| | | LHC_NLO_LIN_GLOB | |
Class	Coefficients	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	$c_{Qq}^{1,8}$	✓	
	$c_{Qq}^{1,1}$	✓	
	$c_{Qq}^{3,8}$	✓	
	$c_{Qq}^{3,1}$	✓	
	c_{tq}^{8}	✓	
	c_{tq}^{1}	✓	
	c_{tu}^{8}	✓	
	c_{tu}^{1}	✓	
	c_{Qu}^{8}	✓	
	c_{Qu}^{1}	✓	
	c_{td}^{8}	✓	
	c_{td}^{1}	✓	
	c_{Qd}^{8}	✓	
	c_{Qd}^{1}	✓	
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	45	

Table 1: Coefficient comparison

Type	Datasets	LHC_NLO_LIN_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_Whel_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	✓

tt13

	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.

Process	N_{data}	SM χ^2/N_{data}	LHC_NLO_LIN_GLOB χ^2/N_{data}
ATLAS_ttbb_13TeV_2016	1	0.906	0.805
ATLAS_tttt_13TeV_run2	1	2.352	2.441
ATLAS_tttt_13TeV_slep_inc	1	0.701	0.720
CMS_ttbb_13TeV	1	4.959	5.503
CMS_ttbb_13TeV_2016	1	1.754	2.162
CMS_ttbb_13TeV_dilepton_inc	1	0.962	0.677
CMS_ttbb_13TeV_ljets_inc	1	0.9	0.536
CMS_tttt_13TeV	1	0.055	0.062
CMS_tttt_13TeV_run2	1	0.051	0.036
CMS_tttt_13TeV_slep_inc	1	0.204	0.209
Total			1.315 (1.284)

Table 1: χ^2 table for 4H data

Process	N_{data}	SM χ^2/N_{data}	LHC_NLO_LIN_GLOB χ^2/N_{data}
ATLAS_CMS_tt_AC_8TeV	6	0.861	0.835
ATLAS_tt_13TeV_asy_2022	5	1.011	0.708
CMS_tt_13TeV_asy	3	1.01	0.770
Total			0.776 (0.947)

Table 2: χ^2 table for AC data

Process	N_{data}	SM χ^2/N_{data}	LHC_NLO_LIN_GLOB χ^2/N_{data}
ATLAS_WH_Hbb_13TeV	2	0.1	0.746
ATLAS_ZH_Hbb_13TeV	3	0.496	0.555
ATLAS_ggF_13TeV_2015	9	1.11	1.111
ATLAS_ggF_ZZ_13TeV	6	0.958	0.719
CMS_H_13TeV_2015_pTH	9	0.8	0.768
CMS_ggF_aa_13TeV	6	1.049	1.003
ATLAS_STXS_runII_13TeV	36	0.364	0.387
Total			0.624 (0.620)

Table 3: χ^2 table for Hdiff data

Process	N_{data}	SM χ^2/N_{data}	LHC_NLO_LIN_GLOB χ^2/N_{data}
ATLAS_CMS_SSinc_RunI	22	0.859	1.063
Total			1.063 (0.859)

Table 4: χ^2 table for HrunI data

Process	N_{data}	SM χ^2/N_{data}	LHC_NLO_LIN_GLOB χ^2/N_{data}
ATLAS_SSinc_RunII	16	0.542	0.585
CMS_SSinc_RunII	20	0.853	0.770
Total			0.688 (0.715)

Table 5: χ^2 table for HrunII data

		SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
LEP1_EWPOs_2006	19	1.028	0.613
LEP_Bhabha_2013	21	1.097	1.421
LEP_Brw_2013	3	2.632	2.132
LEP_alphaEW	1	3.966	2.219
LEP_eeWW_182GeV	10	1.38	1.289
LEP_eeWW_189GeV	10	0.885	0.817
LEP_eeWW_198GeV	10	1.609	1.919
LEP_eeWW_206GeV	10	1.085	1.037
Total			1.199 (1.238)

Table 6: χ^2 table for LEP data

		SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_WW_13TeV_2016_memu	13	1.657	1.644
ATLAS_WZ_13TeV_2016_mTWZ	6	1.466	1.386
CMS_WZ_13TeV_2016_pTZ	11	1.424	1.204
CMS_WZ_13TeV_2022_pTZ	11	2.215	1.554
Total			1.464 (1.716)

Table 7: χ^2 table for VV data

		SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_WhelF_8TeV	3	1.967	2.286
ATLAS_Whel_13TeV	2	0.37	0.191
CMS_WhelF_8TeV	3	0.296	0.208
Total			0.983 (0.941)

