### 1 By process

### 1.1 $HH \rightarrow HH$

### 1.2 $HH \rightarrow HHH$

### 1.3 $HH \rightarrow H\tau^+\tau^-$

### 1.4 $HH \rightarrow Hb\bar{b}$

#### 1.5 $HH \rightarrow Ht\bar{t}$

		interf	erence	square			
	mod1		$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
ctp		$9.729 \cdot 10^{-6}$	0		$9.708 \cdot 10^{-6}$	0	
$\mathtt{ctpI}$	$6.618 \cdot 10^{-5}$	$6.618 \cdot 10^{-5}$	0		$1.434 \cdot 10^{-5}$	0	
sm	0	0	0	$1.376 \cdot 10^{-5}$	$1.376 \cdot 10^{-5}$	0	
1.0	TT TT . TT						
1.6	$HH \to Hzz$						
		interfe	rence	SC	uare		
	mod1	mod2  1 - mo			1 - 1 - 1	d2/mod1	
	$\operatorname{sm}$ 0	0	0	$1.116 \cdot 10^{-5}$ $1.116 \cdot$	$10^{-5}$	0	
1.7	$HH \to W^+W$	_					
			interference	SC	<sub>l</sub> uare		
	n	nod1 mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1 mod2	$1-\mathtt{mod}2/\mathtt{mod}$	d1	
	sm	0 0	0	0.111  0.111	0		
1.8	$HH \to W^+W$	$r-\gamma$					
		interfe	rence	SC	juare		
	mod1	mod2  1 - mo	d2/mod1	mod1 mod	1 - mo	d2/mod1	
	$\mathtt{sm} \qquad  0$	0	0	$3.283 \cdot 10^{-7}$ $3.283 \cdot$	$10^{-7}$ $-9.13$	$8 \cdot 10^{-8}$	

1.9  $HH \rightarrow W^+ \bar{t} b$ 

interference square mod1mod2  $1 - \mathtt{mod}2/\mathtt{mod}1$ mod1mod2  $1 - \mathtt{mod}2/\mathtt{mod}1$ 

cbW	$3.324 \cdot 10^{-8}$	$3.324 \cdot 10^{-8}$	0	$2.144 \cdot 10^{-5}$	$2.144 \cdot 10^{-5}$	0
cbWI	$-1.753 \cdot 10^{-7}$	$-1.753 \cdot 10^{-7}$	0	$1.198 \cdot 10^{-5}$	$1.198 \cdot 10^{-5}$	0
cpQ3	$8.575 \cdot 10^{-6}$	$8.575 \cdot 10^{-6}$	0	$6.628 \cdot 10^{-6}$	$6.628 \cdot 10^{-6}$	0
cptb	$-2.558 \cdot 10^{-6}$	$-2.558 \cdot 10^{-6}$	0	$8.453 \cdot 10^{-6}$	$8.453 \cdot 10^{-6}$	$1.183 \cdot 10^{-8}$
cptbI	$-1.029 \cdot 10^{-7}$	$-1.029 \cdot 10^{-7}$	0	$6.474 \cdot 10^{-6}$	$6.474 \cdot 10^{-6}$	0
ctW	$2.416 \cdot 10^{-5}$	$2.416 \cdot 10^{-5}$	0	$1.481 \cdot 10^{-5}$	$1.481 \cdot 10^{-5}$	0
ctWI	$5.272 \cdot 10^{-6}$	$5.272 \cdot 10^{-6}$	0	$1.48 \cdot 10^{-5}$	$1.48 \cdot 10^{-5}$	0
ctp	$1.374 \cdot 10^{-6}$	$1.374 \cdot 10^{-6}$	0	$1.005 \cdot 10^{-6}$	$1.005 \cdot 10^{-6}$	0
ctpI	$-3.562 \cdot 10^{-7}$	$-3.562 \cdot 10^{-7}$	$-2.807 \cdot 10^{-8}$	$4.231 \cdot 10^{-6}$	$4.231 \cdot 10^{-6}$	0
sm	0	0	0	0.1906	0.1906	0

## **1.10** $HH \to W^+ e^- \bar{\nu}_e$

			interference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
sm	0	0	0	$2.005 \cdot 10^{-7}$	$2.005 \cdot 10^{-7}$	0	

## 1.11 $HH \rightarrow W^- u \bar{d}$

## **1.12** $HH \rightarrow z\bar{b}b$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cbW	$8.401 \cdot 10^{-8}$	$8.401 \cdot 10^{-8}$	$1.19 \cdot 10^{-8}$	$6.91 \cdot 10^{-7}$	$6.91 \cdot 10^{-7}$	0

cbWI	$1.425 \cdot 10^{-8}$	$1.425 \cdot 10^{-8}$	$7.017 \cdot 10^{-8}$	$1.551 \cdot 10^{-6}$	$1.551 \cdot 10^{-6}$	$6.448 \cdot 10^{-8}$
cpQ3	$1.522 \cdot 10^{-6}$	$1.522 \cdot 10^{-6}$	0	$1.018 \cdot 10^{-6}$	$1.018 \cdot 10^{-6}$	0
cpQM	$7.904 \cdot 10^{-6}$	$7.904 \cdot 10^{-6}$	$1.265 \cdot 10^{-8}$	$2.173 \cdot 10^{-5}$	$2.173 \cdot 10^{-5}$	0
cpb	$-9.775 \cdot 10^{-7}$	$-9.775 \cdot 10^{-7}$	$-2.046 \cdot 10^{-8}$	$4.534 \cdot 10^{-6}$	$4.534 \cdot 10^{-6}$	0
sm	0	0	0	$7.741 \cdot 10^{-7}$	$7.741 \cdot 10^{-7}$	0

### 1.13 $HH \rightarrow z\nu_e\bar{\nu}_e$

			interference	square	
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod $	1
$\mathtt{sm}$	0	0	0	$1.037 \cdot 10^{-7}$ $1.037 \cdot 10^{-7}$ 0	

### 1.14 $HH \rightarrow zc\bar{c}$

			interference	squar	9
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1 mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
sm	0	0	0	$3.711 \cdot 10^{-7}$ $3.711 \cdot 10^{-}$	7 0

## **1.15** $HH \rightarrow zd\bar{d}$

## **1.16** $HH \rightarrow ze^{+}e^{-}$

 ${\rm sm} \qquad \qquad 0 \qquad \qquad 0 \qquad \qquad 1.085 \cdot 10^{-7} \quad 1.085 \cdot 10^{-7} \qquad \qquad 0$ 

## 1.17 $HH \rightarrow zt\bar{t}$

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cpQM	$9.632 \cdot 10^{-5}$	$9.632 \cdot 10^{-5}$	0	0.0001012	0.0001012	0		
cpt	$-1.814 \cdot 10^{-5}$	$-1.814 \cdot 10^{-5}$	0	$2.131 \cdot 10^{-5}$	$2.131 \cdot 10^{-5}$	0		
ctW	$3.71 \cdot 10^{-13}$	0	1	$1.67 \cdot 10^{-17}$	0	1		
ctWI	$2.025 \cdot 10^{-12}$	0	1	$3.27 \cdot 10^{-17}$	0	1		
ctZ	$-1.437 \cdot 10^{-6}$	$-1.437 \cdot 10^{-6}$	$6.262 \cdot 10^{-7}$	$7.409 \cdot 10^{-5}$	$7.409 \cdot 10^{-5}$	$1.093 \cdot 10^{-6}$		
ctZI	$-1.231 \cdot 10^{-8}$	$-1.23 \cdot 10^{-8}$	$9.752 \cdot 10^{-7}$	$8.222 \cdot 10^{-6}$	$8.222 \cdot 10^{-6}$	$1.095 \cdot 10^{-6}$		
ctp	$1.715 \cdot 10^{-6}$	$1.715 \cdot 10^{-6}$	0	$1.387 \cdot 10^{-6}$	$1.387 \cdot 10^{-6}$	0		
ctpI	$-3.056 \cdot 10^{-6}$	$-3.056 \cdot 10^{-6}$	0	$6.996 \cdot 10^{-6}$	$6.996 \cdot 10^{-6}$	$1.429 \cdot 10^{-8}$		
sm	0	0	0	$8.862 \cdot 10^{-6}$	$8.862 \cdot 10^{-6}$	$1.128 \cdot 10^{-8}$		

## $\textbf{1.18} \quad HH \rightarrow zz$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\mathtt{sm}$	0	0	0	0.485	0.485	0		

## **1.19** $HW^+ \rightarrow \gamma t \bar{b}$

		interfer	rence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
cbW	$2.878 \cdot 10^{-9}$	$2.878 \cdot 10^{-9}$	0	$4.017 \cdot 10^{-6}$	$4.017 \cdot 10^{-6}$	$-2.49 \cdot 10^{-8}$
cbWI	$-9.51 \cdot 10^{-9}$	$-9.51 \cdot 10^{-9}$	$3.155 \cdot 10^{-8}$	$1.769 \cdot 10^{-6}$	$1.769 \cdot 10^{-6}$	0

cpQ3	$-4.117 \cdot 10^{-8}$	$-4.117 \cdot 10^{-8}$	0	$2.222 \cdot 10^{-8}$	$2.222 \cdot 10^{-8}$	0
cptb	$-6.607 \cdot 10^{-9}$	$-6.607 \cdot 10^{-9}$	$-1.514 \cdot 10^{-8}$	$2.143 \cdot 10^{-8}$	$2.143 \cdot 10^{-8}$	$-4.666 \cdot 10^{-8}$
cptbI	$5.157 \cdot 10^{-10}$	$5.157 \cdot 10^{-10}$	$-1.939 \cdot 10^{-8}$	$4.946 \cdot 10^{-9}$	$4.946 \cdot 10^{-9}$	0
ctW	$-7.207 \cdot 10^{-6}$	$-7.207 \cdot 10^{-6}$	$8.88 \cdot 10^{-7}$	$1.986 \cdot 10^{-5}$	$1.986 \cdot 10^{-5}$	$1.359 \cdot 10^{-6}$
ctWI	$1.992 \cdot 10^{-6}$	$1.992 \cdot 10^{-6}$	$7.531 \cdot 10^{-7}$	$5.796 \cdot 10^{-5}$	$5.796 \cdot 10^{-5}$	$1.208 \cdot 10^{-6}$
ctZ	$-7.103 \cdot 10^{-8}$	$-7.103 \cdot 10^{-8}$	$5.069 \cdot 10^{-7}$	$4.559 \cdot 10^{-5}$	$4.559 \cdot 10^{-5}$	$1.141 \cdot 10^{-6}$
ctZI	$5.044 \cdot 10^{-7}$	$5.044 \cdot 10^{-7}$	$5.551 \cdot 10^{-7}$	$5.659 \cdot 10^{-6}$	$5.659 \cdot 10^{-6}$	$1.113 \cdot 10^{-6}$
ctp	$2.71 \cdot 10^{-7}$	$2.71\cdot 10^{-7}$	0	$9.379 \cdot 10^{-8}$	$9.379 \cdot 10^{-8}$	$-2.132 \cdot 10^{-8}$
ctpI	$-1.591 \cdot 10^{-8}$	$-1.591 \cdot 10^{-8}$	0	$1.226 \cdot 10^{-9}$	$1.226 \cdot 10^{-9}$	$-8.155 \cdot 10^{-8}$
sm	0	0	0	$1.127 \cdot 10^{-6}$	$1.127 \cdot 10^{-6}$	0

## 1.20 $HW^+ \rightarrow \gamma u \bar{d}$

			interference		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
sm	0	0	0	$6.821 \cdot 10^{-7}$	$6.821 \cdot 10^{-7}$	0

## 1.21 $HW^+ \rightarrow u\bar{d}$

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
sm	0	0	0	0.02155	0.02155	$4.641 \cdot 10^{-8}$		

## 1.22 $HW^- \rightarrow \bar{t}b$

		erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
cbW	-0.05332	-0.05332	0	0.1119	0.1119	$8.937 \cdot 10^{-8}$	
cbWI	$1.407 \cdot 10^{-6}$	$1.407 \cdot 10^{-6}$	0	2.074	2.074	0	

cpQ3	-0.9216	-0.9216	0	1.686   1.686   0
cptb	-0.02233	-0.02233	0	$0.03872  0.03872 \qquad 0$
cptbI	$-8.83 \cdot 10^{-6}$	$-8.83 \cdot 10^{-6}$	0	$0.182 \qquad 0.182 \qquad 0$
ctW	-0.247	-0.247	0	2.176   2.176   0
ctWI	0.000395	0.000395	0	1.284   1.284   0
ctp	-0.03405	-0.03405	$2.937 \cdot 10^{-8}$	$0.04842  0.04842 \qquad 0$
ctpI	-0.0009859	-0.0009859	0	$0.05844  0.05844 \qquad 0$
sm	0	0	0	0.5515  0.5515  0

## 1.23 $HW^- \rightarrow \gamma e^- \bar{\nu}_e$

			interference		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
sm	0	0	0	$8.098 \cdot 10^{-8}$	$8.098 \cdot 10^{-8}$	0

# 1.24 $HW^- \rightarrow \mu^- \bar{\nu}_{\mu}$

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
sm	0	0	0	0.007625	0.007625	$1.311 \cdot 10^{-8}$		

