		HL-LHC		ILC: 250 + 500 GeV		ILC: 91 + 250 + 350 + 500 + 1000 GeV	
Class	Coefficients	Fitted	Fixed	Fitted	Fixed	Fitted	Fixed
2FB	$c_{c\varphi}$	✓		✓		✓	
	$c_{b\varphi}$	✓		✓		✓	
	$c_{t\varphi}$	✓		✓		✓	
	$c_{\tau\varphi}$	✓		✓		✓	
	c_{tG}	✓		✓		✓	
	c_{tW}	✓		✓		✓	
	c_{tZ}	✓		✓		✓	
	$c_{\varphi q}^{(3)}$	✓		✓		✓	
	$c_{\varphi Q}^{(3)}$	✓		✓		✓	
	$c_{\varphi q}^{(-)}$	✓		✓		✓	
	$c_{\varphi Q}^{(-)}$	✓		✓		✓	
	$c_{\varphi u}$	✓		✓		✓	
	$c_{\varphi d}$	✓		✓		✓	
	$c_{\varphi t}$	✓		✓		✓	
	$c_{\varphi l_1}$	✓		✓		✓	
	$c_{\varphi l_2}$	✓		✓		✓	
	$c_{\varphi l_3}$	✓		✓		✓	
	$c_{\varphi l_1}^{(3)}$	✓		✓		✓	
	$c_{\varphi l_2}^{(3)}$	✓		✓		✓	
	$c_{\varphi l_3}^{(3)}$	✓		✓		✓	
	$c_{\varphi e}$	✓		✓		✓	
	$c_{\varphi \mu}$	✓		✓		✓	
	$c_{\varphi \tau}$	✓		✓		✓	
4l	c_{ll}	✓		✓		✓	
B	$c_{\varphi G}$	✓		✓		✓	
	$c_{\varphi B}$	✓		✓		✓	
	$c_{\varphi W}$	✓		✓		✓	
	$c_{\varphi WB}$	✓		✓		✓	
	c_{WWW}	✓		✓		✓	
	$c_{\varphi \Box}$	✓		✓		✓	
	$c_{\varphi D}$	✓		✓		✓	
	Number fitted coefficients	31		31		31	

Table 1: Coefficient comparison

Type	Datasets	HL-LHC	ILC: 250 + 500 GeV	ILC: 91 + 250 + 350 + 500 + 1000 GeV
4H	ATLAS_ttbb_13TeV_2016	✓	✓	✓
	ATLAS_tttt_13TeV_run2	✓	✓	✓
	ATLAS_tttt_13TeV_slep_inc	✓	✓	✓
	ATLAS_tttt_13TeV_2023	✓	✓	✓
	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	✓	✓	✓
	CMS_tttt_13TeV_2023	✓	✓	✓
HrunI	ATLAS_CMS_SSinc_RunI	✓	✓	✓
	ATLAS_SSinc_RunII	✓	✓	✓
	CMS_SSinc_RunII	✓	✓	✓
	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	✓	✓	✓
LEP	LEP1_EWPOs_2006	✓	✓	✓
	LEP_Bhabha_2013	✓	✓	✓
	LEP_Brw_2013	✓	✓	✓
	LEP_alphaEW	✓	✓	✓
VV	ATLAS_WW_13TeV_2016_memu	✓	✓	✓
	ATLAS_WZ_13TeV_2016_mTWZ	✓	✓	✓
	CMS_WZ_13TeV_2016_pTZ	✓	✓	✓
	CMS_WZ_13TeV_2022_pTZ	✓	✓	✓
	LEP_eeWW_182GeV	✓	✓	✓
	LEP_eeWW_189GeV	✓	✓	✓
	LEP_eeWW_198GeV	✓	✓	✓
	LEP_eeWW_206GeV	✓	✓	✓
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	✓	✓	✓
	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	✓	✓	✓
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	✓	✓	✓
	ATLAS_tZ_13TeV_inc	✓	✓	✓
	ATLAS_tZ_13TeV_run2_inc	✓	✓	✓
	CMS_tZ_13TeV_2016_inc	✓	✓	✓
	CMS_tZ_13TeV_inc	✓	✓	✓
	CMS_tZ_13TeV_pTt	✓	✓	✓
tt	ATLAS_tt_8TeV_dilep_Mtt	✓	✓	✓
	ATLAS_tt_8TeV_ljets_Mtt	✓	✓	✓
	CMS_tt2D_8TeV_dilep_MttYtt	✓	✓	✓
	CMS_tt_8TeV_ljets_Ytt	✓	✓	✓
	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	✓	✓	✓
	ATLAS_WhelF_8TeV	✓	✓	✓
	ATLAS_Whel_13TeV	✓	✓	✓
	CMS_WhelF_8TeV	✓	✓	✓
	ATLAS_CMS_tt_AC_8TeV	✓	✓	✓
	ATLAS_tt_13TeV_asy_2022	✓	✓	✓
	CMS_tt_13TeV_asy	✓	✓	✓
ttV	ATLAS_ttZ_13TeV	✓	✓	✓
	ATLAS_ttZ_13TeV_2016	✓	✓	✓
	ATLAS_ttZ_13TeV_pTZ	✓	✓	✓
	ATLAS_ttZ_8TeV	✓	✓	✓
	CMS_ttZ_13TeV	✓	✓	✓
	CMS_ttZ_13TeV_pTZ	✓	✓	✓
	CMS_ttZ_8TeV	✓	✓	✓
	ATLAS_ttW_13TeV	✓	✓	✓
	ATLAS_ttW_13TeV_2016	✓	✓	✓
	ATLAS_ttW_8TeV	✓	✓	✓
	CMS_ttW_13TeV	✓	✓	✓
	CMS_ttW_8TeV	✓	✓	✓
tta	ATLAS_tta_8TeV	✓	✓	✓
	CMS_tta_8TeV	✓	✓	✓

