

Basis SMEFTsim_MFV (EFT SMEFT)

Basis used in the SMEFTsim_MFV UFO models, version 3.0.0 or later. Implements Warsaw basis with $U(3)$ flavor symmetry for all fermions and includes up to 1 lepton Yukawa and 3 quark Yukawa insertions. BSM CP violation is forbidden. q, u, d are the left- and right-handed quark fields. ℓ, e are left- and right-handed lepton fields. Y_l, Y_u, Y_d are the 3x3 yukawa matrices for leptons, up- and down-quarks, defined by $L_{SM} \supset \bar{d} Y_d H^\dagger q$ and analogously for the others. Quark fields are in the up-aligned basis: Y_l, Y_u are assumed diagonal at the scale of evaluation, while $Y_d = Y_d^{diag} V_{CKM}^\dagger$. Flavor indices are indicated with p, r, s, t with Einstein conventions on repeated indices. They run over 1,2,3 for all fields. This basis definition corresponds to a fixed `LambdaSMEFT=1e+3` in the UFO models. Notation and conventions can vary compared to the Warsaw basis paper, see arXiv:2012.11343 for all definitions.

Sectors

The effective Lagrangian is defined as

$$\mathcal{L}_{\text{eff}} = -\mathcal{H}_{\text{eff}} = \sum_{O_i=O_i^\dagger} C_i O_i + \sum_{O_i \neq O_i^\dagger} (C_i O_i + C_i^* O_i^\dagger).$$

`dB=dL=0`

WC name	Operator	Type
cG	$f^{ABC} G_\mu^{A\nu} G_\nu^{B\rho} G_\rho^{C\mu} / \text{TeV}^2$	R
cW	$\varepsilon^{IJK} W_\mu^I W_\nu^J W_\rho^K / \text{TeV}^2$	R
cH	$(H^\dagger H)^3 / \text{TeV}^2$	R
cHbox	$(H^\dagger H) \square (H^\dagger H) / \text{TeV}^2$	R
cHDD	$(D_\mu H^\dagger H) (H^\dagger D^\mu H) / \text{TeV}^2$	R
cHG	$G_{\mu\nu}^A G^{A\mu\nu} H^\dagger H / \text{TeV}^2$	R
cHW	$W_{\mu\nu}^I W^{I\mu\nu} H^\dagger H / \text{TeV}^2$	R
cHB	$B_{\mu\nu} B^{\mu\nu} H^\dagger H / \text{TeV}^2$	R
cHWB	$B_{\mu\nu} W^{I\mu\nu} H^\dagger \sigma^I H / \text{TeV}^2$	R
ceH	$(Y_l^\dagger)_{pr} (\bar{\ell}_p H e_r) (H^\dagger H) / \text{TeV}^2 + \text{h.c.}$	R
cuH0	$(Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} u_r) (H^\dagger H) / \text{TeV}^2 + \text{h.c.}$	R
DeltaucuH	$(Y_u^\dagger Y_u Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} u_r) (H^\dagger H) / \text{TeV}^2 + \text{h.c.}$	R
DeltadcuH	$(Y_d^\dagger Y_d Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} u_r) (H^\dagger H) / \text{TeV}^2 + \text{h.c.}$	R
cdH0	$(Y_d^\dagger)_{pr} (\bar{q}_p H d_r) (H^\dagger H) / \text{TeV}^2 + \text{h.c.}$	R
DeltaucdH	$(Y_u^\dagger Y_u Y_d^\dagger)_{pr} (\bar{q}_p H d_r) (H^\dagger H) / \text{TeV}^2 + \text{h.c.}$	R
DeltadcdH	$(Y_d^\dagger Y_d Y_d^\dagger)_{pr} (\bar{q}_p H d_r) (H^\dagger H) / \text{TeV}^2 + \text{h.c.}$	R