## 1.25 $H\gamma \rightarrow b\bar{b}$

		interfe	erence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cbW	$-1.46 \cdot 10^{-6}$	$-1.46 \cdot 10^{-6}$	0	0.6603	0.6603	$-1.514 \cdot 10^{-8}$	
cbWI	$5.584 \cdot 10^{-20}$	$5.488 \cdot 10^{-20}$	0.01718	0.2375	0.2375	0	
sm	0	0	0	$9.662 \cdot 10^{-5}$	$9.662 \cdot 10^{-5}$	$-1.035 \cdot 10^{-8}$	

## 1.26 $H\gamma \rightarrow t\bar{t}$

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
ctW	-0.6816	-0.6816	$5.868 \cdot 10^{-7}$	14.07	14.07	$1.208 \cdot 10^{-6}$	
ctWI	$9.816 \cdot 10^{-17}$	$3.567 \cdot 10^{-17}$	0.6366	15.35	15.35	$1.238 \cdot 10^{-6}$	
ctZ	0.5385	0.5385	$5.386 \cdot 10^{-7}$	11.76	11.76	$1.105 \cdot 10^{-6}$	
ctZI	$-2.116 \cdot 10^{-16}$	$-4.597 \cdot 10^{-16}$	-1.172	2.596	2.596	$1.117 \cdot 10^{-6}$	
ctp	-0.2466	-0.2466	0	0.007566	0.007566	$-2.643 \cdot 10^{-8}$	
ctpI	$-8.983 \cdot 10^{-19}$	$4.366 \cdot 10^{-19}$	1.486	0.002155	0.002155	0	
sm	0	0	0	0.4052	0.4052	0	

## 1.27 $Hz \to \mu^+ \mu^-$

### 1.28 $Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$

### 1.29 $Hz \rightarrow b\bar{b}$

cbW	0.001412	0.001412	$7.08 \cdot 10^{-8}$	0.229	0.229	0
cbWI	$2.529 \cdot 10^{-6}$	$2.529 \cdot 10^{-6}$	0	1.417	1.417	0
cpQ3	0.2696	0.2696	0	2.355	2.355	0
cpQM	0.04346	0.04346	0	0.1954	0.1954	0
cpb	-0.01636	-0.01636	0	0.4194	0.4194	0
sm	0	0	0	0.01444	0.01444	0

## 1.30 $Hz \rightarrow s\bar{s}$

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
sm	0	0	0	0.006683	0.006683	0		

## 1.31 $Hz \rightarrow t\bar{t}$

		interfe	erence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cpQM	1.846	1.846	0	0.4705	0.4705	0		
cpt	-2.207	-2.207	0	1.347	1.347	0		
ctW	$3.974 \cdot 10^{-8}$	0	1	$1.338 \cdot 10^{-12}$	0	1		
ctWI	$3.901 \cdot 10^{-10}$	0	1	$1.107 \cdot 10^{-12}$	0	1		
ctZ	-0.08063	-0.08063	$5.829 \cdot 10^{-7}$	2.52	2.52	$1.111 \cdot 10^{-6}$		
ctZI	-0.0001765	-0.0001765	$5.667 \cdot 10^{-7}$	1.543	1.543	$1.037 \cdot 10^{-6}$		
ctp	0.001345	0.001345	$-2.23 \cdot 10^{-7}$	0.06874	0.06874	0		
$\mathtt{ctpI}$	0.0003853	0.0003853	$5.19 \cdot 10^{-8}$	0.0655	0.0655	0		
sm	0	0	0	2.228	2.228	0		

## 1.32 $Hz \rightarrow u\bar{u}$

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### 1.33 $W^+W^- \rightarrow Hb\bar{b}$

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cbW	$-3.023 \cdot 10^{-7}$	$-3.023 \cdot 10^{-7}$	0	$8.273 \cdot 10^{-7}$	$8.273 \cdot 10^{-7}$	0		
cbWI	$-2.49 \cdot 10^{-8}$	$-2.49 \cdot 10^{-8}$	0	$3.21 \cdot 10^{-6}$	$3.21 \cdot 10^{-6}$	0		
cpQ3	$-4.333 \cdot 10^{-6}$	$-4.333 \cdot 10^{-6}$	0	$7.67 \cdot 10^{-7}$	$7.67 \cdot 10^{-7}$	0		
cpQM	$-1.675 \cdot 10^{-6}$	$-1.675 \cdot 10^{-6}$	0	$5.296 \cdot 10^{-8}$	$5.296 \cdot 10^{-8}$	$1.888 \cdot 10^{-8}$		
cpb	$-1.65 \cdot 10^{-8}$	$-1.65 \cdot 10^{-8}$	0	$1.564 \cdot 10^{-7}$	$1.564 \cdot 10^{-7}$	0		
cptb	$-2.883 \cdot 10^{-7}$	$-2.883 \cdot 10^{-7}$	0	$4.847 \cdot 10^{-7}$	$4.847 \cdot 10^{-7}$	0		
cptbI	$-1.177 \cdot 10^{-8}$	$-1.177 \cdot 10^{-8}$	0	$4.208 \cdot 10^{-7}$	$4.208 \cdot 10^{-7}$	0		
ctW	$-2.712 \cdot 10^{-6}$	$-2.712 \cdot 10^{-6}$	0	$4.036 \cdot 10^{-6}$	$4.036 \cdot 10^{-6}$	0		
ctWI	$-2.48 \cdot 10^{-6}$	$-2.48 \cdot 10^{-6}$	0	$3.267 \cdot 10^{-6}$	$3.267 \cdot 10^{-6}$	0		
ctp	$4.5\cdot 10^{-7}$	$4.5\cdot 10^{-7}$	0	$2.915 \cdot 10^{-8}$	$2.915 \cdot 10^{-8}$	0		
ctpI	$-6.703 \cdot 10^{-7}$	$-6.703 \cdot 10^{-7}$	0	$2.174 \cdot 10^{-8}$	$2.174 \cdot 10^{-8}$	0		
sm	0	0	0	0.0001476	0.0001476	$6.777 \cdot 10^{-8}$		

### 1.34 $W^+W^- \rightarrow Hc\bar{c}$

### 1.35 $W^+W^- \rightarrow Hd\bar{d}$

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## 1.36 $W^+W^- \rightarrow Ht\bar{t}$

		interfer	ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cbW	$-5.461 \cdot 10^{-8}$	$-5.461 \cdot 10^{-8}$	$3.663 \cdot 10^{-8}$	$2.329 \cdot 10^{-8}$	$2.329 \cdot 10^{-8}$	0		
cbWI	$2.531 \cdot 10^{-9}$	$2.531 \cdot 10^{-9}$	$3.951 \cdot 10^{-8}$	$1.603 \cdot 10^{-8}$	$1.603 \cdot 10^{-8}$	0		
cpQ3	$3.283 \cdot 10^{-5}$	$3.283 \cdot 10^{-5}$	0	$4.168 \cdot 10^{-5}$	$4.168 \cdot 10^{-5}$	0		
cpQM	$-1.916 \cdot 10^{-6}$	$-1.916 \cdot 10^{-6}$	0	$1.274 \cdot 10^{-6}$	$1.274 \cdot 10^{-6}$	0		
cpt	$-1.137 \cdot 10^{-6}$	$-1.137 \cdot 10^{-6}$	0	$8.781 \cdot 10^{-7}$	$8.781 \cdot 10^{-7}$	0		
cptb	$3.76 \cdot 10^{-8}$	$3.76 \cdot 10^{-8}$	0	$1.016 \cdot 10^{-9}$	$1.016 \cdot 10^{-9}$	0		
cptbI	$-3.481 \cdot 10^{-8}$	$-3.481 \cdot 10^{-8}$	0	$3.398 \cdot 10^{-9}$	$3.398 \cdot 10^{-9}$	0		
ctW	$1.153 \cdot 10^{-5}$	$1.153 \cdot 10^{-5}$	$8.674 \cdot 10^{-8}$	$3.041 \cdot 10^{-5}$	$3.041 \cdot 10^{-5}$	$-3.288 \cdot 10^{-8}$		
ctWI	$2.902 \cdot 10^{-6}$	$2.902 \cdot 10^{-6}$	0	$7.521 \cdot 10^{-5}$	$7.521 \cdot 10^{-5}$	$-1.33 \cdot 10^{-8}$		
ctZ	$3.758 \cdot 10^{-7}$	$3.758 \cdot 10^{-7}$	$5.588 \cdot 10^{-7}$	$1.548 \cdot 10^{-7}$	$1.548 \cdot 10^{-7}$	$1.098 \cdot 10^{-6}$		
ctZI	$5.331 \cdot 10^{-7}$	$5.331 \cdot 10^{-7}$	$5.44 \cdot 10^{-7}$	$1.273 \cdot 10^{-7}$	$1.273 \cdot 10^{-7}$	$1.021 \cdot 10^{-6}$		
ctp	$-3.054 \cdot 10^{-7}$	$-3.054 \cdot 10^{-7}$	$-3.274 \cdot 10^{-8}$	$1.047 \cdot 10^{-6}$	$1.047 \cdot 10^{-6}$	0		
ctpI	$-1.077 \cdot 10^{-7}$	$-1.077 \cdot 10^{-7}$	0	$7.613 \cdot 10^{-7}$	$7.613 \cdot 10^{-7}$	0		
sm	0	0	0	$3.596 \cdot 10^{-5}$	$3.596 \cdot 10^{-5}$	0		

## 1.37 $W^+W^- \to W^+W^-$

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$\mathtt{sm}$	0	0	0	7.679	7.679	$1.302 \cdot 10^{-8}$		

## 1.38 $W^+W^- \rightarrow \gamma\gamma$

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$\mathtt{sm}$	0	0	0	0.2107	0.2107	$-4.747 \cdot 10^{-8}$		

## 1.39 $W^+W^- \rightarrow \gamma\gamma\gamma$

			interference		square	
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
sm	0	0	0	$1.221 \cdot 10^{-6}$	$1.221 \cdot 10^{-6}$	0

## **1.40** $\bar{b}t \rightarrow \bar{d}u$

		interference			square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cQbqu1	0	0	0	0.25	0.25	0	
cQbqu1I	0	0	0	0.25	0.25	0	
cQbqu1T	0	0	0	32.27	2.848	0.9117	
cQbqu1TI	0	0	0	32.27	2.848	0.9117	
cQbqu8	0	0	0	0.05556	0.05556	0	
cQbqu8I	0	0	0	0.05556	0.05556	0	
cQbqu8T	0	0	0	7.17	0.6329	0.9117	
cQbqu8TI	0	0	0	7.17	0.6329	0.9117	
cQq13	0.1065	0.1065	0	0.5032	0.5032	0	
cQq83	$6.809 \cdot 10^{-11}$	$6.523 \cdot 10^{-20}$	1	0.01073	0.01073	0	
cQtqd1	0	0	0	0.25	0.25	0	
cQtqd1I	0	0	0	0.25	0.25	0	
cQtqd1T	0	0	0	32.27	2.848	0.9117	

cQtqd1TI	0	0	0	32.27	2.848	0.9117	
cQtqd8	0	0	0	0.05556	0.05556	0	
cQtqd8I	0	0	0	0.05556	0.05556	0	
cQtqd8T	0	0	0	7.17	0.6329	0.9117	
cQtqd8TI	0	0	0	7.17	0.6329	0.9117	
cbQqd1	0	0	0	0.2	5	0.25	$4 \cdot 10^{-8}$
cbQqd1I	0	0	0	0.2	5	0.25	$4 \cdot 10^{-8}$
cbQqd8	0	0	0	0.058	556	0.05556	$-1.26 \cdot 10^{-7}$
cbQqd8I	0	0	0	0.058	556	0.05556	$-1.26 \cdot 10^{-7}$
cbW	0.0002602	0.0002602	0	0.03	13	0.013	0
cbWI	$-3.327 \cdot 10^{-20}$	$-1.726 \cdot 10^{-19}$	-4.186	0.013	232	0.01232	0
cbtud1	0	0	0	0.008	708	0.008708	$-2.297 \cdot 10^{-8}$
cbtud1I	0	0	0	0.008	708	0.008708	$-2.297 \cdot 10^{-8}$
cbtud8	0	0	0	0.001	935	0.001935	$-2.067 \cdot 10^{-7}$
cbtud8I	0	0	0	0.001	935	0.001935	$-2.067 \cdot 10^{-7}$
cpQ3	0.002789	0.002789	$3.586 \cdot 10^{-8}$	$8.453 \cdot$	$10^{-5}$ 8	$3.453 \cdot 10^{-5}$	$1.183 \cdot 10^{-8}$
cptb	$-2.193 \cdot 10^{-6}$	$-2.193 \cdot 10^{-6}$	0	$3.362 \cdot$	$10^{-5}$ 3	$3.362 \cdot 10^{-5}$	0
cptbI	$1.983 \cdot 10^{-21}$	$9.019 \cdot 10^{-22}$	0.5452	$2.762 \cdot$	$10^{-6}$ 2	$2.762 \cdot 10^{-6}$	$3.621 \cdot 10^{-8}$
ctQqu1	0	0	0	0.2	5	0.25	$4 \cdot 10^{-8}$
ctQqu1I	0	0	0	0.2	5	0.25	$4 \cdot 10^{-8}$
ctQqu8	0	0	0	0.055	556	0.05556	$-1.26 \cdot 10^{-7}$
ctQqu8I	0	0	0	0.055	556	0.05556	$-1.26 \cdot 10^{-7}$
ctW	0.01446	0.01446	0	0.006	829	0.006829	0
ctWI	$5.64 \cdot 10^{-19}$	$2.788 \cdot 10^{-19}$	0.5057	0.01	05	0.0105	0
sm	0	0	0	0.0003	3897	0.0003897	$2.566 \cdot 10^{-8}$