Table 1: Dataset comparison

2FB

HL-LHC
ILC: 250 + 500 GeV
ILC: 91 + 250 + 350 + 500 + 1000 GeV

$c_{\varphi\tau}$
$c_{\varphi\mu}$
$c_{\varphi e}$
$c^{(3)}_{\varphi l_3}$
$c^{(3)}_{\varphi l_2}$
$c^{(3)}_{\varphi l_1}$
$c_{\varphi l_3}$
$c_{\varphi l_2}$
$c_{\varphi l_1}$
$c_{\varphi t}$
$c_{\varphi d}$
$c_{\varphi u}$
$c^{(-)}_{\varphi Q}$
$c^{(-)}_{\varphi q}$
$c^{(3)}_{\varphi Q}$
$c^{(3)}_{\varphi q}$
c_{tZ}
c_{tW}
c_{tG}
$c_{\tau\varphi}$
$c_{t\varphi}$
$c_{b\varphi}$
$c_{c\varphi}$

-10^2 -10^1 -10^0 -10^{-1} -10^{-2} 0 10^{-2} 10^{-1} 10^0 10^1 10^2

4l

c_{ll}

-10^2 -10^1 -10^0 -10^{-1} -10^{-2} 0 10^{-2} 10^{-1} 10^0 10^1 10^2

B

$c_{\varphi D}$
$c_{\varphi\Box}$
c_{WWW}
$c_{\varphi WB}$
$c_{\varphi W}$
$c_{\varphi B}$
$c_{\varphi G}$

-10^2 -10^1 -10^0 -10^{-1} -10^{-2} 0 10^{-2} 10^{-1} 10^0 10^1 10^2

SMEFiT

c_i/Λ^2 (TeV^{-2})

2FB

HL-LHC
ILC: 250 + 500 GeV
ILC: 91 + 250 + 350 + 500 + 1000 GeV

$c_{\varphi\tau}$
$c_{\varphi\mu}$
$c_{\varphi e}$
$c^{(3)}_{\varphi l_3}$
$c^{(3)}_{\varphi l_2}$
$c^{(3)}_{\varphi l_1}$
$c_{\varphi l_3}$
$c_{\varphi l_2}$
$c_{\varphi l_1}$
$c_{\varphi t}$
$c_{\varphi d}$
$c_{\varphi u}$
$c^{(-)}_{\varphi Q}$
$c^{(-)}_{\varphi q}$
$c^{(3)}_{\varphi Q}$
$c^{(3)}_{\varphi q}$
c_{tZ}
c_{tW}
c_{tG}
$c_{\tau\varphi}$
$c_{t\varphi}$
$c_{b\varphi}$
$c_{c\varphi}$