ceW	$(Y_l^\dagger)_{pr} (\bar{\ell}_p \sigma^I H \sigma^{\mu\nu} e_r) W_{\mu\nu}^I / \text{TeV}^2 + \text{h.c.}$	R
ceB	$(Y_l^\dagger)_{pr} (\bar{\ell}_p H \sigma^{\mu\nu} e_r) B_{\mu\nu} / \text{TeV}^2 + \text{h.c.}$	R
cuG0	$(Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} \sigma^{\mu\nu} T^A u_r) G_{\mu\nu}^A / \text{TeV}^2 + \text{h.c.}$	R

WC name	Operator	Type
DeltaucG	$(Y_u^\dagger Y_u Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} \sigma^{\mu\nu} T^A u_r) G_{\mu\nu}^A / \text{TeV}^2 + \text{h.c.}$	R
DeltadcuG	$(Y_d^\dagger Y_d Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} \sigma^{\mu\nu} T^A u_r) G_{\mu\nu}^A / \text{TeV}^2 + \text{h.c.}$	R
cuW0	$(Y_u^\dagger)_{pr} (\bar{q}_p \sigma^I \tilde{H} \sigma^{\mu\nu} u_r) W_{\mu\nu}^I / \text{TeV}^2 + \text{h.c.}$	R
DeltaucuW	$(Y_u^\dagger Y_u Y_u^\dagger)_{pr} (\bar{q}_p \sigma^I \tilde{H} \sigma^{\mu\nu} u_r) W_{\mu\nu}^I / \text{TeV}^2 + \text{h.c.}$	R
DeltadcuW	$(Y_d^\dagger Y_d Y_u^\dagger)_{pr} (\bar{q}_p \sigma^I \tilde{H} \sigma^{\mu\nu} u_r) W_{\mu\nu}^I / \text{TeV}^2 + \text{h.c.}$	R
cuB0	$(Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} \sigma^{\mu\nu} u_r) B_{\mu\nu} / \text{TeV}^2 + \text{h.c.}$	R
DeltaucB	$(Y_u^\dagger Y_u Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} \sigma^{\mu\nu} u_r) B_{\mu\nu} / \text{TeV}^2 + \text{h.c.}$	R
DeltadcuB	$(Y_d^\dagger Y_d Y_u^\dagger)_{pr} (\bar{q}_p \tilde{H} \sigma^{\mu\nu} u_r) B_{\mu\nu} / \text{TeV}^2 + \text{h.c.}$	R
cdG0	$(Y_d^\dagger)_{pr} (\bar{q}_p H \sigma^{\mu\nu} T^A d_r) G_{\mu\nu}^A / \text{TeV}^2 + \text{h.c.}$	R
DeltaucdG	$(Y_u^\dagger Y_u Y_d^\dagger)_{pr} (\bar{q}_p H \sigma^{\mu\nu} T^A d_r) G_{\mu\nu}^A / \text{TeV}^2 + \text{h.c.}$	R
DeltadcdG	$(Y_d^\dagger Y_d Y_d^\dagger)_{pr} (\bar{q}_p H \sigma^{\mu\nu} T^A d_r) G_{\mu\nu}^A / \text{TeV}^2 + \text{h.c.}$	R
cdW0	$(Y_d^\dagger)_{pr} (\bar{q}_p \sigma^I H \sigma^{\mu\nu} d_r) W_{\mu\nu}^I / \text{TeV}^2 + \text{h.c.}$	R
DeltaucdW	$(Y_u^\dagger Y_u Y_d^\dagger)_{pr} (\bar{q}_p \sigma^I H \sigma^{\mu\nu} d_r) W_{\mu\nu}^I / \text{TeV}^2 + \text{h.c.}$	R
DeltadcdW	$(Y_d^\dagger Y_d Y_d^\dagger)_{pr} (\bar{q}_p \sigma^I H \sigma^{\mu\nu} d_r) W_{\mu\nu}^I / \text{TeV}^2 + \text{h.c.}$	R
cdB0	$(Y_d^\dagger)_{pr} (\bar{q}_p H \sigma^{\mu\nu} d_r) B_{\mu\nu} / \text{TeV}^2 + \text{h.c.}$	R
DeltaucdB	$(Y_u^\dagger Y_u Y_d^\dagger)_{pr} (\bar{q}_p H \sigma^{\mu\nu} d_r) B_{\mu\nu} / \text{TeV}^2 + \text{h.c.}$	R
DeltadcdB	$(Y_d^\dagger Y_d Y_d^\dagger)_{pr} (\bar{q}_p H \sigma^{\mu\nu} d_r) B_{\mu\nu} / \text{TeV}^2 + \text{h.c.}$	R