## $\textbf{1.41} \quad \gamma W^+ \to z W^+$

interference square

0

0

sm

0

 $9.337 \cdot 10^{-5}$ 

 $9.337 \cdot 10^{-5}$ 

 $-2.142 \cdot 10^{-8}$ 

# $1.46 \quad b\bar{b} \to \mu^+\mu^-$

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cQe2	-0.002922	-0.002922	$-3.422 \cdot 10^{-8}$	0.06697	0.06697	0		
cQ132	0.00775	0.00775	0	0.08163	0.08163	0		
cQ1M2	0.06012	0.06012	0	0.3166	0.3166	0		
cbW	$5.971 \cdot 10^{-5}$	$5.971 \cdot 10^{-5}$	$1.675 \cdot 10^{-8}$	0.001071	0.001071	0		
cbWI	$4.554 \cdot 10^{-16}$	$4.554 \cdot 10^{-16}$	$5.674 \cdot 10^{-5}$	0.002095	0.002095	0		
cblS2	0	0	0	0.1667	0.1667	0		
cblSI2	0	0	0	0.1667	0.1667	0		
cpQ3	0.00023	0.00023	0	$1.307 \cdot 10^{-5}$	$1.307 \cdot 10^{-5}$	0		
cpQM	0.0002072	0.0002072	0	$4.955 \cdot 10^{-6}$	$4.955 \cdot 10^{-6}$	$2.018 \cdot 10^{-8}$		
cpb	$6.38 \cdot 10^{-6}$	$6.38 \cdot 10^{-6}$	$9.404 \cdot 10^{-8}$	$3.248 \cdot 10^{-6}$	$3.248 \cdot 10^{-6}$	0		
sm	0	0	0	0.001818	0.001818	0		

## 1.47 $b\bar{b} \rightarrow \nu_e \bar{\nu}_e$

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\mathtt{mod1} \hspace{1cm} \mathtt{mod2} \hspace{1cm} 1-\mathtt{mod2/mod2}$	d1		
cQ1M1	-0.005651	-0.005651	0	$0.0242 \qquad 0.0242 \qquad 0$			
cbW	$8.063 \cdot 10^{-5}$	$8.063 \cdot 10^{-5}$	$1.24 \cdot 10^{-8}$	$0.0002271 \qquad 0.0002271 \qquad 0$			
cbWI	$-3.527 \cdot 10^{-20}$	$-1.31 \cdot 10^{-20}$	0.6287	$0.001787 \qquad 0.001787 \qquad 0$			
cpQ3	$9.476 \cdot 10^{-5}$	$9.476 \cdot 10^{-5}$	0	$6.805 \cdot 10^{-6}  6.805 \cdot 10^{-6} \qquad 0$			
cpQM	0.000618	0.000618	$1.618 \cdot 10^{-8}$	$2.219 \cdot 10^{-5}$ $2.219 \cdot 10^{-5}$ 0			
cpb	$-9.464 \cdot 10^{-5}$	$-9.464 \cdot 10^{-5}$	$-2.113 \cdot 10^{-8}$	$1.842 \cdot 10^{-5}$ $1.842 \cdot 10^{-5}$ 0			
sm	0	0	0	$0.0007306  0.0007306  1.369 \cdot 10^{-1}$	-8		

## 1.48 $b\bar{b} \rightarrow b\bar{b}$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cQQ1	-0.5124	-0.5124	0	0.754	0.754	0		
cQQ8	-0.0001932	-0.0001932	0	0.001648	0.001648	$6.066 \cdot 10^{-8}$		
cQb1	0.09637	0.09637	$-2.075 \cdot 10^{-8}$	2.142	2.142	0		
cQb8	-2.536	-2.536	0	0.5412	0.5412	0		
cbW	-0.02371	-0.02371	0	0.3266	0.3266	$3.062 \cdot 10^{-8}$		
cbWI	$1.336 \cdot 10^{-18}$	$1.565 \cdot 10^{-18}$	-0.1717	0.08699	0.08699	0		
cpQ3	-0.1084	-0.1084	0	0.005196	0.005196	0		
cpQM	-0.09504	-0.09504	0	0.006656	0.006656	0		
cpb	0.0003206	0.0003206	$-3.119 \cdot 10^{-8}$	0.000236	0.000236	0		
sm	0	0	0	8.108	8.108	0		

# $1.49 \quad b\bar{b} \to d\bar{d}$

		interfe	rence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cQd1	-0.008201	-0.008201	$-2.439 \cdot 10^{-8}$	0.5637	0.5637	0		
cQd8	0.0243	0.0243	0	0.008195	0.008195	0		
cQq11	0.1355	0.1355	0	0.6187	0.6187	0		
cQq13	0.01439	0.01439	0	0.06572	0.06572	0		
cQq81	0.2706	0.2706	0	0.09133	0.09133	0		
cQq83	0.04091	0.04091	0	0.0138	0.0138	0		
cbQqd1	0	0	0	0.5	0.5	$4 \cdot 10^{-8}$		
cbQqd1I	0	0	0	0.5	0.5	$4 \cdot 10^{-8}$		
cbQqd8	0	0	0	0.1111	0.1111	$-9 \cdot 10^{-8}$		
cbQqd8I	0	0	0	0.1111	0.1111	$-9 \cdot 10^{-8}$		

cbW	0.0001807	0.0001807	0	0.00434	0.00434	0
cbWI	$1.003 \cdot 10^{-17}$	$1.024 \cdot 10^{-17}$	-0.02146	0.004928	0.004928	0
cpQ3	0.002025	0.002025	0	0.0001311	0.0001311	0
$\mathtt{cpQM}$	0.0009599	0.0009599	$1.042 \cdot 10^{-8}$	$3.108 \cdot 10^{-5}$	$3.108 \cdot 10^{-5}$	0
cpb	$-6.033 \cdot 10^{-5}$	$-6.033 \cdot 10^{-5}$	$-1.657 \cdot 10^{-8}$	$2.835 \cdot 10^{-5}$	$2.835 \cdot 10^{-5}$	0
sm	0	0	0	0.5166	0.5166	0

## $1.50 \quad b\bar{b} \to t\bar{t}$

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cQQ1	-0.0127	-0.0127	0	0.007536	0.007536	0		
cQQ8	0.04887	0.04887	$-2.046 \cdot 10^{-8}$	0.03346	0.03346	0		
cQb1	-0.01366	-0.01366	$-7.322 \cdot 10^{-8}$	0.8373	0.8373	0		
cQb8	0.03347	0.03347	0	0.004733	0.004733	0		
cQt1	-0.1263	-0.1263	0	0.09471	0.09471	0		
cQt8	-0.08706	-0.08706	0	0.004733	0.004733	0		
cQtQb1	-0.006296	-0.006296	0	0.7308	0.7308	0		
cQtQb1I	$8.375 \cdot 10^{-19}$	$8.626 \cdot 10^{-19}$	-0.02989	0.5196	0.5196	0		
cQtQb8	0.0004577	0.0004577	0	0.1392	0.1392	0		
cQtQb8I	$1.337 \cdot 10^{-18}$	$1.924 \cdot 10^{-18}$	-0.439	0.1317	0.1317	0		
cbW	0.007927	0.007927	0	0.2245	0.2245	0		
cbWI	$1.679 \cdot 10^{-18}$	$4.056 \cdot 10^{-18}$	-1.416	0.009533	0.009533	0		
cpQ3	-0.01611	-0.01611	0	0.003652	0.003652	0		
$\mathtt{cpQM}$	-0.0008057	-0.0008057	$-1.241 \cdot 10^{-8}$	$1.827 \cdot 10^{-6}$	$1.827 \cdot 10^{-6}$	$-5.473 \cdot 10^{-8}$		
cpb	$7.141 \cdot 10^{-5}$	$7.141 \cdot 10^{-5}$	$-1.4 \cdot 10^{-8}$	$3.104 \cdot 10^{-5}$	$3.104 \cdot 10^{-5}$	$3.221 \cdot 10^{-8}$		
cpt	-0.001455	-0.001455	0	$1.966 \cdot 10^{-5}$	$1.966 \cdot 10^{-5}$	$5.087 \cdot 10^{-8}$		
cptb	-0.0007142	-0.0007142	0	0.0005595	0.0005595	0		
cptbI	$-6.312 \cdot 10^{-20}$	$3.402 \cdot 10^{-20}$	1.539	0.005151	0.005151	0		

ctG	0.0928	0.0928	0	0.04449	0.04449	0
ctGI	$1.007 \cdot 10^{-18}$	$-1.372 \cdot 10^{-18}$	2.362	0.03504	0.03504	0
ctW	-0.5581	-0.5581	$3.584 \cdot 10^{-8}$	0.5922	0.5922	$1.689 \cdot 10^{-8}$
ctWI	$-1.949 \cdot 10^{-16}$	$1.189 \cdot 10^{-16}$	1.61	0.5464	0.5464	$1.83 \cdot 10^{-8}$
ctZ	0.01959	0.01959	$5.615 \cdot 10^{-7}$	0.003091	0.003091	$1.1\cdot 10^{-6}$
ctZI	$1.033 \cdot 10^{-18}$	$1.068 \cdot 10^{-18}$	-0.03403	0.003428	0.003428	$1.079 \cdot 10^{-6}$
ctb1	-0.02774	-0.02774	$-3.605 \cdot 10^{-8}$	0.4789	0.4789	0
ctb8	0.0201	0.0201	0	0.0002119	0.0002119	0
ctp	$-1.306 \cdot 10^{-5}$	$-1.306 \cdot 10^{-5}$	0	$6.089 \cdot 10^{-7}$	$6.089 \cdot 10^{-7}$	0
ctpI	$1.496 \cdot 10^{-21}$	$-3.573 \cdot 10^{-22}$	1.239	$6.906 \cdot 10^{-7}$	$6.906 \cdot 10^{-7}$	0
sm	0	0	0	0.9633	0.9633	$1.038 \cdot 10^{-8}$

## $1.51 \quad b\bar{b} \to u\bar{u}$

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cQbqu1	0	0	0	0.5	0.5	0	
cQbqu1I	0	0	0	0.5	0.5	0	
cQbqu1T	0	0	0	9.937	6.273	0.3688	
cQbqu1TI	0	0	0	9.937	6.273	0.3688	
cQbqu8	0	0	0	0.1111	0.1111	0	
cQbqu8I	0	0	0	0.1111	0.1111	0	
cQbqu8T	0	0	0	2.208	1.394	0.3688	
cQbqu8TI	0	0	0	2.208	1.394	0.3688	
cQq11	-0.1078	-0.1078	0	0.5271	0.5271	0	
cQq13	0.1189	0.1189	0	0.5815	0.5815	0	
cQq81	0.4324	0.4324	0	0.1459	0.1459	0	
cQq83	-0.005915	-0.005915	0	0.001991	0.001991	0	
cQu1	0.02125	0.02125	0	0.7303	0.7303	0	

cQu8	0.03714	0.03714	0	0.01253	0.01253	0
cbW	0.0001624	0.0001624	0	0.005129	0.005129	0
cbWI	$3.613 \cdot 10^{-18}$	$3.677 \cdot 10^{-18}$	-0.01772	0.004668	0.004668	0
cpQ3	0.0003772	0.0003772	0	$2.883 \cdot 10^{-5}$	$2.883 \cdot 10^{-5}$	0
cpQM	0.0006277	0.0006277	$1.593 \cdot 10^{-8}$	$1.808 \cdot 10^{-5}$	$1.808 \cdot 10^{-5}$	0
cpb	$6.493 \cdot 10^{-5}$	$6.493 \cdot 10^{-5}$	$-1.54 \cdot 10^{-8}$	$2.737 \cdot 10^{-5}$	$2.737 \cdot 10^{-5}$	$3.653 \cdot 10^{-8}$
sm	0	0	0	0.8803	0.8803	0

## 1.52 $b\bar{t} \rightarrow e^-\bar{\nu}_e$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
cQ131	0.02234	0.02234	0	0.1056	0.1056	0		
cbW	$9.514 \cdot 10^{-5}$	$9.514 \cdot 10^{-5}$	$1.051 \cdot 10^{-8}$	0.004127	0.004127	$2.423 \cdot 10^{-8}$		
cbWI	$-9.858 \cdot 10^{-20}$	$4.675 \cdot 10^{-20}$	1.474	0.004282	0.004282	0		
cblS1	0	0	0	0.08333	0.08333	0		
cblSI1	0	0	0	0.08333	0.08333	0		
cpQ3	$4.132 \cdot 10^{-5}$	$4.132 \cdot 10^{-5}$	$2.42 \cdot 10^{-8}$	$1.252 \cdot 10^{-6}$	$1.252 \cdot 10^{-6}$	0		
cptb	$-7.312 \cdot 10^{-7}$	$-7.312 \cdot 10^{-7}$	$1.368 \cdot 10^{-8}$	$6.275 \cdot 10^{-8}$	$6.275 \cdot 10^{-8}$	0		
cptbI	$2.303 \cdot 10^{-23}$	$-1.076 \cdot 10^{-23}$	1.467	$2.658 \cdot 10^{-6}$	$2.658 \cdot 10^{-6}$	0		
ctW	0.0008838	0.0008838	$1.131 \cdot 10^{-8}$	0.00233	0.00233	0		
ctWI	$2.591 \cdot 10^{-18}$	$4.296 \cdot 10^{-18}$	-0.658	0.004387	0.004387	0		
ctlS1	0	0	0	0.08333	0.08333	0		
ctlSI1	0	0	0	0.08333	0.08333	0		
ctlT1	0	0	0	0.3525	0.3525	0		
ctlTI1	0	0	0	1.134	1.134	0		
sm	0	0	0	$1.646 \cdot 10^{-5}$	$1.646 \cdot 10^{-5}$	0		