10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2}

4l

c_{ll}

10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2}

B

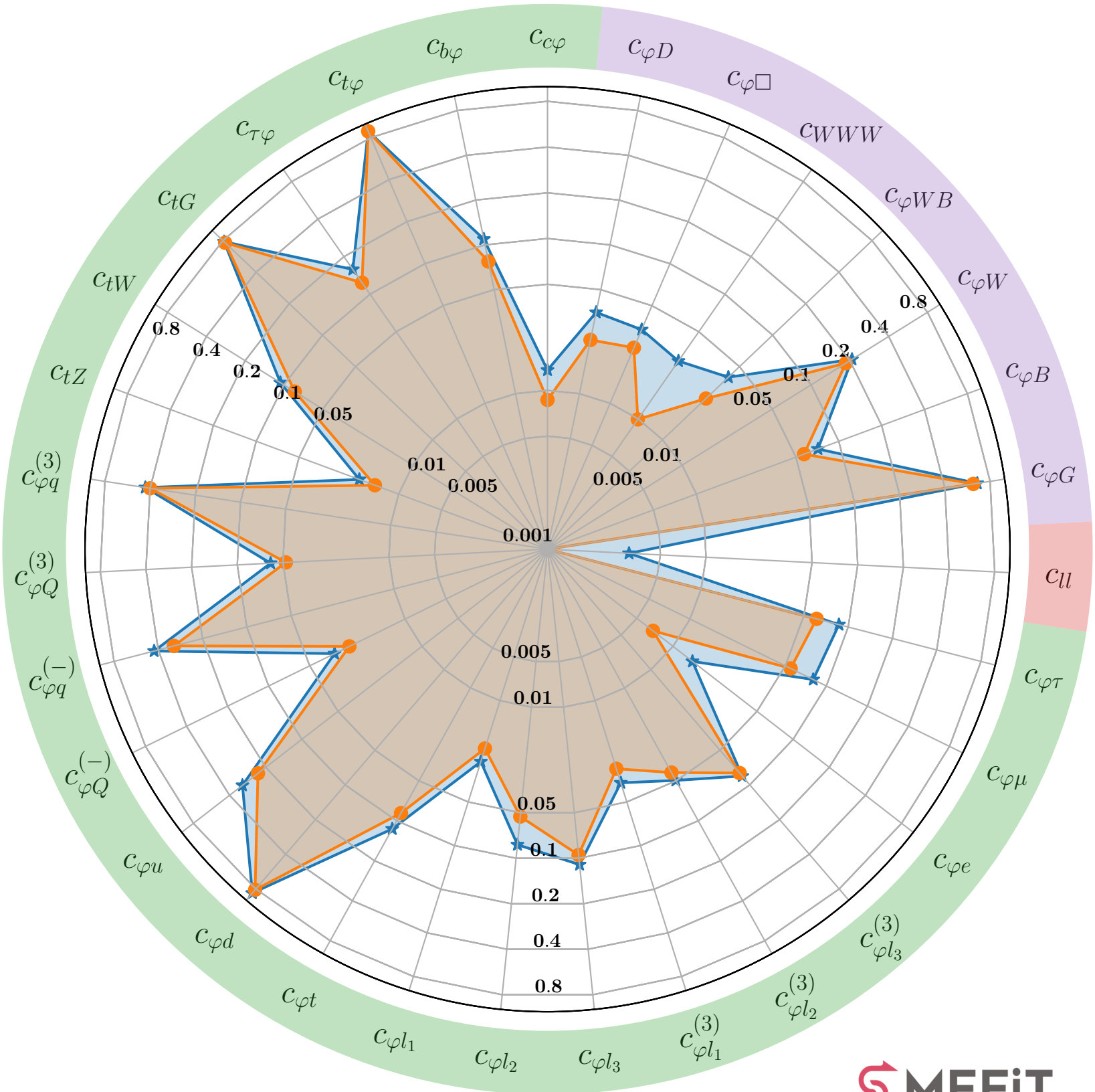
$c_{\varphi D}$
$c_{\varphi\Box}$
c_{WWW}
$c_{\varphi WB}$
$c_{\varphi W}$
$c_{\varphi B}$
$c_{\varphi G}$