cH11	$(H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{\ell}_p \gamma^\mu \ell_p) / \text{TeV}^2$	R
cH13	$(H^\dagger i \overleftrightarrow{D}_\mu^I H) (\bar{\ell}_p \gamma^\mu \sigma^I \ell_p) / \text{TeV}^2$	R
cHq10	$(H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{q}_p \gamma^\mu q_p) / \text{TeV}^2$	R
DeltaucHq1	$(Y_u^\dagger Y_u)_{pr} (H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{q}_p \gamma^\mu q_r) / \text{TeV}^2$	R
DeltadcHq1	$(Y_d^\dagger Y_d)_{pr} (H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{q}_p \gamma^\mu q_r) / \text{TeV}^2$	R
cHq30	$(H^\dagger i \overleftrightarrow{D}_\mu^I H) (\bar{q}_p \gamma^\mu \sigma^I q_p) / \text{TeV}^2$	R
DeltaucHq3	$(Y_u^\dagger Y_u)_{pr} (H^\dagger i \overleftrightarrow{D}_\mu^I H) (\bar{q}_p \gamma^\mu \sigma^I q_r) / \text{TeV}^2$	R
DeltadcHq3	$(Y_d^\dagger Y_d)_{pr} (H^\dagger i \overleftrightarrow{D}_\mu^I H) (\bar{q}_p \gamma^\mu \sigma^I q_r) / \text{TeV}^2$	R
cHe	$(H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{e}_p \gamma^\mu e_p) / \text{TeV}^2$	R
cHu0	$(H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{u}_p \gamma^\mu u_p) / \text{TeV}^2$	R
DeltacHu	$(Y_u Y_u^\dagger)_{pr} (H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{u}_p \gamma^\mu u_r) / \text{TeV}^2$	R
cHd0	$(H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{d}_p \gamma^\mu d_p) / \text{TeV}^2$	R
DeltacHd	$(Y_d Y_d^\dagger)_{pr} (H^\dagger i \overleftrightarrow{D}_\mu H) (\bar{d}_p \gamma^\mu d_r) / \text{TeV}^2$	R
cHud0	$(Y_u Y_d^\dagger)_{pr} (i H^\dagger D_\mu H) (\bar{u}_p \gamma^\mu d_r) / \text{TeV}^2 + \text{h.c.}$	R
c11	$(\bar{\ell}_p \gamma_\mu \ell_p) (\bar{\ell}_r \gamma^\mu \ell_r) / \text{TeV}^2$	R
c111	$(\bar{\ell}_p \gamma_\mu \ell_r) (\bar{\ell}_r \gamma^\mu \ell_p) / \text{TeV}^2$	R
clq10	$(\bar{\ell}_p \gamma_\mu \ell_p) (\bar{q}_r \gamma^\mu q_r) / \text{TeV}^2$	R
Deltauclq1	$(Y_u^\dagger Y_u)_{rs} (\bar{\ell}_p \gamma_\mu \ell_p) (\bar{q}_r \gamma^\mu q_s) / \text{TeV}^2$	R
Deltadclq1	$(Y_d^\dagger Y_d)_{rs} (\bar{\ell}_p \gamma_\mu \ell_p) (\bar{q}_r \gamma^\mu q_s) / \text{TeV}^2$	R
clq30	$(\bar{\ell}_p \gamma_\mu \sigma^I \ell_p) (\bar{q}_r \gamma^\mu \sigma^I q_r) / \text{TeV}^2$	R
Deltauclq3	$(Y_u^\dagger Y_u)_{rs} (\bar{\ell}_p \gamma_\mu \sigma^I \ell_p) (\bar{q}_r \gamma^\mu \sigma^I q_s) / \text{TeV}^2$	R
Deltadclq3	$(Y_d^\dagger Y_d)_{rs} (\bar{\ell}_p \gamma_\mu \sigma^I \ell_p) (\bar{q}_r \gamma^\mu \sigma^I q_s) / \text{TeV}^2$	R

WC name	Operator	Type
cqq10	$(\bar{q}_p \gamma_\mu q_p)(\bar{q}_r \gamma^\mu q_r)/\text{TeV}^2$	R
Deltaucqq1	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu q_s)(\bar{q}_r \gamma^\mu q_r)/\text{TeV}^2$	R
