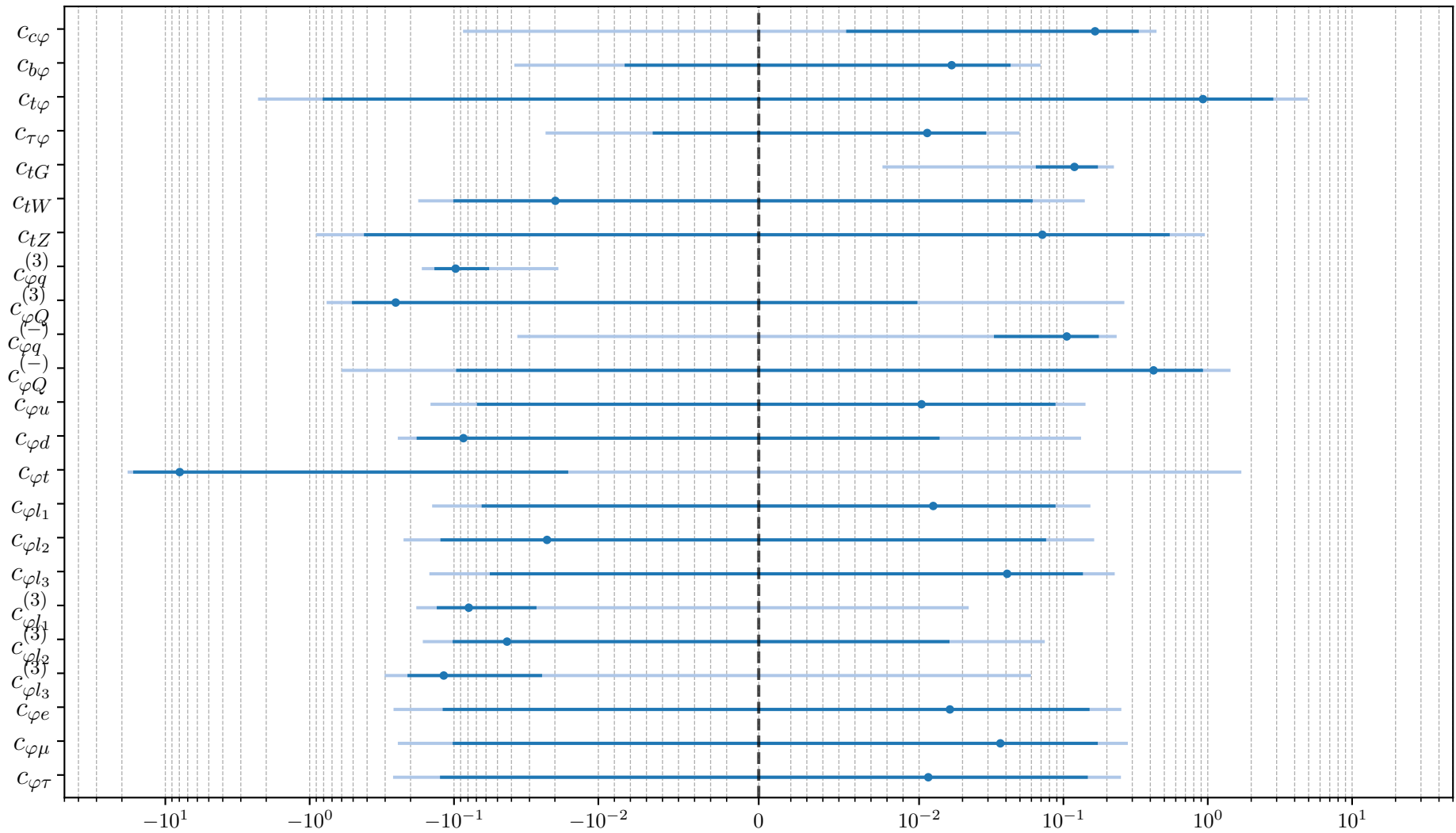
4H



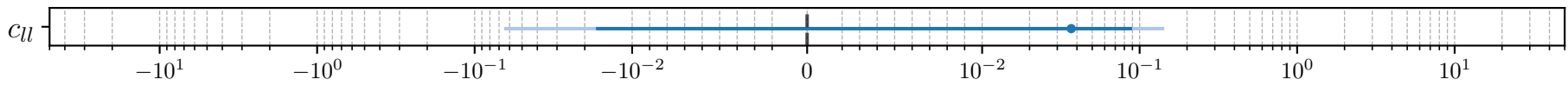
2L2H



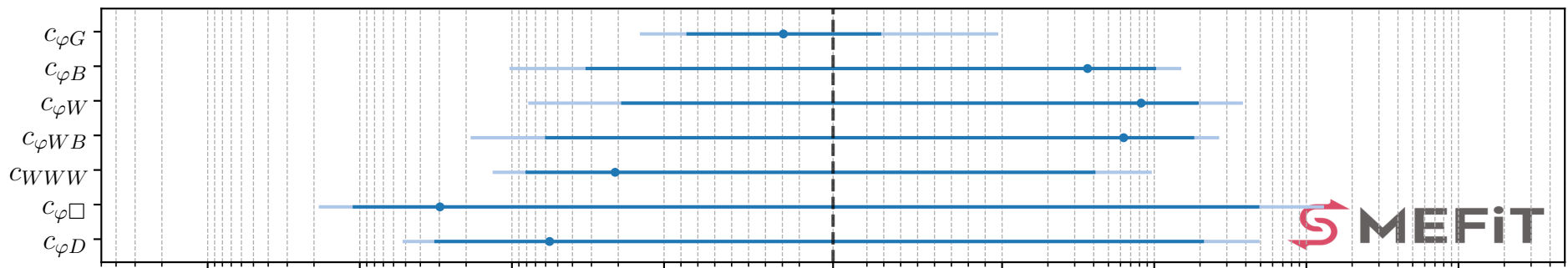
2FB



4l