10^{-4} 10^{-3} 10^{-2} 10^{-1} 10^{0} 10^{1} 10^{2}

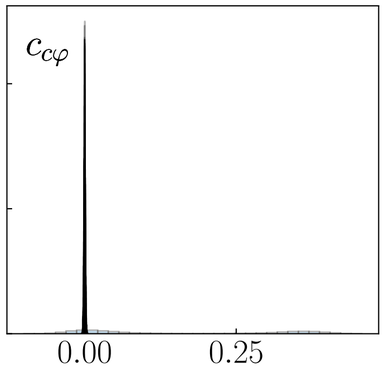
SMEFiT

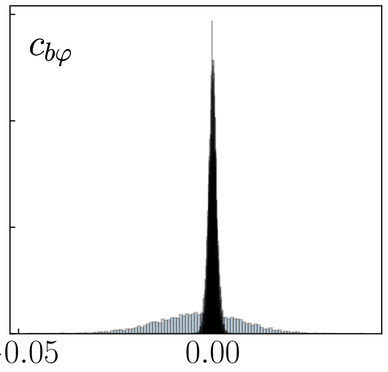
95% Confidence Level Bounds ($1/\text{TeV}^2$)

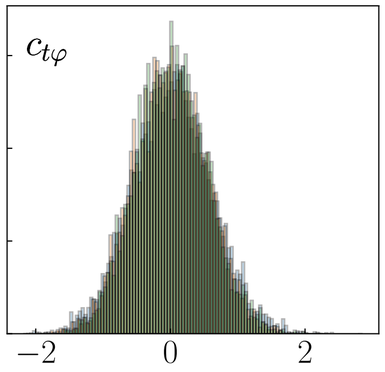
Ratio of Uncertainties to HL − LHC Baseline, $\mathcal{O}\left(\Lambda^{-4}\right)$, Marginalised

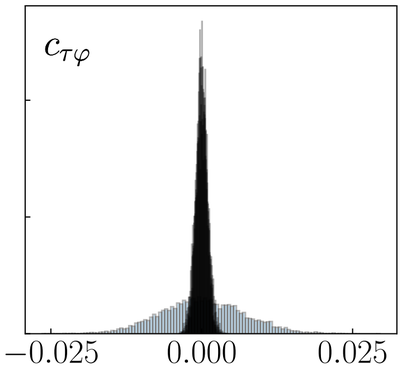


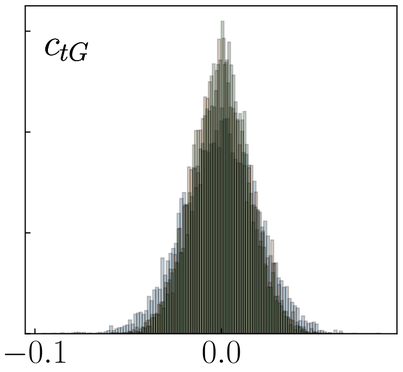
HL-LHC ILC: 250 + 500 GeV ILC: 91 + 250 + 350 + 500 + 1000 GeV