Deltadcqq1	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu q_s)(\bar{q}_r \gamma^\mu q_r)/\text{TeV}^2$	R
cqq110	$(\bar{q}_p \gamma_\mu q_r)(\bar{q}_r \gamma^\mu q_p)/\text{TeV}^2$	R
Deltaucqq11	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu q_r)(\bar{q}_r \gamma^\mu q_s)/\text{TeV}^2$	R
Deltadcqq11	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu q_r)(\bar{q}_r \gamma^\mu q_s)/\text{TeV}^2$	R
cqq30	$(\bar{q}_p \gamma_\mu \sigma^I q_p)(\bar{q}_r \gamma^\mu \sigma^I q_r)/\text{TeV}^2$	R
Deltaucqq3	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu \sigma^I q_s)(\bar{q}_r \gamma^\mu \sigma^I q_r)/\text{TeV}^2$	R
Deltadcqq3	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu \sigma^I q_s)(\bar{q}_r \gamma^\mu \sigma^I q_r)/\text{TeV}^2$	R
cqq310	$(\bar{q}_p \gamma_\mu \sigma^I q_r)(\bar{q}_r \gamma^\mu \sigma^I q_p)/\text{TeV}^2$	R
Deltaucqq31	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu \sigma^I q_r)(\bar{q}_r \gamma^\mu \sigma^I q_s)/\text{TeV}^2$	R
Deltadcqq31	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu \sigma^I q_r)(\bar{q}_r \gamma^\mu \sigma^I q_s)/\text{TeV}^2$	R
cee	$(\bar{e}_p \gamma_\mu e_p)(\bar{e}_r \gamma^\mu e_r)/\text{TeV}^2$	R
cuu0	$(\bar{u}_p \gamma_\mu u_p)(\bar{u}_r \gamma^\mu u_r)/\text{TeV}^2$	R
Deltauu	$(Y_u Y_u^\dagger)_{ps}(\bar{u}_p \gamma_\mu u_s)(\bar{u}_r \gamma^\mu u_r)/\text{TeV}^2$	R
cuu10	$(\bar{u}_p \gamma_\mu u_r)(\bar{u}_r \gamma^\mu u_p)/\text{TeV}^2$	R
Deltauu1	$(Y_u Y_u^\dagger)_{ps}(\bar{u}_p \gamma_\mu u_r)(\bar{u}_r \gamma^\mu u_s)/\text{TeV}^2$	R
cdd0	$(\bar{d}_p \gamma_\mu d_p)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
Deltaudd	$(Y_d Y_d^\dagger)_{ps}(\bar{d}_p \gamma_\mu d_s)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
cdd10	$(\bar{d}_p \gamma_\mu d_r)(\bar{d}_r \gamma^\mu d_p)/\text{TeV}^2$	R
Deltaudd1	$(Y_d Y_d^\dagger)_{ps}(\bar{d}_p \gamma_\mu d_r)(\bar{d}_r \gamma^\mu d_s)/\text{TeV}^2$	R
ceu0	$(\bar{e}_p \gamma_\mu e_p)(\bar{u}_r \gamma^\mu u_r)/\text{TeV}^2$	R
Deltaceu	$(Y_u Y_u^\dagger)_{rs}(\bar{e}_p \gamma_\mu e_p)(\bar{u}_r \gamma^\mu u_s)/\text{TeV}^2$	R
ced0	$(\bar{e}_p \gamma_\mu e_p)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
Deltaced	$(Y_d Y_d^\dagger)_{rs}(\bar{e}_p \gamma_\mu e_p)(\bar{d}_r \gamma^\mu d_s)/\text{TeV}^2$	R
cud10	$(\bar{u}_p \gamma_\mu u_p)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
Deltaucud1	$(Y_u Y_u^\dagger)_{ps}(\bar{u}_p \gamma_\mu u_s)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