**1.53**  $c\bar{c} \to \mu^{+}\mu^{-}$ 

1.54  $c\bar{s} \rightarrow \tau^+ \nu_{\tau}$ 

1.55  $d\bar{d} \rightarrow c\bar{c}$ 

**1.56**  $d\bar{d} \to e^+e^-$ 

1.57  $d\bar{d} \rightarrow s\bar{s}$ 

  ${\tt sm} \qquad 0 \qquad 0 \qquad \qquad 0 \qquad \qquad 0.64 \quad 0.64 \qquad 0$ 

**1.58**  $e^+\nu_{\mu} \to e^+\nu_{\mu}$ 

**1.59**  $e^+\nu_e \to \mu^+\nu_\mu$ 

**1.60**  $e^+\nu_e \to e^+\nu_e$ 

**1.61**  $e^+\tau^- \to e^+\tau^-$ 

**1.62**  $e^+e^- \to \mu^+\mu^-$ 

0.04299

 $0.08027 \quad 0.08027$ 

 $-1.005 \cdot 10^{-17}$   $-9.617 \cdot 10^{-18}$ 

ctGI

1.67  $gg \rightarrow u\bar{u}$ 

1.68  $s\bar{s} \rightarrow \nu_{\tau}\bar{\nu}_{\tau}$ 

1.69  $s\bar{s} \rightarrow s\bar{s}$ 

1.70  $t\bar{t} \rightarrow \nu_{\mu}\bar{\nu}_{\mu}$ 

interference square 1 - mod2/mod1mod1mod2 mod1mod2 1 - mod2/mod1 $8.893 \cdot 10^{-8}$ cQ132 0.11240.11241.199 1.199 0 cQ1M2 0.059570.059570 0.31730.31730  $2.103 \cdot 10^{-5}$  $2.125 \cdot 10^{-8}$  $2.103 \cdot 10^{-5}$ срQМ -0.0004705-0.00047050  $8.532 \cdot 10^{-5}$  $8.532 \cdot 10^{-5}$  $-2.344 \cdot 10^{-8}$  $9.832 \cdot 10^{-6}$  $9.832 \cdot 10^{-6}$ cpt

ctW	$-1.731 \cdot 10^{-9}$	0	1	$5.385 \cdot 10^{-16}$	0	1
ctWI	$-1.106 \cdot 10^{-25}$	0	1	$1.989 \cdot 10^{-16}$	0	1
ctZ	-0.001026	-0.001026	$4.873 \cdot 10^{-7}$	0.001111	0.001111	$1.08 \cdot 10^{-6}$
ctZI	$-1.306 \cdot 10^{-20}$	$-1.581 \cdot 10^{-18}$	-120	0.0005451	0.0005451	$1.101 \cdot 10^{-6}$
ctl2	-0.02446	-0.02446	0	0.3056	0.3056	0
sm	0	0	0	0.0006844	0.0006844	0

## 1.71 $t\bar{t} \rightarrow \tau^+\tau^-$

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cQe3	-0.0137	-0.0137	0	0.286	0.286	0		
cQ1M3	-0.03827	-0.03827	0	0.161	0.161	0		
cpQM	$3.265 \cdot 10^{-5}$	$3.265 \cdot 10^{-5}$	$-6.125 \cdot 10^{-8}$	$4.014 \cdot 10^{-6}$	$4.014 \cdot 10^{-6}$	$-4.982 \cdot 10^{-8}$		
cpt	0.0001181	0.0001181	$-8.47 \cdot 10^{-8}$	$3.531 \cdot 10^{-6}$	$3.531 \cdot 10^{-6}$	$-2.832 \cdot 10^{-8}$		
ctW	0.008501	0.008501	$5.293 \cdot 10^{-7}$	0.01732	0.01732	$1.097 \cdot 10^{-6}$		
ctWI	$-4.075 \cdot 10^{-18}$	$-2.59 \cdot 10^{-18}$	0.3644	0.01379	0.01379	$1.16 \cdot 10^{-6}$		
ctZ	-0.006741	-0.006741	$5.341 \cdot 10^{-7}$	0.01455	0.01455	$1.1 \cdot 10^{-6}$		
ctZI	$-5.285 \cdot 10^{-19}$	$-1.506 \cdot 10^{-18}$	-1.849	0.006421	0.006421	$1.09 \cdot 10^{-6}$		
cte3	-0.028	-0.028	0	0.161	0.161	0		
ct13	-0.01169	-0.01169	0	0.1105	0.1105	0		
ct1S3	0.003341	0.003341	0	0.1668	0.1668	0		
ctlSI3	$2.516 \cdot 10^{-20}$	$4.879 \cdot 10^{-20}$	-0.939	0.1668	0.1668	0		
ctlT3	0.01156	0.01156	0	1.964	1.964	0		
ctlTI3	$5.285 \cdot 10^{-20}$	$-9.223 \cdot 10^{-20}$	2.745	1.964	1.964	0		
ctp	$-1.002 \cdot 10^{-6}$	$-1.002 \cdot 10^{-6}$	0	$3.101 \cdot 10^{-8}$	$3.101 \cdot 10^{-8}$	0		
ctpI	$-2.344 \cdot 10^{-23}$	$-3.676 \cdot 10^{-25}$	0.9843	$3.49 \cdot 10^{-8}$	$3.49 \cdot 10^{-8}$	0		
sm	0	0	0	0.006818	0.006818	0		

## 1.72 $t\bar{t} \rightarrow c\bar{c}$

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cQq11	0.2155	0.2155	0	0.9829	0.9829	0
cQq13	0.1719	0.1719	0	0.7834	0.7834	0
cQq81	0.2711	0.2711	0	0.08493	0.08493	0
cQq83	0.5944	0.5944	$1.682 \cdot 10^{-8}$	0.194	0.194	0
cQu1	0.004402	0.004402	$-2.272 \cdot 10^{-8}$	0.03655	0.03655	0
cQu8	0.03322	0.03322	0	0.004638	0.004638	0
cpQM	-0.001235	-0.001235	0	$3.276 \cdot 10^{-5}$	$3.276 \cdot 10^{-5}$	0
cpt	$-9.153 \cdot 10^{-5}$	$-9.153 \cdot 10^{-5}$	$1.093 \cdot 10^{-8}$	$1.805 \cdot 10^{-5}$	$1.805 \cdot 10^{-5}$	0
ctG	0.1977	0.1977	0	0.0434	0.0434	0
ctGI	$1.476 \cdot 10^{-24}$	$5.135 \cdot 10^{-27}$	0.9965	0.03395	0.03395	0
ctQqu1	0	0	0	0.5004	0.5004	$3.997 \cdot 10^{-8}$
ctQqu1I	0	0	0	0.5004	0.5004	$3.997 \cdot 10^{-8}$
ctQqu8	0	0	0	0.1112	0.1112	$-8.992 \cdot 10^{-8}$
ctQqu8I	0	0	0	0.1112	0.1112	$-8.992 \cdot 10^{-8}$
ctW	0.01184	0.01184	$4.223 \cdot 10^{-7}$	0.02573	0.02573	$9.717 \cdot 10^{-7}$
ctWI	$1.156 \cdot 10^{-10}$	$1.156 \cdot 10^{-10}$	$6.057 \cdot 10^{-7}$	0.0197	0.0197	$9.645 \cdot 10^{-7}$
ctZ	-0.005123	-0.005123	$5.465 \cdot 10^{-7}$	0.0174	0.0174	$1.092 \cdot 10^{-6}$
ctZI	$-1.012 \cdot 10^{-10}$	$-1.012 \cdot 10^{-10}$	$5.931 \cdot 10^{-7}$	0.0005143	0.0005143	$1.108 \cdot 10^{-6}$
ctq1	0.007485	0.007485	$1.336 \cdot 10^{-8}$	0.03655	0.03655	0
ctq8	0.02132	0.02132	0	0.0006196	0.0006196	0
ctu1	0.1131	0.1131	0	0.9829	0.9829	0
ctu8	0.5353	0.5353	0	0.1741	0.1741	0
sm	0	0	0	0.6047	0.6047	0

## 1.73 $t\bar{t} \rightarrow d\bar{d}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cQd1	-0.001712	-0.001712	0	0.001645	0.001645	0	
cQd8	0.1432	0.1432	0	0.04176	0.04176	0	
cQq11	-0.1292	-0.1292	0	0.6361	0.6361	0	
cQq13	0.04908	0.04908	$2.038 \cdot 10^{-8}$	0.2443	0.2443	0	
cQq81	0.1499	0.1499	0	0.044	0.044	0	
cQq83	-0.6636	-0.6636	0	0.2174	0.2174	0	
cQtqd1	0	0	0	0.5004	0.5004	0	
cQtqd1I	0	0	0	0.5004	0.5004	0	
cQtqd1T	0	0	0	14	4.073	0.7091	
cQtqd1TI	0	0	0	14	4.073	0.7091	
cQtqd8	0	0	0	0.1112	0.1112	0	
cQtqd8I	0	0	0	0.1112	0.1112	0	
cQtqd8T	0	0	0	3.111	0.905	0.7091	
cQtqd8TI	0	0	0	3.111	0.905	0.7091	
cpQM	-0.0009112	-0.0009112	$1.097 \cdot 10^{-8}$	$3.197 \cdot 10^{-5}$	$3.197 \cdot 10^{-5}$	0	
cpt	$4.51 \cdot 10^{-5}$	$4.51 \cdot 10^{-5}$	$-4.435 \cdot 10^{-8}$	$1.818 \cdot 10^{-5}$	$1.818 \cdot 10^{-5}$	0	
ctG	0.1977	0.1977	0	0.01155	0.01155	0	
ctGI	$4.595 \cdot 10^{-26}$	$-3.676 \cdot 10^{-25}$	9	0.002101	0.002101	0	
ctW	0.002784	0.002784	$-3.592 \cdot 10^{-8}$	0.006564	0.006564	$3.809 \cdot 10^{-7}$	
ctWI	$1.039 \cdot 10^{-15}$	$1.036 \cdot 10^{-15}$	0.003191	0.004859	0.004859	$3.91 \cdot 10^{-7}$	
ctZ	$-4.714 \cdot 10^{-5}$	$-4.714 \cdot 10^{-5}$	$-1.697 \cdot 10^{-7}$	0.005116	0.005116	$1.095 \cdot 10^{-6}$	
ctZI	$-1.199 \cdot 10^{-15}$	$-1.198 \cdot 10^{-15}$	0.0009999	0.002906	0.002906	$1.101 \cdot 10^{-6}$	
ctd1	-0.01172	-0.01172	0	0.198	0.198	0	
ctd8	0.1499	0.1499	0	0.044	0.044	0	
ctq1	-0.00469	-0.00469	$2.132 \cdot 10^{-8}$	0.04666	0.04666	0	
ctq8	0.2706	0.2706	0	0.08473	0.08473	0	
sm	0	0	0	0.8023	0.8023	0	

## 1.74 $t\bar{t} \rightarrow s\bar{s}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cQd1	-0.006026	-0.006026	$-1.659 \cdot 10^{-8}$	0.3098	0.3098	0	
cQd8	0.1901	0.1901	0	0.05759	0.05759	0	
cQq11	-0.1097	-0.1097	0	0.5408	0.5408	0	
cQq13	0.084	0.084	0	0.4151	0.4151	0	
cQq81	0.3959	0.3959	0	0.127	0.127	0	
cQq83	-0.1668	-0.1668	0	0.04971	0.04971	0	
cQtqd1	0	0	0	0.5004	0.5004	0	
cQtqd1I	0	0	0	0.5004	0.5004	0	
cQtqd1T	0	0	0	71.18	7.744	0.8912	
cQtqd1TI	0	0	0	71.18	7.744	0.8912	
cQtqd8	0	0	0	0.1112	0.1112	0	
cQtqd8I	0	0	0	0.1112	0.1112	0	
cQtqd8T	0	0	0	15.82	1.721	0.8912	
cQtqd8TI	0	0	0	15.82	1.721	0.8912	
cpQM	-0.0007726	-0.0007726	$1.294 \cdot 10^{-8}$	$2.724 \cdot 10^{-5}$	$2.724 \cdot 10^{-5}$	0	
cpt	0.0001363	0.0001363	0	$4.328 \cdot 10^{-5}$	$4.328 \cdot 10^{-5}$	$2.311 \cdot 10^{-8}$	
ctG	0.1977	0.1977	0	0.0455	0.0455	0	
ctGI	0	$6.617 \cdot 10^{-24}$	$\infty$	0.03605	0.03605	0	
ctW	0.005012	0.005012	$-9.976 \cdot 10^{-8}$	0.0053	0.005355	$3.735 \cdot 10^{-7}$	
ctWI	$5.662 \cdot 10^{-13}$	$5.662 \cdot 10^{-1}$	$7.258 \cdot 10^{-6}$	0.00296	0.002961	$3.715 \cdot 10^{-7}$	
ctZ	0.001006	0.001006	$5.962 \cdot 10^{-7}$	0.0035	0.00355	$1.099 \cdot 10^{-6}$	
ctZI	$-4.955 \cdot 10^{-13}$	$-4.955 \cdot 10^{-1}$	$-2.825 \cdot 10^{-6}$	0.00349	0.003492	$1.088 \cdot 10^{-6}$	
ctd1	-0.03305	-0.03305	0	0.5716	0.5716	0	
ctd8	0.3959	0.3959	0	0.127	0.127	0	
ctq1	-0.0004775	-0.000477	$5   3.351 \cdot 10^{-7}$	0.1914	0.1914	0	
ctq8	0.02383	0.02383	0	0.00146	0.001468	0	