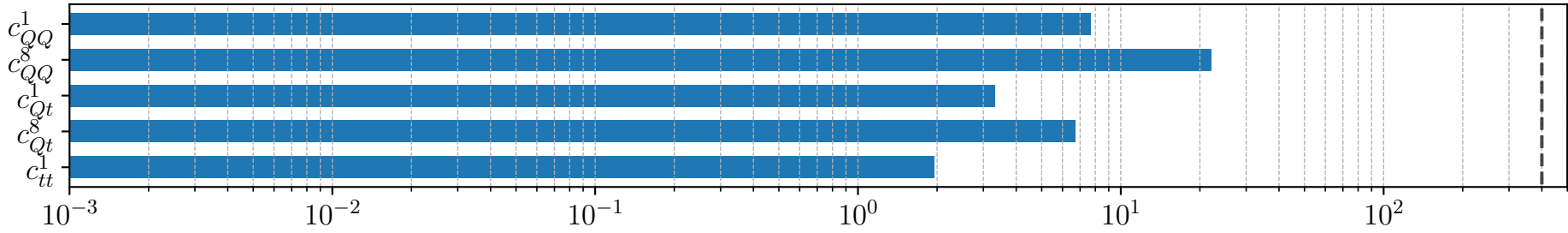
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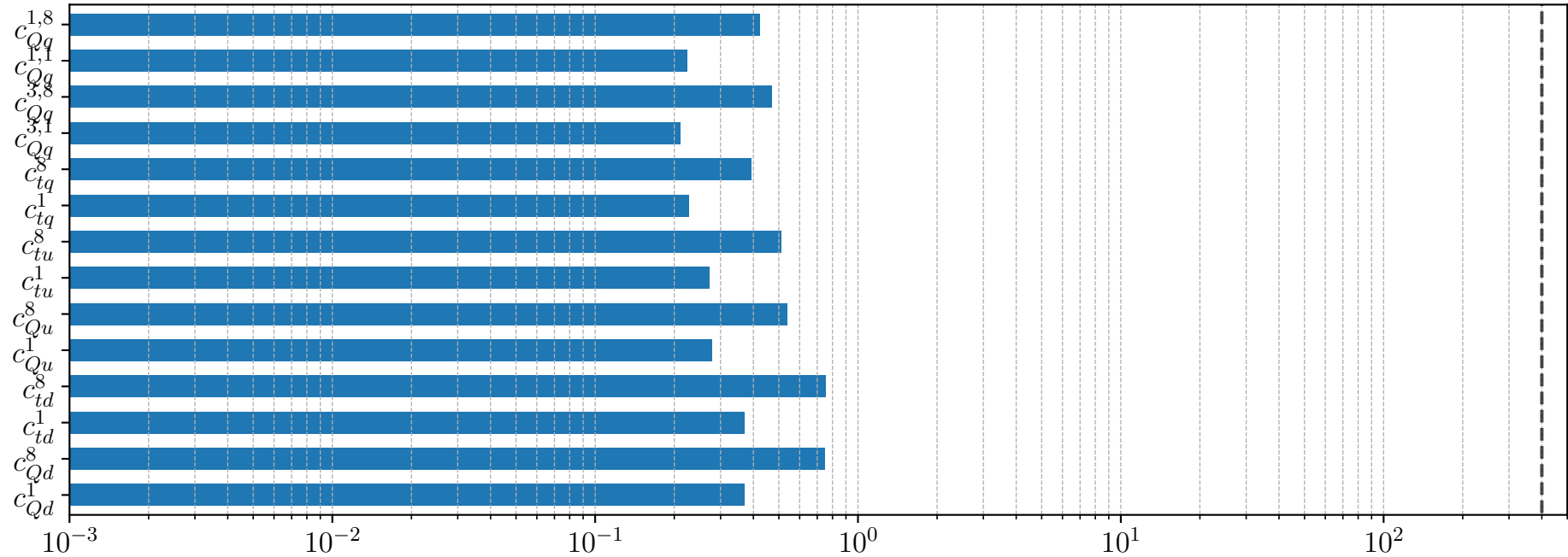
c_i/Λ^2 (TeV $^{-2}$)