Deltadcud1	$(Y_d Y_d^\dagger)_{rs}(\bar{u}_p \gamma_\mu u_p)(\bar{d}_r \gamma^\mu d_s)/\text{TeV}^2$	R
cud80	$(\bar{u}_p \gamma_\mu T^A u_p)(\bar{d}_r \gamma^\mu T^A d_r)/\text{TeV}^2$	R
Deltaucud8	$(Y_u Y_u^\dagger)_{ps}(\bar{u}_p \gamma_\mu T^A u_s)(\bar{d}_r \gamma^\mu T^A d_r)/\text{TeV}^2$	R
Deltadcud8	$(Y_d Y_d^\dagger)_{rs}(\bar{u}_p \gamma_\mu T^A u_p)(\bar{d}_r \gamma^\mu T^A d_s)/\text{TeV}^2$	R
c1e	$(\bar{\ell}_p \gamma_\mu \ell_p)(\bar{e}_r \gamma^\mu e_r)/\text{TeV}^2$	R
c1u0	$(\bar{\ell}_p \gamma_\mu \ell_p)(\bar{u}_r \gamma^\mu u_r)/\text{TeV}^2$	R
Deltaclu	$(Y_u Y_u^\dagger)_{rs}(\bar{\ell}_p \gamma_\mu \ell_p)(\bar{u}_r \gamma^\mu u_s)/\text{TeV}^2$	R
c1d0	$(\bar{\ell}_p \gamma_\mu \ell_p)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
Deltacl1d	$(Y_d Y_d^\dagger)_{rs}(\bar{\ell}_p \gamma_\mu \ell_p)(\bar{d}_r \gamma^\mu d_s)/\text{TeV}^2$	R
cqe0	$(\bar{q}_p \gamma_\mu q_p)(\bar{e}_r \gamma^\mu e_r)/\text{TeV}^2$	R
Deltaucqe	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu q_s)(\bar{e}_r \gamma^\mu e_r)/\text{TeV}^2$	R
Deltadcqe	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu q_s)(\bar{e}_r \gamma^\mu e_r)/\text{TeV}^2$	R
cqu10	$(\bar{q}_p \gamma_\mu q_p)(\bar{u}_r \gamma^\mu u_r)/\text{TeV}^2$	R
Delta1ucqu1	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu q_s)(\bar{u}_r \gamma^\mu u_r)/\text{TeV}^2$	R

WC name	Operator	Type
Delta1dcqu1	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu q_s)(\bar{u}_r \gamma^\mu u_r)/\text{TeV}^2$	R
Delta2cqu1	$(Y_u Y_u^\dagger)_{rs}(\bar{q}_p \gamma_\mu q_p)(\bar{u}_r \gamma^\mu u_s)/\text{TeV}^2$	R
cqu110	$(Y_u^\dagger)_{pt} Y_{u,sr}(\bar{q}_p \gamma_\mu q_r)(\bar{u}_s \gamma^\mu u_t)/\text{TeV}^2$	R
cqu80	$(\bar{q}_p \gamma_\mu T^A q_p)(\bar{u}_r \gamma^\mu T^A u_r)/\text{TeV}^2$	R
Delta1ucqu8	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu T^A q_s)(\bar{u}_r \gamma^\mu T^A u_r)/\text{TeV}^2$	R
Delta1dcqu8	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu T^A q_s)(\bar{u}_r \gamma^\mu T^A u_r)/\text{TeV}^2$	R
Delta2cqu8	$(Y_u Y_u^\dagger)_{rs}(\bar{q}_p \gamma_\mu T^A q_p)(\bar{u}_r \gamma^\mu T^A u_s)/\text{TeV}^2$	R
cqu810	$(Y_u^\dagger)_{pt} Y_{u,sr}(\bar{q}_p \gamma_\mu T^A q_r)(\bar{u}_s \gamma^\mu T^A u_t)/\text{TeV}^2$	R
cqd10	$(\bar{q}_p \gamma_\mu q_p)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
Delta1ucqd1	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu q_s)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
Delta1dcqd1	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu q_s)(\bar{d}_r \gamma^\mu d_r)/\text{TeV}^2$	R