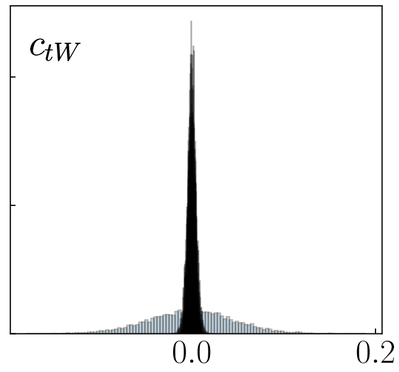


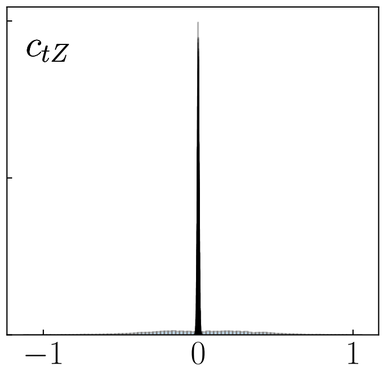


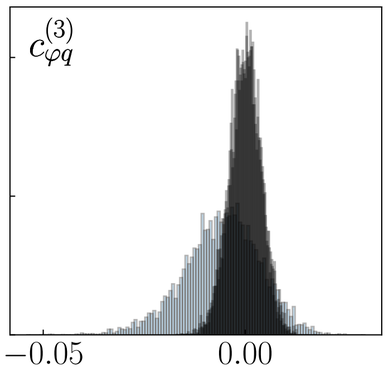


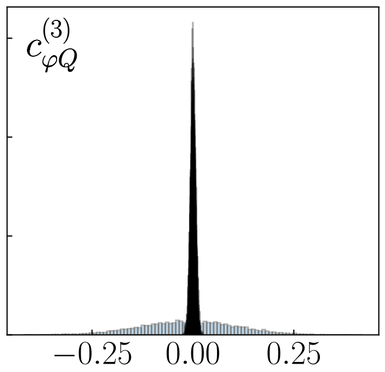


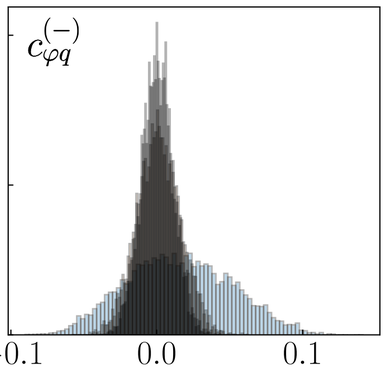


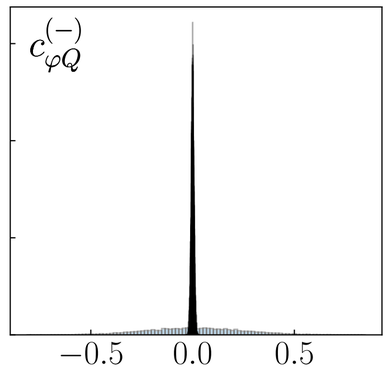


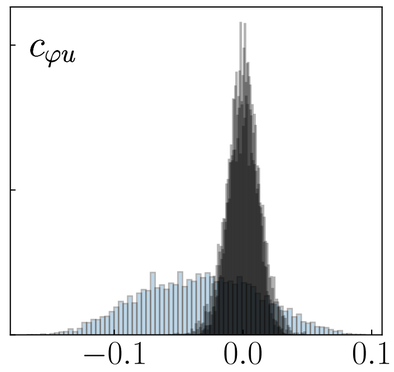


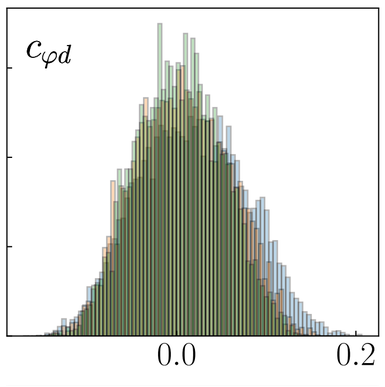


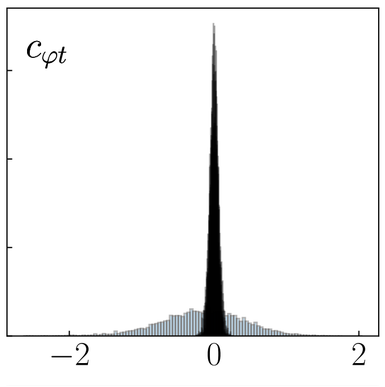


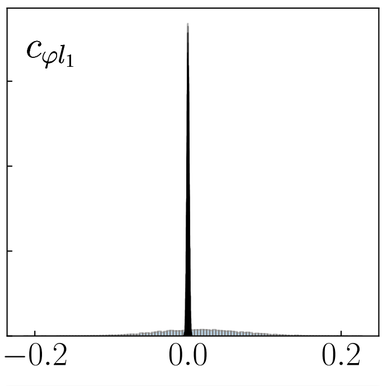


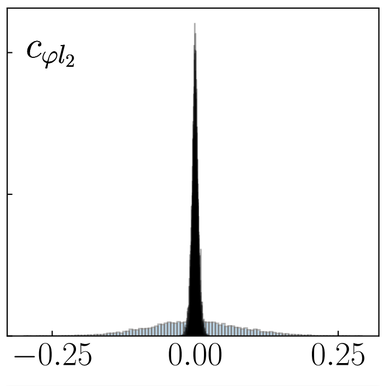


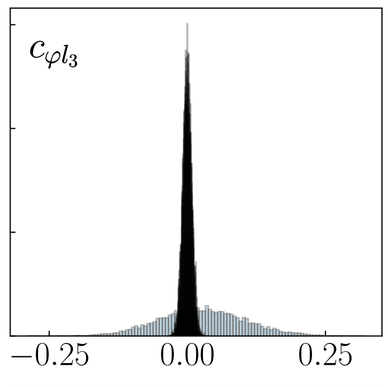


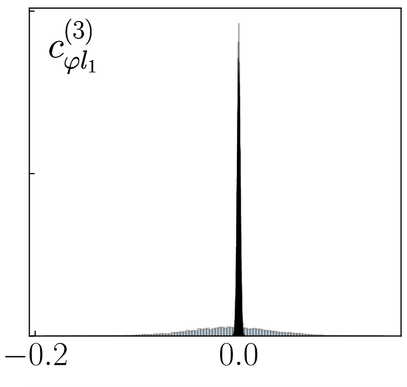


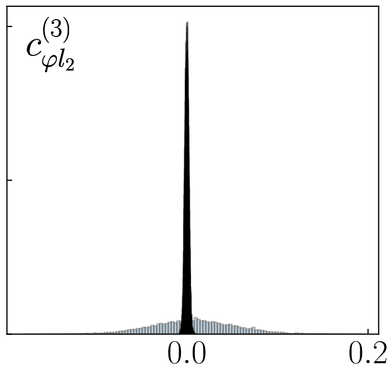


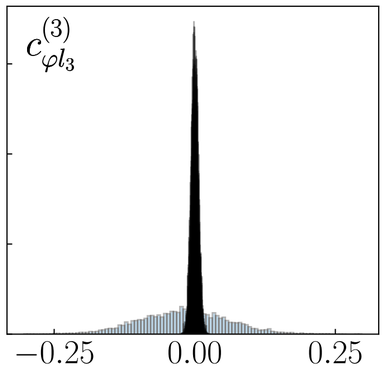


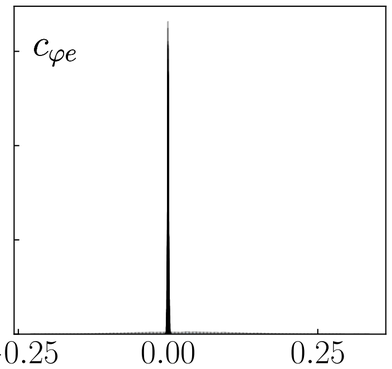


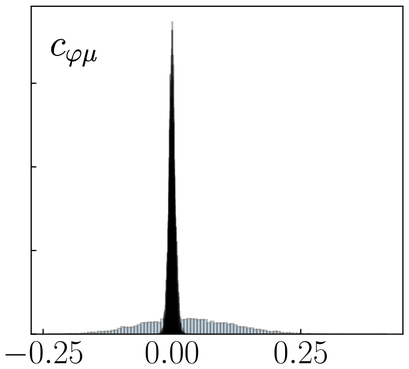


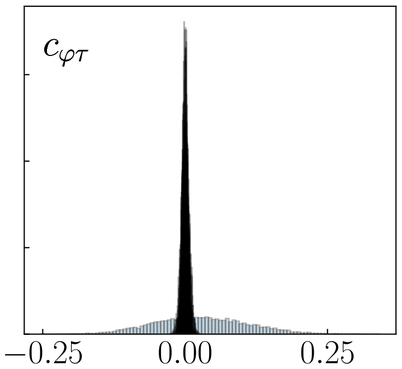


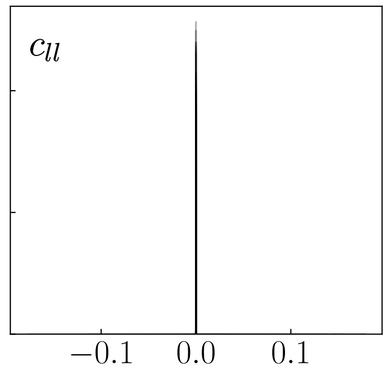


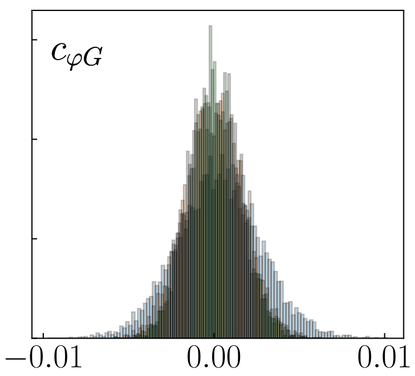


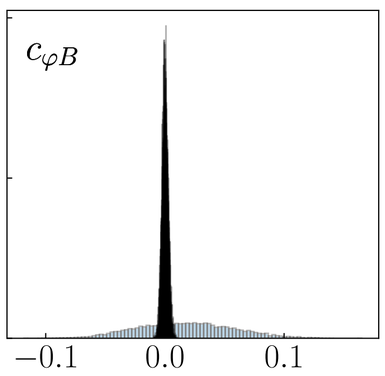


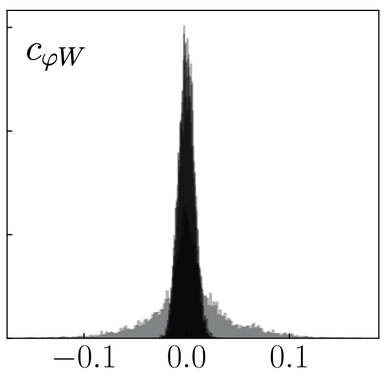


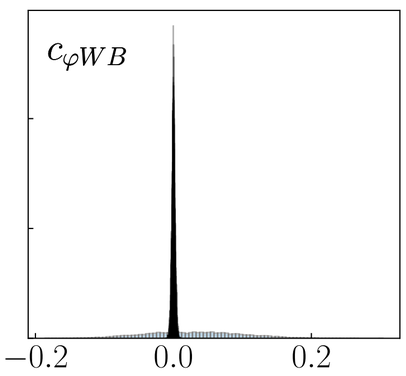


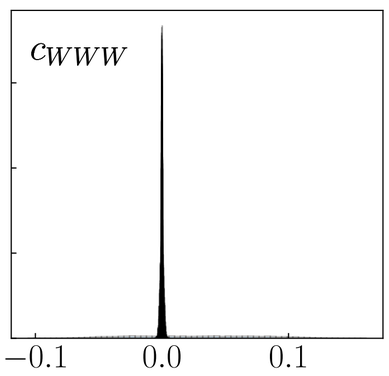


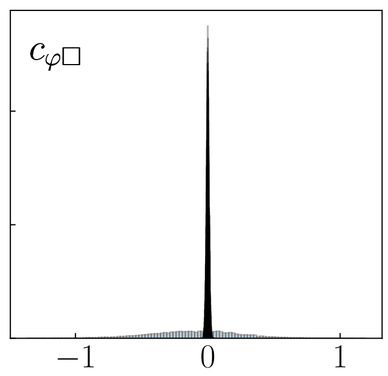