 $\hspace{1.5cm} \text{sm} \hspace{1.5cm} 0 \hspace{1.5cm} 0 \hspace{1.5cm} 1.018 \hspace{1.5cm} 1.018 \hspace{1.5cm} 0 \\$ 

## 1.75 $t\bar{t} \rightarrow t\bar{t}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cQQ1	-9.579	-9.579	0	6.345	6.345	0	
cQQ8	-0.266	-0.266	0	0.2644	0.2644	$3.782 \cdot 10^{-8}$	
cQt1	-0.2943	-0.2943	0	13.44	13.44	0	
cQt8	-5.108	-5.108	0	1.791	1.791	0	
cpQM	0.03905	0.03905	0	0.008405	0.008405	0	
cpt	-0.07906	-0.07906	0	0.009077	0.009077	0	
ctG	0.141	0.141	0	0.1154	0.1154	0	
ctGI	$8.224 \cdot 10^{-18}$	$2.672 \cdot 10^{-18}$	0.6751	0.04616	0.04616	0	
ctW	-0.7539	-0.7539	$4.775 \cdot 10^{-7}$	0.86	0.86	$9.651 \cdot 10^{-7}$	
ctWI	$-5.361 \cdot 10^{-17}$	$-4.24 \cdot 10^{-18}$	0.9209	0.4736	0.4736	$9.713 \cdot 10^{-7}$	
ctZ	0.2223	0.2223	$5.399 \cdot 10^{-7}$	0.3584	0.3584	$1.116 \cdot 10^{-6}$	
ctZI	$-1.695 \cdot 10^{-17}$	$1.116 \cdot 10^{-16}$	7.587	0.03687	0.03687	$1.085 \cdot 10^{-6}$	
ctp	0.0778	0.0778	0	0.008701	0.008701	0	
ctpI	$5.01 \cdot 10^{-18}$	$-4.53 \cdot 10^{-18}$	1.904	0.004879	0.004879	0	
ctt1	-17.56	-17.56	0	25.38	25.38	0	
sm	0	0	0	5.609	5.609	0	

## 1.76 $u\bar{d} \rightarrow \mu^+ \nu_\mu$

1.77  $u\bar{d} \rightarrow c\bar{s}$ 

1.78  $u\bar{d} \rightarrow u\bar{d}$ 

1.79  $u\bar{u} \rightarrow \nu_e \bar{\nu}_e$ 

1.80  $u\bar{u} \rightarrow c\bar{c}$ 

1.81  $u\bar{u} \rightarrow u\bar{u}$ 

1.82  $zz \to W^+W^-$ 

1.83  $zz \rightarrow zz$ 

## 2 By parameter point

### 2.1 cQQ1

interference square 1 - mod2/mod11 - mod2/mod1mod1mod2 mod1mod2  $b\bar{b} \to b\bar{b}$  $-0.5124 \quad -0.5124$ 0.7540.7540  $b\bar{b} \to t\bar{t}$  $-0.0127 \quad -0.0127$ 0.0075360.0075360  $t\bar{t} \to t\bar{t}$ -9.579-9.5796.3456.3450 0

2.2 cQQ8

$b\bar{b}  o b\bar{b}$	-0.0001932	-0.0001932	0	0.001648	0.001648	$6.066 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	0.04887	0.04887	$-2.046 \cdot 10^{-8}$	0.03346	0.03346	0
$t\bar{t} \to t\bar{t}$	-0.266	-0.266	0	0.2644	0.2644	$3.782 \cdot 10^{-8}$

## 2.3 cQb1

		erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$b\bar{b}  o b\bar{b}$	0.09637	0.09637	$-2.075 \cdot 10^{-8}$	2.142	2.142	0
$b\bar{b} \to t\bar{t}$	-0.01366	-0.01366	$-7.322 \cdot 10^{-8}$	0.8373	0.8373	0

## 2.4 cQb8

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o b\bar{b}$	-2.536	-2.536	0	0.5412	0.5412	0	
$b\bar{b} \to t\bar{t}$	0.03347	0.03347	0	0.004733	0.004733	0	

## 2.5 cQbqu1

			interference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	0	0	0	0.25	0.25	0	
$b\bar{b} \to u\bar{u}$	0	0	0	0.5	0.5	0	

## 2.6 cQbqu1I

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$\bar{b}t \to \bar{d}u$	0	0	0	0.25	0.25	0
$b\bar{b} \to u\bar{u}$	0	0	0	0.5	0.5	0

## 2.7 cQbqu1T

	interference			square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \verb mod2  1 - \verb mod2  \verb mod1 $
$\bar{b}t \to \bar{d}u$	0	0	0	$32.27  2.848 \qquad  0.9117$
$b\bar{b} \to u\bar{u}$	0	0	0	$9.937  6.273 \qquad 0.3688$

## 2.8 cQbqu1TI

			interference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	0	0	0	32.27	2.848	0.9117	
$b\bar{b} \to u\bar{u}$	0	0	0	9.937	6.273	0.3688	

## 2.9 cQbqu8

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556	0.05556	0	
$b\bar{b} \to u\bar{u}$	0	0	0	0.1111	0.1111	0	

## 2.10 cQbqu8I

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556	0.05556	0
$b\bar{b} \to u\bar{u}$	0	0	0	0.1111	0.1111	0

## 2.11 cQbqu8T

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	0	0	0	7.17	0.6329	0.9117	
$b\bar{b} \to u\bar{u}$	0	0	0	2.208	1.394	0.3688	

## 2.12 cQbqu8TI

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	0	0	0	7.17	0.6329	0.9117	
$b\bar{b} \to u\bar{u}$	0	0	0	2.208	1.394	0.3688	

## $2.13 \quad \mathrm{cQd1}$

		inter	ference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
$b\bar{b} \to d\bar{d}$	-0.008201	-0.008201	$-2.439 \cdot 10^{-8}$	0.5637	0.5637	0		
$t\bar{t} \to d\bar{d}$	-0.001712	-0.001712	0	0.001645	0.001645	0		
$t\bar{t} \to s\bar{s}$	-0.006026	-0.006026	$-1.659 \cdot 10^{-8}$	0.3098	0.3098	0		

## 2.14 cQd8

$egin{aligned} bar{b} & ightarrow dar{d} \ tar{t} & ightarrow dar{d} \ tar{t} & ightarrow sar{s} \end{aligned}$ 2.15 cQe2	$\begin{array}{ccc} & & & & & \\ \text{mod1} & \text{mod2} & 1 - \text{mod2/mod1} \\ 0.0243 & 0.0243 & 0 \\ 0.1432 & 0.1432 & 0 \\ 0.1901 & 0.1901 & 0 \\ \end{array}$	$\begin{array}{cccc} & square \\ \text{mod1} & \text{mod2} & 1-\text{mod2/mod1} \\ 0.008195 & 0.008195 & 0 \\ 0.04176 & 0.04176 & 0 \\ 0.05759 & 0.05759 & 0 \\ \end{array}$
$bar{b} ightarrow \mu^+\mu^-$ 2.16 cQe3	$\begin{array}{ccc} & & & & & \\ \text{mod1} & & \text{mod2} & 1 - \text{mod2/mod1} \\ -0.002922 & -0.002922 & -3.422 \cdot 10^{-8} \end{array}$	$\begin{array}{ccc} \mathrm{square} \\ \mathrm{mod1} & \mathrm{mod2} & 1-\mathrm{mod2/mod1} \\ 0.06697 & 0.06697 & 0 \end{array}$
$tar{t} ightarrow au^+ au^-$ 2.17 cQl31	$\begin{array}{ccc} & & & & \\ \text{mod1} & \text{mod2} & 1 - \text{mod2/mod1} \\ -0.0137 & -0.0137 & 0 \end{array}$	$\begin{array}{ccc} \mathrm{square} \\ \mathrm{mod1} & \mathrm{mod2} & 1 - \mathrm{mod2/mod1} \\ 0.286 & 0.286 & 0 \end{array}$
$bar{t} ightarrow e^-ar{ u}_e$ 2.18 cQl32	$\begin{array}{ccc} & \text{interference} \\ \text{mod1} & \text{mod2} & 1 - \text{mod2/mod1} \\ 0.02234 & 0.02234 & 0 \end{array}$	$\begin{array}{ccc} \mathrm{square} \\ \mathrm{mod1} & \mathrm{mod2} & 1 - \mathrm{mod2/mod1} \\ 0.1056 & 0.1056 & 0 \end{array}$

$b\bar{b} \to \mu^+ \mu^-$	0.00775	0.00775	0	0.08163  0.08163	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.1124	0.1124	$8.893 \cdot 10^{-8}$	1.199   1.199	0

## 2.19 cQlM1

		inter	rference		squ	ıare
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$b\bar{b} \to \nu_e \bar{\nu}_e$	-0.005651	-0.005651	0	0.0242	0.0242	0

## 2.20 cQlM2

		in	nterference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to \mu^+\mu^-$	0.06012	0.06012	0	0.3166	0.3166	0		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.05957	0.05957	0	0.3173	0.3173	0		

## $2.21 \quad \text{cQlM3}$

		erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to \tau^+ \tau^-$	-0.03827	-0.03827	0	0.161	0.161	0

## $2.22 \quad \text{cQq11}$

		$in^{1}$	terference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$b\bar{b} \to d\bar{d}$	0.1355	0.1355	0	0.6187	0.6187	0	
$b\bar{b} \to u\bar{u}$	-0.1078	-0.1078	0	0.5271	0.5271	0	

$t\bar{t} \to c\bar{c}$	0.2155	0.2155	0	0.9829	0.9829	0
$t\bar{t} \to d\bar{d}$	-0.1292	-0.1292	0	0.6361	0.6361	0
$t\bar{t} \to s\bar{s}$	-0.1097	-0.1097	0	0.5408	0.5408	0

## $2.23 \quad \mathrm{cQq} 13$

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$\bar{b}t \to \bar{d}u$	0.1065	0.1065	0	0.5032	0.5032	0		
$b\bar{b} \to d\bar{d}$	0.01439	0.01439	0	0.06572	0.06572	0		
$b\bar{b} \to u\bar{u}$	0.1189	0.1189	0	0.5815	0.5815	0		
$t\bar{t} \to c\bar{c}$	0.1719	0.1719	0	0.7834	0.7834	0		
$t\bar{t} \to d\bar{d}$	0.04908	0.04908	$2.038 \cdot 10^{-8}$	0.2443	0.2443	0		
$t\bar{t} \to s\bar{s}$	0.084	0.084	0	0.4151	0.4151	0		

## $2.24 \quad \text{cQq}81$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o d\bar{d}$	0.2706	0.2706	0	0.09133	0.09133	0		
$b\bar{b} \to u\bar{u}$	0.4324	0.4324	0	0.1459	0.1459	0		
$t\bar{t} \to c\bar{c}$	0.2711	0.2711	0	0.08493	0.08493	0		
$t\bar{t} \to d\bar{d}$	0.1499	0.1499	0	0.044	0.044	0		
$t\bar{t} \to s\bar{s}$	0.3959	0.3959	0	0.127	0.127	0		

## $2.25 \quad \mathrm{cQq83}$

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	$6.809 \cdot 10^{-11}$	$6.523 \cdot 10^{-20}$	1	0.01073	0.01073	0
$b\bar{b} \to d\bar{d}$	0.04091	0.04091	0	0.0138	0.0138	0
$b\bar{b} \to u\bar{u}$	-0.005915	-0.005915	0	0.001991	0.001991	0
$t\bar{t} \to c\bar{c}$	0.5944	0.5944	$1.682 \cdot 10^{-8}$	0.194	0.194	0
$t\bar{t} \to d\bar{d}$	-0.6636	-0.6636	0	0.2174	0.2174	0
$t\bar{t} \to s\bar{s}$	-0.1668	-0.1668	0	0.04971	0.04971	0

### 2.26 cQt1

		$in^{1}$	terference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	-0.1263	-0.1263	0	0.09471	0.09471	0	
$t \bar t  o t \bar t$	-0.2943	-0.2943	0	13.44	13.44	0	

## 2.27 cQt8

		interior	erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	-0.08706	-0.08706	0	0.004733	0.004733	0	
$t\bar{t} \to t\bar{t}$	-5.108	-5.108	0	1.791	1.791	0	

## 2.28 cQtQb1

# 2.29 cQtQb1I

		interfe		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o t\bar{t}$	$8.375 \cdot 10^{-19}$	$8.626 \cdot 10^{-19}$	-0.02989	0.5196	0.5196	0	

# 2.30 cQtQb8

		inte	rference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	0.0004577	0.0004577	0	0.1392	0.1392	0	

## 2.31 cQtQb8I

		interfe		square			
	mod1	mod2	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to t\bar{t}$	$1.337 \cdot 10^{-18}$	$1.924 \cdot 10^{-18}$	-0.439	0.1317	0.1317	0	

# 2.32 cQtqd1

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.25	0.25	0		
$t\bar{t} \to d\bar{d}$	0	0	0	0.5004	0.5004	0		
$t\bar{t} \to s\bar{s}$	0	0	0	0.5004	0.5004	0		