Delta2cqd1	$(Y_d Y_d^\dagger)_{rs}(\bar{q}_p \gamma_\mu q_p)(\bar{d}_r \gamma^\mu d_s)/\text{TeV}^2$	R
cqd110	$(Y_d^\dagger)_{pt} Y_{d,sr}(\bar{q}_p \gamma_\mu q_r)(\bar{d}_s \gamma^\mu d_t)/\text{TeV}^2$	R
cqd80	$(\bar{q}_p \gamma_\mu T^A q_p)(\bar{d}_r \gamma^\mu T^A d_r)/\text{TeV}^2$	R
Delta1ucqd8	$(Y_u^\dagger Y_u)_{ps}(\bar{q}_p \gamma_\mu T^A q_s)(\bar{d}_r \gamma^\mu T^A d_r)/\text{TeV}^2$	R
Delta1dcqd8	$(Y_d^\dagger Y_d)_{ps}(\bar{q}_p \gamma_\mu T^A q_s)(\bar{d}_r \gamma^\mu T^A d_r)/\text{TeV}^2$	R
Delta2cqd8	$(Y_d Y_d^\dagger)_{rs}(\bar{q}_p \gamma_\mu T^A q_p)(\bar{d}_r \gamma^\mu T^A d_s)/\text{TeV}^2$	R
cqd810	$(Y_d^\dagger)_{pt} Y_{d,sr}(\bar{q}_p \gamma_\mu T^A q_r)(\bar{d}_s \gamma^\mu T^A d_t)/\text{TeV}^2$	R
clcdq0	$(Y_l^\dagger)_{pr} Y_{d,st}(\bar{\ell}_p^I e_r)(\bar{d}_s q_t^I)/\text{TeV}^2 + \text{h.c.}$	R
Deltaucledq	$(Y_l^\dagger)_{pr} (Y_d Y_u^\dagger Y_u)_{st}(\bar{\ell}_p^I e_r)(\bar{d}_s q_t^I)/\text{TeV}^2 + \text{h.c.}$	R
Deltadclcdq	$(Y_l^\dagger)_{pr} (Y_d Y_d^\dagger Y_d)_{st}(\bar{\ell}_p^I e_r)(\bar{d}_s q_t^I)/\text{TeV}^2 + \text{h.c.}$	R
cquqd1	$(Y_u^\dagger)_{pr} (Y_d^\dagger)_{st}(\bar{q}_p^I u_r)(\bar{q}_s^J d_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
cquqd11	$(Y_u^\dagger)_{sr} (Y_d^\dagger)_{pt}(\bar{q}_p^I u_r)(\bar{q}_s^J d_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
cquqd8	$(Y_u^\dagger)_{pr} (Y_d^\dagger)_{st}(\bar{q}_p^I T^A u_r)(\bar{q}_s^J T^A d_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
cquqd81	$(Y_u^\dagger)_{sr} (Y_d^\dagger)_{pt}(\bar{q}_p^I T^A u_r)(\bar{q}_s^J T^A d_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
clequ10	$(Y_l^\dagger)_{pr} (Y_u^\dagger)_{st}(\bar{\ell}_p^I e_r)(\bar{q}_s^J u_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
Deltauclequ1	$(Y_l^\dagger)_{pr} (Y_u^\dagger Y_u Y_u^\dagger)_{st}(\bar{\ell}_p^I e_r)(\bar{q}_s^J u_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
Deltadclequ1	$(Y_l^\dagger)_{pr} (Y_d^\dagger Y_d Y_u^\dagger)_{st}(\bar{\ell}_p^I e_r)(\bar{q}_s^J u_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
clequ30	$(Y_l^\dagger)_{pr} (Y_u^\dagger)_{st}(\bar{\ell}_p^I \sigma_{\mu\nu} e_r)(\bar{q}_s^J \sigma^{\mu\nu} u_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
Deltauclequ3	$(Y_l^\dagger)_{pr} (Y_u^\dagger Y_u Y_u^\dagger)_{st}(\bar{\ell}_p^I \sigma_{\mu\nu} e_r)(\bar{q}_s^J \sigma^{\mu\nu} u_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R
Deltadclequ3	$(Y_l^\dagger)_{pr} (Y_d^\dagger Y_d Y_u^\dagger)_{st}(\bar{\ell}_p^I \sigma_{\mu\nu} e_r)(\bar{q}_s^J \sigma^{\mu\nu} u_t)\varepsilon_{IJ}/\text{TeV}^2 + \text{h.c.}$	R