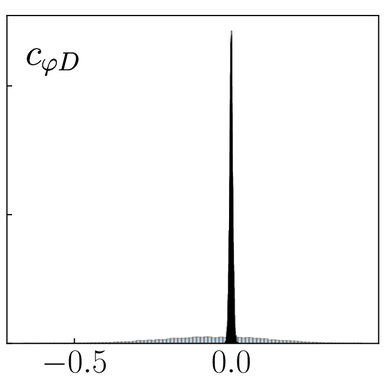












SMEFiT

		HL-LHC			ILC: 250 + 500 GeV			ILC: 91 + 2	
Class	Coefficients	best	68% CL Bounds	95% CL Bounds	best	68% CL Bounds	95% CL Bounds	best	68%
2FB	$c_{c\varphi}$	0.155	[-0.009,0.363]	[-0.043,0.41]	0.0	[-0.001,0.001]	[-0.003,0.003]	-0.0	[-0.
	$c_{b\varphi}$	-0.003	[-0.014,0.007]	[-0.025,0.017]	-0.0	[-0.001,0.001]	[-0.002,0.002]	-0.0	[-0.
	$c_{t\varphi}$	0.022	[-0.568,0.607]	[-1.144,1.208]	0.004	[-0.542,0.545]	[-1.015,1.061]	0.015	[-0.
	$c_{\tau\varphi}$	0.0	[-0.007,0.007]	[-0.013,0.014]	-0.0	[-0.001,0.001]	[-0.002,0.002]	-0.0	[-0.
	c_{tG}	-0.001	[-0.021,0.019]	[-0.04,0.038]	-0.0	[-0.016,0.016]	[-0.03,0.03]	0.0	[-0.
	c_{tW}	-0.001	[-0.046,0.044]	[-0.092,0.088]	0.0	[-0.005,0.005]	[-0.009,0.01]	0.0	[-0.
	c_{tZ}	0.021	[-0.298,0.345]	[-0.577,0.599]	0.0	[-0.006,0.006]	[-0.011,0.011]	0.0	[-0.
	$c_{\varphi q}^{(3)}$	-0.006	[-0.015,0.003]	[-0.026,0.012]	0.0	[-0.004,0.004]	[-0.008,0.008]	-0.0	[-0.
	$c_{\varphi Q}^{(3)}$	-0.011	[-0.127,0.108]	[-0.238,0.213]	0.001	[-0.007,0.008]	[-0.013,0.014]	0.0	[-0.