Table 8: χ^2 table for WhelF data

		SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_t_sch_13TeV_inc	1	0.659	0.826
ATLAS_t_tch_13TeV_inc	2	0.011	0.008
CMS_t_tch_13TeV_2016_diff_Yt	4	0.476	0.475
CMS_t_tch_13TeV_2019_diff_Yt	5	0.58	0.576
CMS_t_tch_13TeV_inc	2	0.345	0.257
Total			0.438 (0.441)

Table 9: χ^2 table for t13 data

		SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_t_sch_8TeV	1	0.085	0.004
ATLAS_t_tch_8TeV_diff_Yt	4	0.89	0.868
CMS_t_sch_8TeV	1	1.239	1.349
CMS_t_tch_8TeV_diff_Yt	6	0.11	0.136
CMS_t_tch_8TeV_inc	2	0.293	0.205
Total			0.433 (0.438)

Table 10: χ^2 table for t8 data

	SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tW_13TeV_inc	1	0.549	0.831
ATLAS_tW_8TeV_inc	1	0.026	0.069
ATLAS_tW_slep_8TeV_inc	1	0.134	0.318
CMS_tW_13TeV_inc	1	3.855	1.702
CMS_tW_13TeV_slep_inc	1	0.926	1.758
CMS_tW_8TeV_inc	1	0.0	0.062
Total			0.790 (0.915)

Table 11: χ^2 table for tW data

	SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tZ_13TeV_inc	1	1.177	1.229
ATLAS_tZ_13TeV_run2_inc	1	0.048	0.054
CMS_tZ_13TeV_2016_inc	1	1.23	0.495
CMS_tZ_13TeV_inc	1	0.678	0.438
CMS_tZ_13TeV_pTt	3	0.0	0.049
Total			0.337 (0.448)

Table 12: χ^2 table for tZ data

	SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tt_13TeV_ljets_2016_Mtt	7	0.986	1.358
CMS_tt_13TeV_Mtt	15	1.588	1.091
CMS_tt_13TeV_dilep_2015_Mtt	6	1.299	1.492
CMS_tt_13TeV_dilep_2016_Mtt	7	2.282	2.197
CMS_tt_13TeV_ljets_2015_Mtt	8	0.939	0.806
CMS_tt_13TeV_ljets_2016_Mtt	10	1.992	1.935
CMS_tt_13TeV_ljets_inc	1	0.218	1.681
Total			1.439 (1.521)

Table 13: χ^2 table for tt13 data

	SM	LHC_NLO_LIN_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	3.112
CMS_tt2D_8TeV_dilep_MttYtt	16	1.628	1.020
CMS_tt_8TeV_ljets_Ytt	10	0.906	0.971
Total			1.245 (1.443)

Table 14: χ^2 table for tt8 data

	SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_ttW_13TeV	1	0.828	0.547
ATLAS_ttW_13TeV_2016	1	0.225	0.053
ATLAS_ttW_8TeV	1	1.334	0.469
CMS_ttW_13TeV	1	0.028	0.369
CMS_ttW_8TeV	1	1.781	0.867
Total			0.461 (0.839)

Table 15: χ^2 table for ttW data

		SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_ttZ_13TeV	1	0.007	0.001
ATLAS_ttZ_13TeV_2016	1	0.001	0.021
ATLAS_ttZ_13TeV_pTZ	7	2.243	2.251
ATLAS_ttZ_8TeV	1	1.314	1.490
CMS_ttZ_13TeV	1	1.011	1.219
CMS_ttZ_13TeV_pTZ	4	0.732	0.653
CMS_ttZ_8TeV	1	0.042	0.018
Total			1.320 (1.313)

Table 16: χ^2 table for ttZ data

		SM	LHC_NLO_LIN_GLOB
Process	N_{data}	χ^2/N_{data}	χ^2/N_{data}
ATLAS_tta_8TeV	1	0.422	0.298
CMS_tta_8TeV	1	0.508	0.008
Total			0.153 (0.465)