### 2.33 cQtqd1I

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.25	0.25	0		
$t\bar{t} \to d\bar{d}$	0	0	0	0.5004	0.5004	0		
$t\bar{t} \to s\bar{s}$	0	0	0	0.5004	0.5004	0		

# 2.34 cQtqd1T

			interference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	0	0	0	32.27	2.848	0.9117	
$t\bar{t} \to d\bar{d}$	0	0	0	14	4.073	0.7091	
$t\bar{t} \to s\bar{s}$	0	0	0	71.18	7.744	0.8912	

# $2.35 \quad \mathrm{cQtqd1TI}$

			interference	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	0	0	0	32.27	2.848	0.9117
$t\bar{t} \to d\bar{d}$	0	0	0	14	4.073	0.7091
$t\bar{t} \to s\bar{s}$	0	0	0	71.18	7.744	0.8912

# $\mathbf{2.36} \quad \mathbf{cQtqd8}$

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556	0.05556	0		
$t\bar{t} \to d\bar{d}$	0	0	0	0.1112	0.1112	0		
$t\bar{t} \to s\bar{s}$	0	0	0	0.1112	0.1112	0		

## 2.37 cQtqd8I

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556	0.05556	0		
$t\bar{t} \to d\bar{d}$	0	0	0	0.1112	0.1112	0		
$t\bar{t} \to s\bar{s}$	0	0	0	0.1112	0.1112	0		

## $2.38 \quad cQtqd8T$

			interference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$\bar{b}t \to \bar{d}u$	0	0	0	7.17	0.6329	0.9117	
$t\bar{t} \to d\bar{d}$	0	0	0	3.111	0.905	0.7091	
$t\bar{t} \to s\bar{s}$	0	0	0	15.82	1.721	0.8912	

## $2.39 \quad cQtqd8TI$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	7.17	0.6329	0.9117		
$t\bar{t} \to d\bar{d}$	0	0	0	3.111	0.905	0.7091		
$t\bar{t} \to s\bar{s}$	0	0	0	15.82	1.721	0.8912		

### 2.40 cQu1

$b\bar{b} \to u\bar{u}$	0.02125	0.02125	0	0.7303	0.7303	0
$t\bar{t} \to c\bar{c}$	0.004402	0.004402	$-2.272 \cdot 10^{-8}$	0.03655	0.03655	0

### 2.41 cQu8

		in	nterference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to u\bar{u}$	0.03714	0.03714	0	0.01253	0.01253	0	
$t\bar{t} \to c\bar{c}$	0.03322	0.03322	0	0.004638	0.004638	0	

### $2.42 \quad cbQqd1$

			interference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	0	0	0	0.25	0.25	$4 \cdot 10^{-8}$	
$b\bar{b} \to d\bar{d}$	0	0	0	0.5	0.5	$4 \cdot 10^{-8}$	

## $2.43 \quad cbQqd1I$

		interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.25	0.25	$4 \cdot 10^{-8}$		
$b\bar{b} \to d\bar{d}$	0	0	0	0.5	0.5	$4 \cdot 10^{-8}$		

### 2.44 cbQqd8

$\bar{b}t \to \bar{d}u$	0	0	0	0.05556	0.05556	$-1.26 \cdot 10^{-7}$
$b\bar{b}  o d\bar{d}$	0	0	0	0.1111	0.1111	$-9 \cdot 10^{-8}$

# $2.45 \quad cbQqd8I$

			interference	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\mathtt{mod1}  \mathtt{mod2}  1-\mathtt{mod2}/\mathtt{mod1}$
$\bar{b}t \to \bar{d}u$	0	0	0	$0.05556  0.05556  -1.26 \cdot 10^{-7}$
$b\bar{b} \to d\bar{d}$	0	0	0	$0.1111  0.1111  -9 \cdot 10^{-8}$

# 2.46 cbW

		interfer	ence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
$HH \to W^+ \bar{t} b$	$3.324 \cdot 10^{-8}$	$3.324 \cdot 10^{-8}$	0	$2.144 \cdot 10^{-5}$ $2.144 \cdot 10^{-5}$ 0
$HH  o z \bar{b} b$	$8.401 \cdot 10^{-8}$	$8.401 \cdot 10^{-8}$	$1.19 \cdot 10^{-8}$	$6.91 \cdot 10^{-7}$ $6.91 \cdot 10^{-7}$ 0
$HW^+ \to \gamma t \bar{b}$	$2.878 \cdot 10^{-9}$	$2.878 \cdot 10^{-9}$	0	$4.017 \cdot 10^{-6}$ $4.017 \cdot 10^{-6}$ $-2.49 \cdot 10^{-8}$
$HW^-  o \bar{t}b$	-0.05332	-0.05332	0	$0.1119$ $0.1119$ $8.937 \cdot 10^{-8}$
$H\gamma  o b\bar{b}$	$-1.46 \cdot 10^{-6}$	$-1.46 \cdot 10^{-6}$	0	$0.6603 \qquad 0.6603 \qquad -1.514 \cdot 10^{-8}$
$Hz  o b\bar{b}$	0.001412	0.001412	$7.08 \cdot 10^{-8}$	0.229 $0.229$ $0$
$W^+W^- \to H b \bar b$	$-3.023 \cdot 10^{-7}$	$-3.023 \cdot 10^{-7}$	0	$8.273 \cdot 10^{-7}  8.273 \cdot 10^{-7} \qquad 0$
$W^+W^-  o H t \bar t$	$-5.461 \cdot 10^{-8}$	$-5.461 \cdot 10^{-8}$	$3.663 \cdot 10^{-8}$	$2.329 \cdot 10^{-8}  2.329 \cdot 10^{-8}$
$\bar{b}t \to \bar{d}u$	0.0002602	0.0002602	0	0.013 $0.013$ $0$
$b\bar{b} \to \gamma \gamma$	$6.414 \cdot 10^{-6}$	$6.414 \cdot 10^{-6}$	$-4.677 \cdot 10^{-8}$	$0.0006187  0.0006187  -3.233 \cdot 10^{-8}$
$b\bar{b} \to \mu^+ \mu^-$	$5.971 \cdot 10^{-5}$	$5.971 \cdot 10^{-5}$	$1.675 \cdot 10^{-8}$	$0.001071 \qquad 0.001071 \qquad 0$
$b\bar{b} \to \nu_e \bar{\nu}_e$	$8.063 \cdot 10^{-5}$	$8.063 \cdot 10^{-5}$	$1.24 \cdot 10^{-8}$	$0.0002271 \qquad 0.0002271 \qquad 0$
$b\bar{b}  o b\bar{b}$	-0.02371	-0.02371	0	$0.3266$ $0.3266$ $3.062 \cdot 10^{-8}$
$b\bar{b} \to d\bar{d}$	0.0001807	0.0001807	0	$0.00434 \qquad 0.00434 \qquad 0$
$b\bar{b} \to t\bar{t}$	0.007927	0.007927	0	$0.2245 \qquad 0.2245 \qquad 0$

$b\bar{b} \to u\bar{u}$	0.0001624	0.0001624	0	0.005129	0.005129	0
$b\bar{t} \to e^- \bar{\nu}_e$	$9.514 \cdot 10^{-5}$	$9.514 \cdot 10^{-5}$	$1.051 \cdot 10^{-8}$	0.004127	0.004127	$2.423 \cdot 10^{-8}$

### 2.47 cbWI

		interfere		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to W^+ \bar{t} b$	$-1.753 \cdot 10^{-7}$	$-1.753 \cdot 10^{-7}$	0	$1.198 \cdot 10^{-5}$	$1.198 \cdot 10^{-5}$	0	
$HH \to z\bar{b}b$	$1.425 \cdot 10^{-8}$	$1.425 \cdot 10^{-8}$	$7.017 \cdot 10^{-8}$	$1.551 \cdot 10^{-6}$	$1.551 \cdot 10^{-6}$	$6.448 \cdot 10^{-8}$	
$HW^+ \to \gamma t \bar{b}$	$-9.51 \cdot 10^{-9}$	$-9.51 \cdot 10^{-9}$	$3.155 \cdot 10^{-8}$	$1.769 \cdot 10^{-6}$	$1.769 \cdot 10^{-6}$	0	
$HW^- \to \bar{t}b$	$1.407 \cdot 10^{-6}$	$1.407 \cdot 10^{-6}$	0	2.074	2.074	0	
$H\gamma  o b\bar{b}$	$5.584 \cdot 10^{-20}$	$5.488 \cdot 10^{-20}$	0.01718	0.2375	0.2375	0	
$Hz \to b\bar{b}$	$2.529 \cdot 10^{-6}$	$2.529 \cdot 10^{-6}$	0	1.417	1.417	0	
$W^+W^-  o Hbar b$	$-2.49 \cdot 10^{-8}$	$-2.49 \cdot 10^{-8}$	0	$3.21 \cdot 10^{-6}$	$3.21 \cdot 10^{-6}$	0	
$W^+W^-  o H t \bar t$	$2.531 \cdot 10^{-9}$	$2.531 \cdot 10^{-9}$	$3.951 \cdot 10^{-8}$	$1.603 \cdot 10^{-8}$	$1.603 \cdot 10^{-8}$	0	
$\bar{b}t \to \bar{d}u$	$-3.327 \cdot 10^{-20}$	$-1.726 \cdot 10^{-19}$	-4.186	0.01232	0.01232	0	
$b\bar{b}  o \gamma \gamma$	$-1.643 \cdot 10^{-22}$	$-6.472 \cdot 10^{-22}$	-2.938	0.0006186	0.0006186	$-3.233 \cdot 10^{-8}$	
$b\bar{b}  o \mu^+\mu^-$	$4.554 \cdot 10^{-16}$	$4.554 \cdot 10^{-16}$	$5.674 \cdot 10^{-5}$	0.002095	0.002095	0	
$b\bar{b}  o  u_e \bar{ u}_e$	$-3.527 \cdot 10^{-20}$	$-1.31 \cdot 10^{-20}$	0.6287	0.001787	0.001787	0	
$b\bar{b}  o b\bar{b}$	$1.336 \cdot 10^{-18}$	$1.565 \cdot 10^{-18}$	-0.1717	0.08699	0.08699	0	
$b\bar{b} \to d\bar{d}$	$1.003 \cdot 10^{-17}$	$1.024 \cdot 10^{-17}$	-0.02146	0.004928	0.004928	0	
$b\bar{b}  o t\bar{t}$	$1.679 \cdot 10^{-18}$	$4.056 \cdot 10^{-18}$	-1.416	0.009533	0.009533	0	
$b\bar{b} \to u\bar{u}$	$3.613 \cdot 10^{-18}$	$3.677 \cdot 10^{-18}$	-0.01772	0.004668	0.004668	0	
$b\bar{t} \to e^-\bar{\nu}_e$	$-9.858 \cdot 10^{-20}$	$4.675 \cdot 10^{-20}$	1.474	0.004282	0.004282	0	

### 2.48 cblS1

 $b\bar{t} \to e^- \bar{\nu}_e$  0 0 0 0.08333 0.08333 0

#### 2.49 cblS2

#### 2.50 cblSI1

#### 2.51 cblSI2

#### 2.52 cbtud1

#### 2.53 cbtud1I

			interference	square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\mathtt{mod1}  \mathtt{mod2}  1-\mathtt{mod2}/\mathtt{mod}$	d1
$\bar{b}t \to \bar{d}u$	0	0	0	$0.008708  0.008708  -2.297 \cdot 10^{-1}$	-8

## 2.54 cbtud8

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
$\bar{b}t \to \bar{d}u$	0	0	0	0.001935	0.001935	$-2.067 \cdot 10^{-7}$		

## 2.55 cbtud8I

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.001935	0.001935	$-2.067 \cdot 10^{-7}$		

## $2.56 \quad \mathrm{cpQ3}$

		interfer	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $			
$HH  o W^+ \bar t b$	$8.575 \cdot 10^{-6}$	$8.575 \cdot 10^{-6}$	0	$6.628 \cdot 10^{-6}  6.628 \cdot 10^{-6}$			
$HH \to z\bar{b}b$	$1.522 \cdot 10^{-6}$	$1.522 \cdot 10^{-6}$	0	$1.018 \cdot 10^{-6}$ $1.018 \cdot 10^{-6}$ 0			
$HW^+  o \gamma t \bar{b}$	$-4.117 \cdot 10^{-8}$	$-4.117 \cdot 10^{-8}$	0	$2.222 \cdot 10^{-8}  2.222 \cdot 10^{-8}$			
$HW^-  o \bar{t}b$	-0.9216	-0.9216	0	1.686   1.686   0			
$Hz  o b\bar{b}$	0.2696	0.2696	0	2.355 $2.355$ $0$			
$W^+W^- \to H b \bar b$	$-4.333 \cdot 10^{-6}$	$-4.333 \cdot 10^{-6}$	0	$7.67 \cdot 10^{-7}$ $7.67 \cdot 10^{-7}$ 0			
$W^+W^- \to H t \bar t$	$3.283 \cdot 10^{-5}$	$3.283 \cdot 10^{-5}$	0	$4.168 \cdot 10^{-5}  4.168 \cdot 10^{-5}$			
$\bar{b}t \to \bar{d}u$	0.002789	0.002789	$3.586 \cdot 10^{-8}$	$8.453 \cdot 10^{-5}$ $8.453 \cdot 10^{-5}$ $1.183 \cdot 10^{-8}$			