	$c_{\varphi q}^{(-)}$	0.015	[-0.022,0.053]	[-0.051,0.085]	0.001	[-0.013,0.016]	[-0.027,0.031]	0.0	[-0.
	$c_{\varphi Q}^{(-)}$	0.011	[-0.224,0.244]	[-0.437,0.463]	0.0	[-0.007,0.007]	[-0.015,0.014]	0.0	[-0.
	$c_{\varphi u}$	-0.033	[-0.081,0.014]	[-0.117,0.052]	0.0	[-0.013,0.014]	[-0.027,0.027]	0.0	[-0
	$c_{\varphi d}$	0.018	[-0.046,0.081]	[-0.095,0.131]	0.007	[-0.048,0.063]	[-0.089,0.106]	0.003	[-0.
	$c_{\varphi t}$	-0.161	[-0.713,0.4]	[-1.346,0.899]	0.001	[-0.063,0.065]	[-0.129,0.127]	-0.0	[-0.
	$c_{\varphi l_1}$	0.015	[-0.039,0.071]	[-0.09,0.121]	0.0	[-0.001,0.001]	[-0.003,0.003]	0.0	[-0.
	$c_{\varphi l_2}$	-0.001	[-0.078,0.078]	[-0.151,0.153]	-0.0	[-0.006,0.006]	[-0.013,0.012]	-0.0	[-0.
	$c_{\varphi l_3}$	0.027	[-0.05,0.104]	[-0.12,0.182]	-0.0	[-0.009,0.008]	[-0.017,0.016]	-0.0	[-0.
	$c_{\varphi l_1}^{(3)}$	-0.009	[-0.048,0.031]	[-0.089,0.068]	-0.0	[-0.002,0.001]	[-0.003,0.003]	0.0	[-0.
	$c_{\varphi l_2}^{(3)}$	0.008	[-0.037,0.053]	[-0.079,0.098]	-0.0	[-0.002,0.002]	[-0.004,0.004]	-0.0	[-0.
	$c_{\varphi l_3}^{(3)}$	-0.019	[-0.098,0.058]	[-0.17,0.134]	-0.0	[-0.007,0.006]	[-0.012,0.013]	0.0	[-0.