Table 17: χ^2 table for tta data

	LHC_NLO_LIN_GLOB	
Process	N_{data}	χ^2/N_{data}
tt8	39.0	1.245 (1.443)
tt13	54.0	1.439 (1.521)
tta	2.0	0.153 (0.465)
WhelF	8.0	0.983 (0.941)
AC	14.0	0.776 (0.947)
4H	10.0	1.315 (1.284)
ttZ	16.0	1.320 (1.313)
ttW	5.0	0.461 (0.839)
t8	14.0	0.433 (0.438)
t13	14.0	0.438 (0.441)
tW	6.0	0.790 (0.915)
tZ	7.0	0.337 (0.448)
HrunI	22.0	1.063 (0.859)
HrunII	36.0	0.688 (0.715)
Hdiff	71.0	0.624 (0.620)
VV	41.0	1.464 (1.716)
LEP	84.0	1.199 (1.238)
Total	443.0	1.026 (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
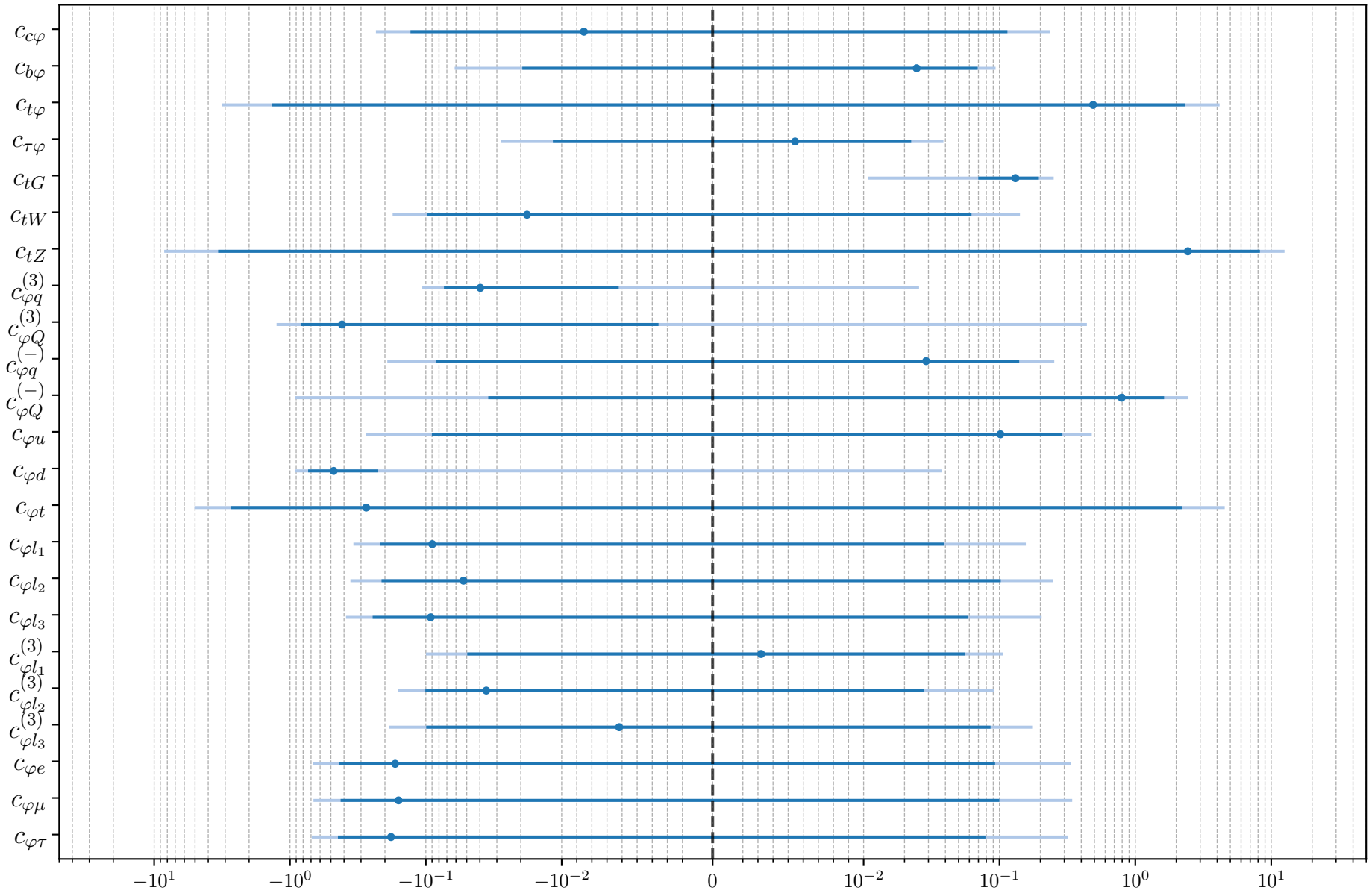
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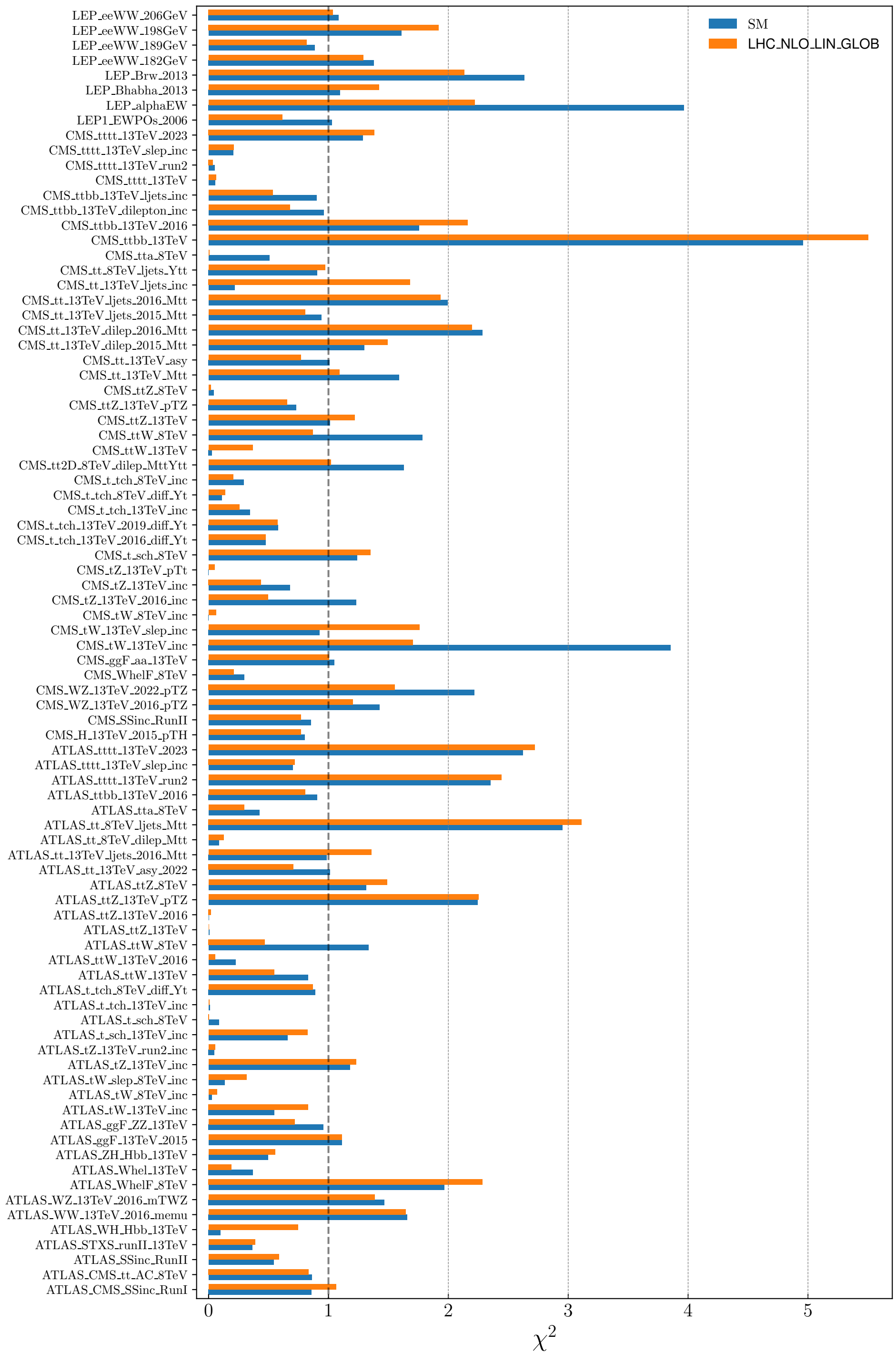