LHC_NLO_QUAD_GLOB

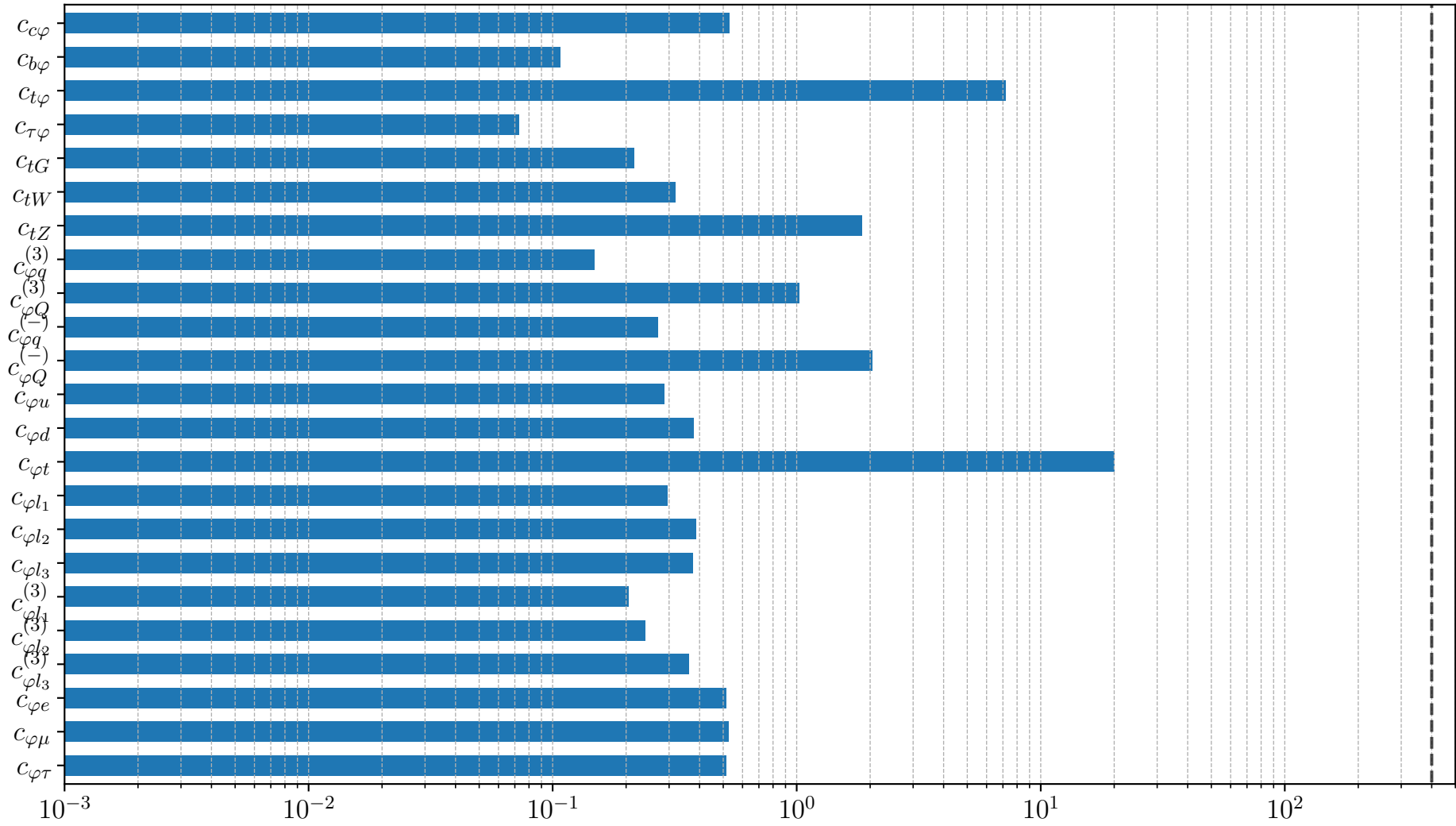
4H



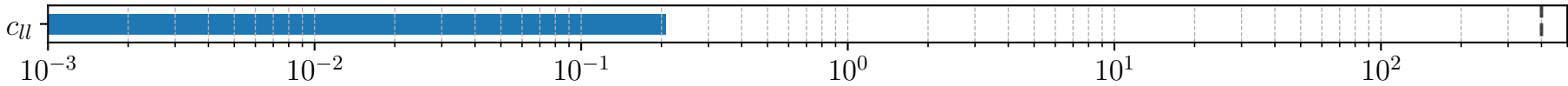