$b\bar{b} \to \mu^+ \mu^-$	0.00023	0.00023	0	$1.307 \cdot 10^{-5}$	$1.307 \cdot 10^{-5}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$9.476 \cdot 10^{-5}$	$9.476 \cdot 10^{-5}$	0	$6.805 \cdot 10^{-6}$	$6.805 \cdot 10^{-6}$	0
$b\bar{b}  o b\bar{b}$	-0.1084	-0.1084	0	0.005196	0.005196	0
$b\bar{b} \to d\bar{d}$	0.002025	0.002025	0	0.0001311	0.0001311	0
$b\bar{b}  o t\bar{t}$	-0.01611	-0.01611	0	0.003652	0.003652	0
$b\bar{b} \to u\bar{u}$	0.0003772	0.0003772	0	$2.883 \cdot 10^{-5}$	$2.883 \cdot 10^{-5}$	0
$b\bar{t} \to e^-\bar{\nu}_e$	$4.132 \cdot 10^{-5}$	$4.132 \cdot 10^{-5}$	$2.42 \cdot 10^{-8}$	$1.252 \cdot 10^{-6}$	$1.252 \cdot 10^{-6}$	0

# 2.57 cpQM

		ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to z\bar{b}b$	$7.904 \cdot 10^{-6}$	$7.904 \cdot 10^{-6}$	$1.265 \cdot 10^{-8}$	$2.173 \cdot 10^{-5}$	$2.173 \cdot 10^{-5}$	0	
$HH \to z t \bar{t}$	$9.632 \cdot 10^{-5}$	$9.632 \cdot 10^{-5}$	0	0.0001012	0.0001012	0	
$Hz  o b ar{b}$	0.04346	0.04346	0	0.1954	0.1954	0	
$Hz \to t\bar{t}$	1.846	1.846	0	0.4705	0.4705	0	
$W^+W^- \to H b \bar b$	$-1.675 \cdot 10^{-6}$	$-1.675 \cdot 10^{-6}$	0	$5.296 \cdot 10^{-8}$	$5.296 \cdot 10^{-8}$	$1.888 \cdot 10^{-8}$	
$W^+W^-  o H t \bar t$	$-1.916 \cdot 10^{-6}$	$-1.916 \cdot 10^{-6}$	0	$1.274 \cdot 10^{-6}$	$1.274 \cdot 10^{-6}$	0	
$b\bar{b}  o \mu^+\mu^-$	0.0002072	0.0002072	0	$4.955 \cdot 10^{-6}$	$4.955 \cdot 10^{-6}$	$2.018 \cdot 10^{-8}$	
$b\bar{b}  o  u_e \bar{ u}_e$	0.000618	0.000618	$1.618 \cdot 10^{-8}$	$2.219 \cdot 10^{-5}$	$2.219 \cdot 10^{-5}$	0	
b ar b  o b ar b	-0.09504	-0.09504	0	0.006656	0.006656	0	
$b\bar{b}  o d\bar{d}$	0.0009599	0.0009599	$1.042 \cdot 10^{-8}$	$3.108 \cdot 10^{-5}$	$3.108 \cdot 10^{-5}$	0	
$b\bar{b}  o t\bar{t}$	-0.0008057	-0.0008057	$-1.241 \cdot 10^{-8}$	$1.827 \cdot 10^{-6}$	$1.827 \cdot 10^{-6}$	$-5.473 \cdot 10^{-8}$	
$b\bar{b} \to u\bar{u}$	0.0006277	0.0006277	$1.593 \cdot 10^{-8}$	$1.808 \cdot 10^{-5}$	$1.808 \cdot 10^{-5}$	0	
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0004705	-0.0004705	$2.125 \cdot 10^{-8}$	$2.103 \cdot 10^{-5}$	$2.103 \cdot 10^{-5}$	0	
$t\bar{t} \to \tau^+ \tau^-$	$3.265 \cdot 10^{-5}$	$3.265 \cdot 10^{-5}$	$-6.125 \cdot 10^{-8}$	$4.014 \cdot 10^{-6}$	$4.014 \cdot 10^{-6}$	$-4.982 \cdot 10^{-8}$	
$t\bar{t} \to c\bar{c}$	-0.001235	-0.001235	0	$3.276 \cdot 10^{-5}$	$3.276 \cdot 10^{-5}$	0	
$t\bar{t} \to d\bar{d}$	-0.0009112	-0.0009112	$1.097 \cdot 10^{-8}$	$3.197 \cdot 10^{-5}$	$3.197 \cdot 10^{-5}$	0	
t ar t  o s ar s	-0.0007726	-0.0007726	$1.294 \cdot 10^{-8}$	$2.724 \cdot 10^{-5}$	$2.724 \cdot 10^{-5}$	0	

 $t\bar{t} \to t\bar{t}$  0.03905 0.03905 0 0.008405 0.008405 0

# 2.58 cpb

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z\bar{b}b$	$-9.775 \cdot 10^{-7}$	$-9.775 \cdot 10^{-7}$	$-2.046 \cdot 10^{-8}$	$4.534 \cdot 10^{-6}$	$4.534 \cdot 10^{-6}$	0		
$Hz \to b\bar{b}$	-0.01636	-0.01636	0	0.4194	0.4194	0		
$W^+W^- \to H b \bar b$	$-1.65 \cdot 10^{-8}$	$-1.65 \cdot 10^{-8}$	0	$1.564 \cdot 10^{-7}$	$1.564 \cdot 10^{-7}$	0		
$b\bar{b} \to \mu^+ \mu^-$	$6.38 \cdot 10^{-6}$	$6.38 \cdot 10^{-6}$	$9.404 \cdot 10^{-8}$	$3.248 \cdot 10^{-6}$	$3.248 \cdot 10^{-6}$	0		
$b\bar{b} \to \nu_e \bar{\nu}_e$	$-9.464 \cdot 10^{-5}$	$-9.464 \cdot 10^{-5}$	$-2.113 \cdot 10^{-8}$	$1.842 \cdot 10^{-5}$	$1.842 \cdot 10^{-5}$	0		
$b\bar{b}  o b\bar{b}$	0.0003206	0.0003206	$-3.119 \cdot 10^{-8}$	0.000236	0.000236	0		
$b\bar{b} \to d\bar{d}$	$-6.033 \cdot 10^{-5}$	$-6.033 \cdot 10^{-5}$	$-1.657 \cdot 10^{-8}$	$2.835 \cdot 10^{-5}$	$2.835 \cdot 10^{-5}$	0		
$b\bar{b} \to t\bar{t}$	$7.141 \cdot 10^{-5}$	$7.141 \cdot 10^{-5}$	$-1.4\cdot10^{-8}$	$3.104 \cdot 10^{-5}$	$3.104 \cdot 10^{-5}$	$3.221 \cdot 10^{-8}$		
$b\bar{b} \to u\bar{u}$	$6.493 \cdot 10^{-5}$	$6.493 \cdot 10^{-5}$	$-1.54 \cdot 10^{-8}$	$2.737 \cdot 10^{-5}$	$2.737 \cdot 10^{-5}$	$3.653 \cdot 10^{-8}$		

## 2.59 cpt

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z t \bar t$	$-1.814 \cdot 10^{-5}$	$-1.814 \cdot 10^{-5}$	0	$2.131 \cdot 10^{-5}$	$2.131 \cdot 10^{-5}$	0		
$Hz \to t\bar{t}$	-2.207	-2.207	0	1.347	1.347	0		
$W^+W^-  o H t \bar t$	$-1.137 \cdot 10^{-6}$	$-1.137 \cdot 10^{-6}$	0	$8.781 \cdot 10^{-7}$	$8.781 \cdot 10^{-7}$	0		
$b\bar{b} \to t\bar{t}$	-0.001455	-0.001455	0	$1.966 \cdot 10^{-5}$	$1.966 \cdot 10^{-5}$	$5.087 \cdot 10^{-8}$		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$8.532 \cdot 10^{-5}$	$8.532 \cdot 10^{-5}$	$-2.344 \cdot 10^{-8}$	$9.832 \cdot 10^{-6}$	$9.832 \cdot 10^{-6}$	0		
$t\bar{t} \to \tau^+ \tau^-$	0.0001181	0.0001181	$-8.47 \cdot 10^{-8}$	$3.531 \cdot 10^{-6}$	$3.531 \cdot 10^{-6}$	$-2.832 \cdot 10^{-8}$		
$t\bar{t} \to c\bar{c}$	$-9.153 \cdot 10^{-5}$	$-9.153 \cdot 10^{-5}$	$1.093 \cdot 10^{-8}$	$1.805 \cdot 10^{-5}$	$1.805 \cdot 10^{-5}$	0		
$t\bar{t} \to d\bar{d}$	$4.51 \cdot 10^{-5}$	$4.51 \cdot 10^{-5}$	$-4.435 \cdot 10^{-8}$	$1.818 \cdot 10^{-5}$	$1.818 \cdot 10^{-5}$	0		
$t\bar{t} \to s\bar{s}$	0.0001363	0.0001363	0	$4.328 \cdot 10^{-5}$	$4.328 \cdot 10^{-5}$	$2.311 \cdot 10^{-8}$		

# 2.60 cptb

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+ \bar t b$	$-2.558 \cdot 10^{-6}$	$-2.558 \cdot 10^{-6}$	0	$8.453 \cdot 10^{-6}$	$8.453 \cdot 10^{-6}$	$1.183 \cdot 10^{-8}$		
$HW^+ \to \gamma t \bar{b}$	$-6.607 \cdot 10^{-9}$	$-6.607 \cdot 10^{-9}$	$-1.514 \cdot 10^{-8}$	$2.143 \cdot 10^{-8}$	$2.143 \cdot 10^{-8}$	$-4.666 \cdot 10^{-8}$		
$HW^- \to \bar{t}b$	-0.02233	-0.02233	0	0.03872	0.03872	0		
$W^+W^- \to H b \bar b$	$-2.883 \cdot 10^{-7}$	$-2.883 \cdot 10^{-7}$	0	$4.847 \cdot 10^{-7}$	$4.847 \cdot 10^{-7}$	0		
$W^+W^-  o H t \bar t$	$3.76 \cdot 10^{-8}$	$3.76 \cdot 10^{-8}$	0	$1.016 \cdot 10^{-9}$	$1.016 \cdot 10^{-9}$	0		
$\bar{b}t \to \bar{d}u$	$-2.193 \cdot 10^{-6}$	$-2.193 \cdot 10^{-6}$	0	$3.362 \cdot 10^{-5}$	$3.362 \cdot 10^{-5}$	0		
$b\bar{b}  o t\bar{t}$	-0.0007142	-0.0007142	0	0.0005595	0.0005595	0		
$b\bar{t} \to e^- \bar{\nu}_e$	$-7.312 \cdot 10^{-7}$	$-7.312 \cdot 10^{-7}$	$1.368 \cdot 10^{-8}$	$6.275 \cdot 10^{-8}$	$6.275 \cdot 10^{-8}$	0		

# 2.61 cptbI

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^+ \bar{t} b$	$-1.029 \cdot 10^{-7}$	$-1.029 \cdot 10^{-7}$	0	$6.474 \cdot 10^{-6}$	$6.474 \cdot 10^{-6}$	0		
$HW^+  o \gamma t \bar{b}$	$5.157 \cdot 10^{-10}$	$5.157 \cdot 10^{-10}$	$-1.939 \cdot 10^{-8}$	$4.946 \cdot 10^{-9}$	$4.946 \cdot 10^{-9}$	0		
$HW^- \to \bar{t}b$	$-8.83 \cdot 10^{-6}$	$-8.83 \cdot 10^{-6}$	0	0.182	0.182	0		
$W^+W^-  o Hb\bar{b}$	$-1.177 \cdot 10^{-8}$	$-1.177 \cdot 10^{-8}$	0	$4.208 \cdot 10^{-7}$	$4.208 \cdot 10^{-7}$	0		
$W^+W^-  o Ht\bar{t}$	$-3.481 \cdot 10^{-8}$	$-3.481 \cdot 10^{-8}$	0	$3.398 \cdot 10^{-9}$	$3.398 \cdot 10^{-9}$	0		
$\bar{b}t \to \bar{d}u$	$1.983 \cdot 10^{-21}$	$9.019 \cdot 10^{-22}$	0.5452	$2.762 \cdot 10^{-6}$	$2.762 \cdot 10^{-6}$	$3.621 \cdot 10^{-8}$		
$b\bar{b}  o t\bar{t}$	$-6.312 \cdot 10^{-20}$	$3.402 \cdot 10^{-20}$	1.539	0.005151	0.005151	0		
$b\bar{t} \to e^- \bar{\nu}_e$	$2.303 \cdot 10^{-23}$	$-1.076 \cdot 10^{-23}$	1.467	$2.658 \cdot 10^{-6}$	$2.658 \cdot 10^{-6}$	0		

# 2.62 ctG

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to t\bar{t}$	0.0928	0.0928	0	0.04449	0.04449	0		
$gg \to t\bar{t}$	0.1264	0.1264	0	0.08575	0.08575	0		
$t\bar{t} \to c\bar{c}$	0.1977	0.1977	0	0.0434	0.0434	0		
$t\bar{t} \to d\bar{d}$	0.1977	0.1977	0	0.01155	0.01155	0		
$t \bar t  o s \bar s$	0.1977	0.1977	0	0.0455	0.0455	0		
$t\bar{t} \to t\bar{t}$	0.141	0.141	0	0.1154	0.1154	0		