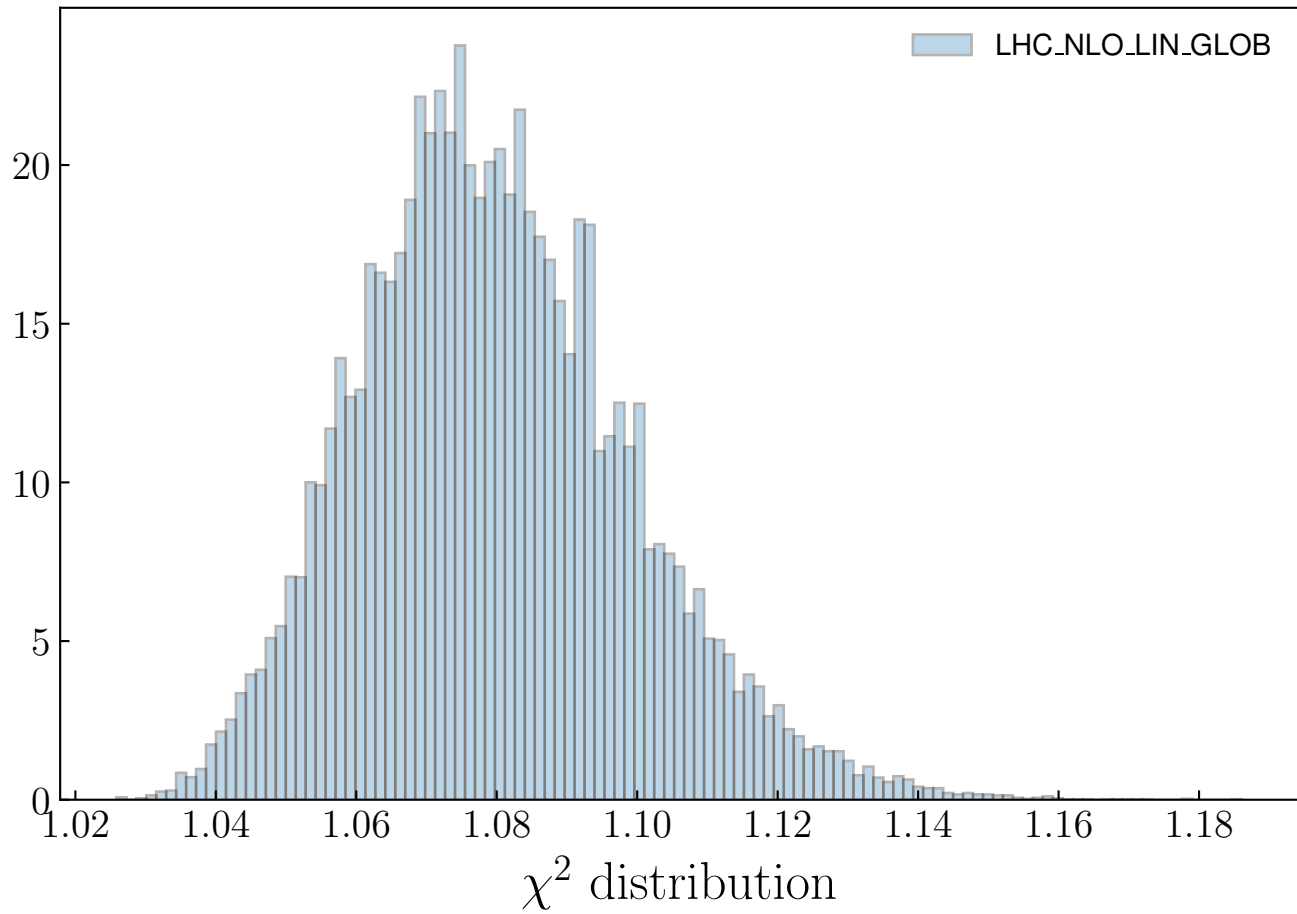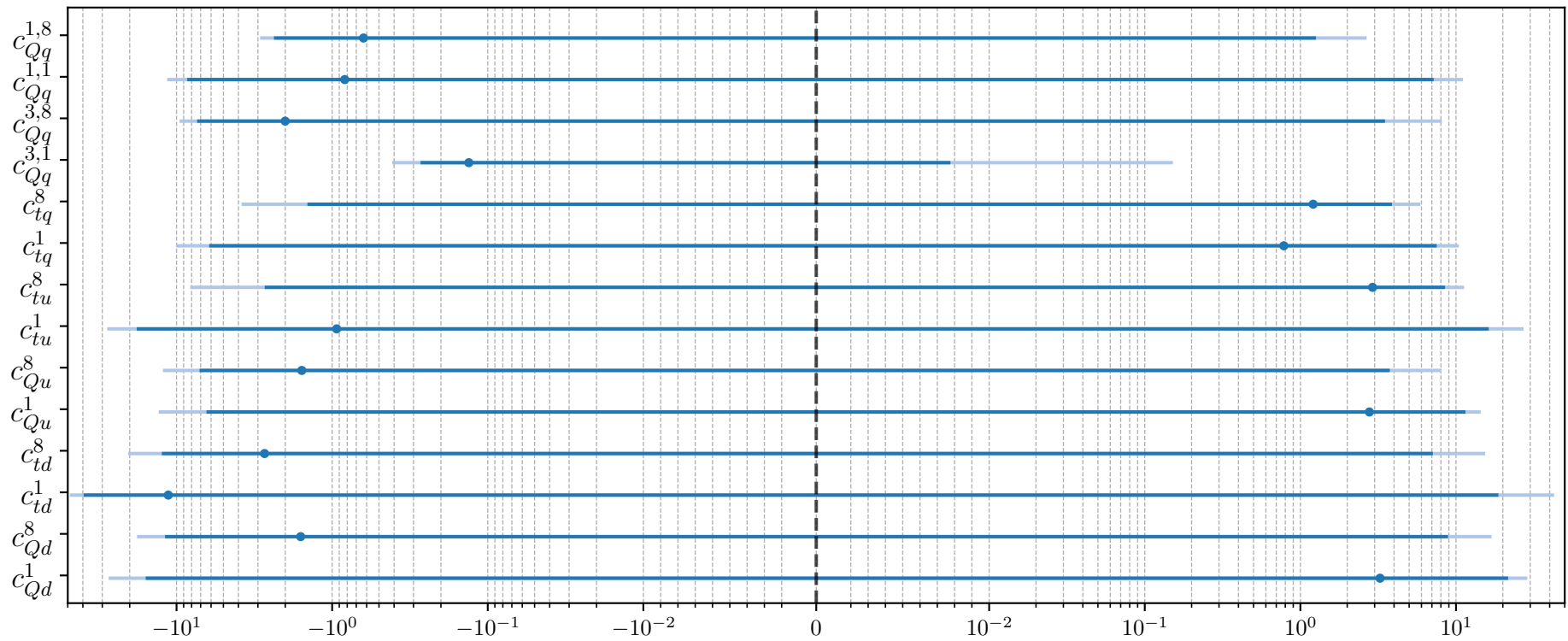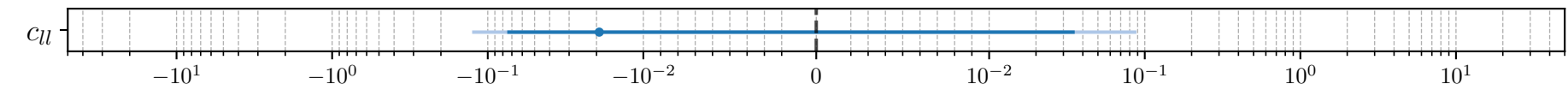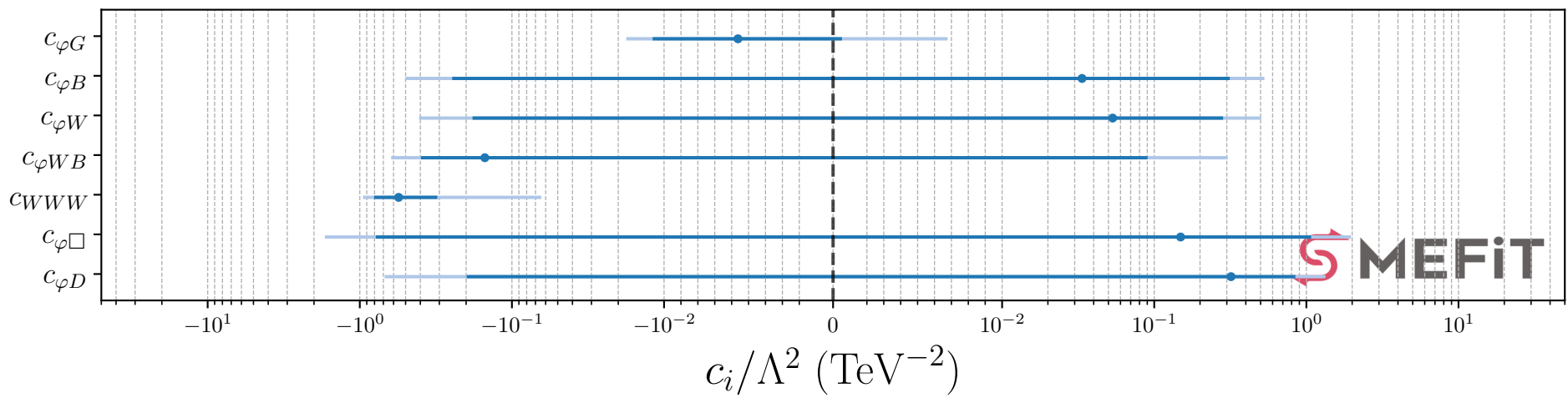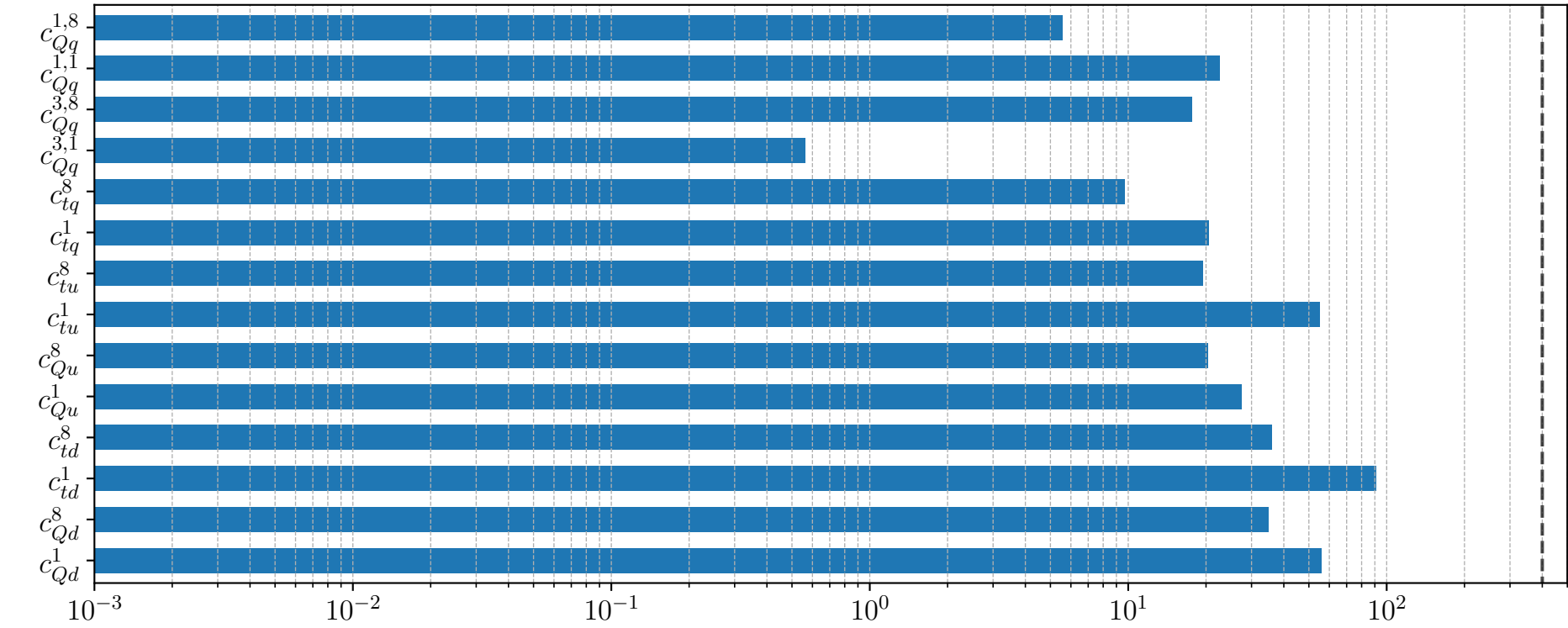