	$c_{\varphi e}$	0.028	[-0.054,0.11]	[-0.12,0.185]	0.0	[-0.001,0.001]	[-0.002,0.002]	0.0	[-0.
	$c_{\varphi\mu}$	0.029	[-0.057,0.116]	[-0.132,0.198]	0.0	[-0.006,0.007]	[-0.013,0.014]	-0.0	[-0.
	$c_{\varphi\tau}$	0.028	[-0.053,0.111]	[-0.12,0.186]	0.0	[-0.006,0.007]	[-0.013,0.014]	0.0	[-0.
4l	c_{ll}	0.014	[-0.024,0.052]	[-0.062,0.087]	0.0	[-0.0,0.0]	[-0.0,0.0]	0.0	[-
B	$c_{\varphi G}$	0.0	[-0.002,0.003]	[-0.004,0.005]	0.0	[-0.002,0.002]	[-0.003,0.003]	0.0	[-0.
	$c_{\varphi B}$	0.017	[-0.024,0.058]	[-0.057,0.095]	0.0	[-0.003,0.003]	[-0.005,0.006]	0.0	[-0.
	$c_{\varphi W}$	0.003	[-0.023,0.03]	[-0.071,0.081]	-0.0	[-0.008,0.008]	[-0.015,0.015]	-0.0	[-0.
	$c_{\varphi WB}$	0.029	[-0.041,0.1]	[-0.097,0.163]	0.0	[-0.003,0.003]	[-0.005,0.005]	0.0	[-0.
	c_{WWW}	0.026	[-0.031,0.084]	[-0.063,0.118]	-0.0	[-0.001,0.001]	[-0.003,0.003]	-0.0	[-
	$c_{\varphi\Box}$	-0.102	[-0.427,0.215]	[-0.761,0.525]	-0.0	[-0.011,0.011]	[-0.022,0.021]	-0.0	[-0.
	$c_{\varphi D}$	-0.056	[-0.217,0.105]	[-0.363,0.232]	-0.0	[-0.006,0.005]	[-0.011,0.01]	-0.0	[-0.

Table 1: Coefficient comparison