2L2H



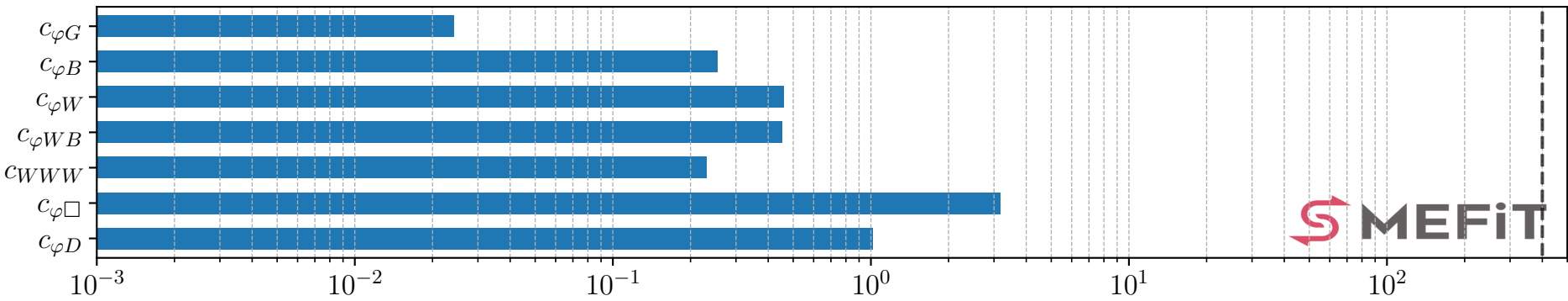
2FB



4l



B



95% Confidence Level Bounds (1/TeV²)