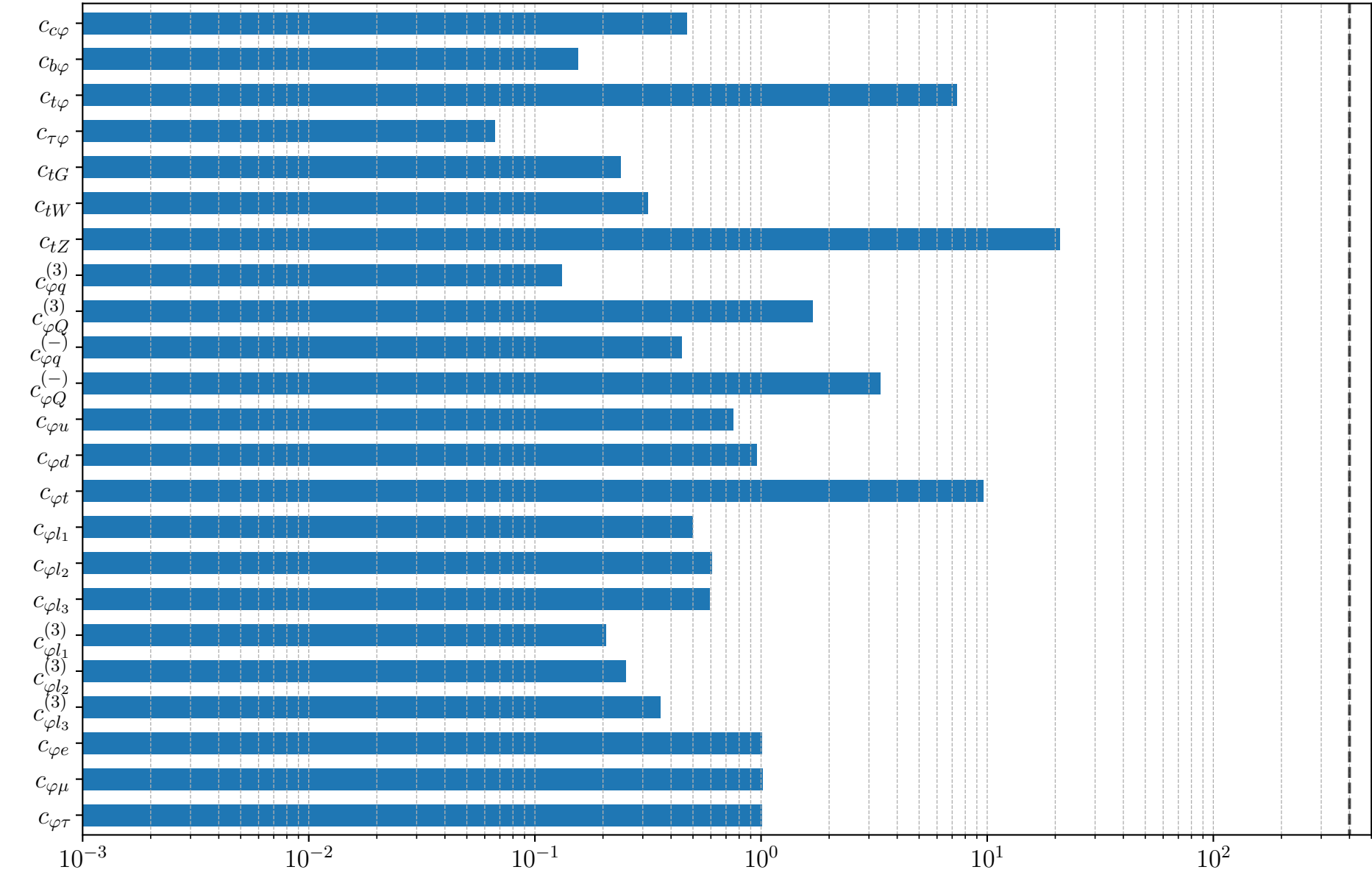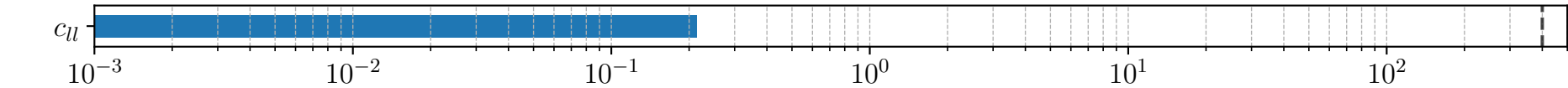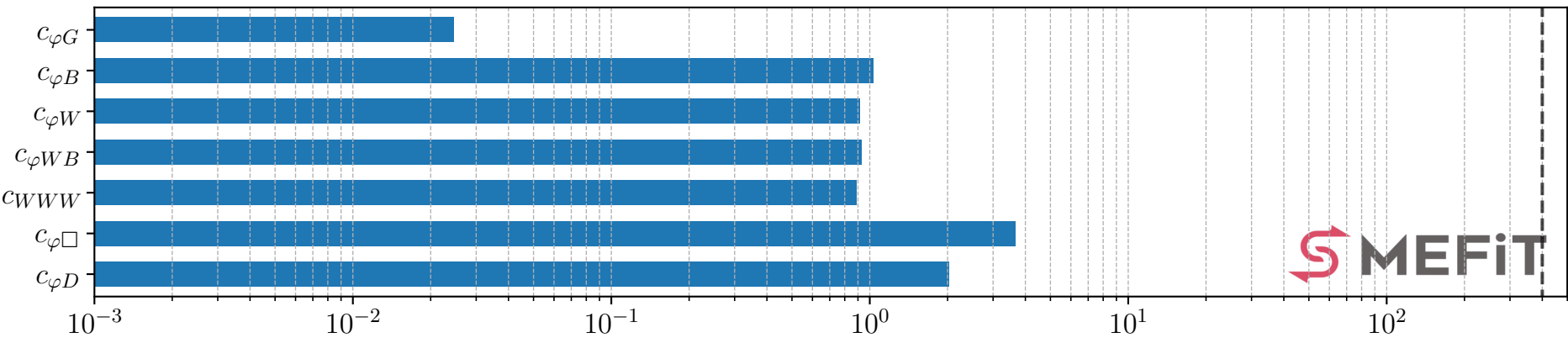
95% Confidence Level Bounds (1/TeV^2)