# 2.63 ctGI

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	$1.007 \cdot 10^{-18}$	$-1.372 \cdot 10^{-18}$	2.362	0.03504	0.03504	0	
$gg  o t \bar t$	$-1.005 \cdot 10^{-17}$	$-9.617 \cdot 10^{-18}$	0.04299	0.08027	0.08027	0	
$t\bar{t} \to c\bar{c}$	$1.476 \cdot 10^{-24}$	$5.135 \cdot 10^{-27}$	0.9965	0.03395	0.03395	0	
$t\bar{t} \to d\bar{d}$	$4.595 \cdot 10^{-26}$	$-3.676 \cdot 10^{-25}$	9	0.002101	0.002101	0	
$t\bar{t} \to s\bar{s}$	0	$6.617 \cdot 10^{-24}$	$\infty$	0.03605	0.03605	0	
$t\bar{t} \to t\bar{t}$	$8.224 \cdot 10^{-18}$	$2.672 \cdot 10^{-18}$	0.6751	0.04616	0.04616	0	

# 2.64 ctQqu1

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
$\bar{b}t \to \bar{d}u$	0	0	0	0.25	0.25	$4 \cdot 10^{-8}$		
$t\bar{t} \to c\bar{c}$	0	0	0	0.5004	0.5004	$3.997 \cdot 10^{-8}$		

# $2.65 \quad ctQqu1I$

			interference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$\bar{b}t \to \bar{d}u$	0	0	0	0.25	0.25	$4 \cdot 10^{-8}$	
$t\bar{t} \to c\bar{c}$	0	0	0	0.5004	0.5004	$3.997 \cdot 10^{-8}$	

# 2.66 ctQqu8

			interference		square			
	mod1	$\mathtt{mod1}  \mathtt{mod2}  1 - \mathtt{mod2}/\mathtt{mod1}$		mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556	0.05556	$-1.26 \cdot 10^{-7}$		
$t\bar{t} \to c\bar{c}$	0	0	0	0.1112	0.1112	$-8.992 \cdot 10^{-8}$		

## 2.67 ctQqu8I

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556	0.05556	$-1.26 \cdot 10^{-7}$		
$t\bar{t} \to c\bar{c}$	0	0	0	0.1112	0.1112	$-8.992 \cdot 10^{-8}$		

## 2.68 ctW

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^+ \bar{t} b$	$2.416 \cdot 10^{-5}$	$2.416 \cdot 10^{-5}$	0	$1.481 \cdot 10^{-5}$	$1.481 \cdot 10^{-5}$	0		
$HH \to z t \bar{t}$	$3.71 \cdot 10^{-13}$	0	1	$1.67 \cdot 10^{-17}$	0	1		
$HW^+ \to \gamma t \bar{b}$	$-7.207 \cdot 10^{-6}$	$-7.207 \cdot 10^{-6}$	$8.88 \cdot 10^{-7}$	$1.986 \cdot 10^{-5}$	$1.986 \cdot 10^{-5}$	$1.359 \cdot 10^{-6}$		

$HW^- \to \bar{t}b$	-0.247	-0.247	0	2.176	2.176	0
$H\gamma \to t\bar{t}$	-0.6816	-0.6816	$5.868 \cdot 10^{-7}$	14.07	14.07	$1.208 \cdot 10^{-6}$
$Hz \to t\bar{t}$	$3.974 \cdot 10^{-8}$	0	1	$1.338 \cdot 10^{-12}$	0	1
$W^+W^-  o Hb\bar{b}$	$-2.712 \cdot 10^{-6}$	$-2.712 \cdot 10^{-6}$	0	$4.036 \cdot 10^{-6}$	$4.036 \cdot 10^{-6}$	0
$W^+W^-  o H t \bar t$	$1.153 \cdot 10^{-5}$	$1.153 \cdot 10^{-5}$	$8.674 \cdot 10^{-8}$	$3.041 \cdot 10^{-5}$	$3.041 \cdot 10^{-5}$	$-3.288 \cdot 10^{-8}$
$\bar{b}t \to \bar{d}u$	0.01446	0.01446	0	0.006829	0.006829	0
$b\bar{b}  o t\bar{t}$	-0.5581	-0.5581	$3.584 \cdot 10^{-8}$	0.5922	0.5922	$1.689 \cdot 10^{-8}$
$b\bar{t} \to e^-\bar{\nu}_e$	0.0008838	0.0008838	$1.131 \cdot 10^{-8}$	0.00233	0.00233	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$-1.731 \cdot 10^{-9}$	0	1	$5.385 \cdot 10^{-16}$	0	1
$t\bar{t} \to \tau^+ \tau^-$	0.008501	0.008501	$5.293 \cdot 10^{-7}$	0.01732	0.01732	$1.097 \cdot 10^{-6}$
$t\bar{t} \to c\bar{c}$	0.01184	0.01184	$4.223 \cdot 10^{-7}$	0.02573	0.02573	$9.717 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	0.002784	0.002784	$-3.592 \cdot 10^{-8}$	0.006564	0.006564	$3.809 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	0.005012	0.005012	$-9.976 \cdot 10^{-8}$	0.005355	0.005355	$3.735 \cdot 10^{-7}$
$t\bar{t}  o t\bar{t}$	-0.7539	-0.7539	$4.775 \cdot 10^{-7}$	0.86	0.86	$9.651 \cdot 10^{-7}$

# 2.69 ctWI

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+ \bar t b$	$5.272 \cdot 10^{-6}$	$5.272 \cdot 10^{-6}$	0	$1.48 \cdot 10^{-5}$	$1.48 \cdot 10^{-5}$	0		
$HH \to z t \bar t$	$2.025 \cdot 10^{-12}$	0	1	$3.27 \cdot 10^{-17}$	0	1		
$HW^+  o \gamma t \bar{b}$	$1.992 \cdot 10^{-6}$	$1.992 \cdot 10^{-6}$	$7.531 \cdot 10^{-7}$	$5.796 \cdot 10^{-5}$	$5.796 \cdot 10^{-5}$	$1.208 \cdot 10^{-6}$		
$HW^- \to \bar{t}b$	0.000395	0.000395	0	1.284	1.284	0		
$H\gamma \to t\bar{t}$	$9.816 \cdot 10^{-17}$	$3.567 \cdot 10^{-17}$	0.6366	15.35	15.35	$1.238 \cdot 10^{-6}$		
$Hz \to t\bar{t}$	$3.901 \cdot 10^{-10}$	0	1	$1.107 \cdot 10^{-12}$	0	1		
$W^+W^-  o Hb\bar b$	$-2.48 \cdot 10^{-6}$	$-2.48 \cdot 10^{-6}$	0	$3.267 \cdot 10^{-6}$	$3.267 \cdot 10^{-6}$	0		
$W^+W^-  o H t \bar t$	$2.902 \cdot 10^{-6}$	$2.902 \cdot 10^{-6}$	0	$7.521 \cdot 10^{-5}$	$7.521 \cdot 10^{-5}$	$-1.33 \cdot 10^{-8}$		
$\bar{b}t \to \bar{d}u$	$5.64 \cdot 10^{-19}$	$2.788 \cdot 10^{-19}$	0.5057	0.0105	0.0105	0		
$b\bar{b}  o t\bar{t}$	$-1.949 \cdot 10^{-16}$	$1.189 \cdot 10^{-16}$	1.61	0.5464	0.5464	$1.83 \cdot 10^{-8}$		

$b\bar{t} \to e^- \bar{\nu}_e$	$2.591 \cdot 10^{-18}$	$4.296 \cdot 10^{-18}$	-0.658	0.004387	0.004387	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$-1.106 \cdot 10^{-25}$	0	1	$1.989 \cdot 10^{-16}$	0	1
$t\bar{t} \to \tau^+ \tau^-$	$-4.075 \cdot 10^{-18}$	$-2.59 \cdot 10^{-18}$	0.3644	0.01379	0.01379	$1.16 \cdot 10^{-6}$
$t\bar{t} \to c\bar{c}$	$1.156 \cdot 10^{-10}$	$1.156 \cdot 10^{-10}$	$6.057 \cdot 10^{-7}$	0.0197	0.0197	$9.645 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	$1.039 \cdot 10^{-15}$	$1.036 \cdot 10^{-15}$	0.003191	0.004859	0.004859	$3.91 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	$5.662 \cdot 10^{-13}$	$5.662 \cdot 10^{-13}$	$7.258 \cdot 10^{-6}$	0.002961	0.002961	$3.715 \cdot 10^{-7}$
$t \bar t  o t \bar t$	$-5.361 \cdot 10^{-17}$	$-4.24 \cdot 10^{-18}$	0.9209	0.4736	0.4736	$9.713 \cdot 10^{-7}$

## 2.70 ctZ

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z t \bar t$	$-1.437 \cdot 10^{-6}$	$-1.437 \cdot 10^{-6}$	$6.262 \cdot 10^{-7}$	$7.409 \cdot 10^{-5}$	$7.409 \cdot 10^{-5}$	$1.093 \cdot 10^{-6}$		
$HW^+  o \gamma t \bar{b}$	$-7.103 \cdot 10^{-8}$	$-7.103 \cdot 10^{-8}$	$5.069 \cdot 10^{-7}$	$4.559 \cdot 10^{-5}$	$4.559 \cdot 10^{-5}$	$1.141 \cdot 10^{-6}$		
$H\gamma \to t\bar{t}$	0.5385	0.5385	$5.386 \cdot 10^{-7}$	11.76	11.76	$1.105 \cdot 10^{-6}$		
$Hz \to t\bar{t}$	-0.08063	-0.08063	$5.829 \cdot 10^{-7}$	2.52	2.52	$1.111 \cdot 10^{-6}$		
$W^+W^-  o H t \bar t$	$3.758 \cdot 10^{-7}$	$3.758 \cdot 10^{-7}$	$5.588 \cdot 10^{-7}$	$1.548 \cdot 10^{-7}$	$1.548 \cdot 10^{-7}$	$1.098 \cdot 10^{-6}$		
$b\bar{b}  o t\bar{t}$	0.01959	0.01959	$5.615 \cdot 10^{-7}$	0.003091	0.003091	$1.1 \cdot 10^{-6}$		
$t \bar t  o  u_\mu ar u_\mu$	-0.001026	-0.001026	$4.873 \cdot 10^{-7}$	0.001111	0.001111	$1.08 \cdot 10^{-6}$		
$t\bar{t} \to \tau^+ \tau^-$	-0.006741	-0.006741	$5.341 \cdot 10^{-7}$	0.01455	0.01455	$1.1 \cdot 10^{-6}$		
$t\bar{t} \to c\bar{c}$	-0.005123	-0.005123	$5.465 \cdot 10^{-7}$	0.0174	0.0174	$1.092 \cdot 10^{-6}$		
$t\bar{t} \to d\bar{d}$	$-4.714 \cdot 10^{-5}$	$-4.714 \cdot 10^{-5}$	$-1.697 \cdot 10^{-7}$	0.005116	0.005116	$1.095 \cdot 10^{-6}$		
$t\bar{t} \to s\bar{s}$	0.001006	0.001006	$5.962 \cdot 10^{-7}$	0.00355	0.00355	$1.099 \cdot 10^{-6}$		
$t\bar{t} \to t\bar{t}$	0.2223	0.2223	$5.399 \cdot 10^{-7}$	0.3584	0.3584	$1.116 \cdot 10^{-6}$		

# 2.71 ctZI

	interfe	erence	square		
mod1	mod2	$1-{\tt mod}2/{\tt mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$

```
HH \rightarrow zt\bar{t}
                                -1.231 \cdot 10^{-8}
                                                          -1.23 \cdot 10^{-8}
                                                                                    9.752 \cdot 10^{-7}
                                                                                                                        8.222 \cdot 10^{-6} 8.222 \cdot 10^{-6}
                                                                                                                                                                     1.095 \cdot 10^{-6}
HW^+ \rightarrow \gamma t \bar{b}
                                 5.044 \cdot 10^{-7}
                                                          5.044 \cdot 10^{-7}
                                                                                    5.551 \cdot 10^{-7}
                                                                                                                        5.659 \cdot 10^{-6}
                                                                                                                                             5.659 \cdot 10^{-6}
                                                                                                                                                                     1.113 \cdot 10^{-6}
                                -2.116 \cdot 10^{-16}
                                                         -4.597 \cdot 10^{-16}
                                                                                                                                                                     1.117 \cdot 10^{-6}
H\gamma \to t\bar{t}
                                                                                       -1.172
                                                                                                                              2.596
                                                                                                                                                  2.596
                                                                                                                                                                     1.037 \cdot 10^{-6}
Hz \to t\bar{t}
                                 -0.0001765
                                                          -0.0001765
                                                                                    5.667 \cdot 10^{-7}
                                                                                                                             1.543
                                                                                                                                                  1.543
W^+W^- \to H t \bar t
                                 5.331 \cdot 10^{-7}
                                                          5.331 \cdot 10^{-7}
                                                                                    5.44 \cdot 10^{-7}
                                                                                                                         1.273 \cdot 10^{-7} 1.273 \cdot 10^{-7}
                                                                                                                                                                     1.021 \cdot 10^{-6}
b\bar{b} \to t\bar{t}
                                1.033 \cdot 10^{-18}
                                                         1.068 \cdot 10^{-18}
                                                                                                                                                                     1.079 \cdot 10^{-6}
                                                                                     -0.03403
                                                                                                                          0.003428
                                                                                                                                               0.003428
                               -1.306 \cdot 10^{-20}
                                                         -1.581 \cdot 10^{-18}
                                                                                                                                                                     1.101 \cdot 10^{-6}
t\bar{t} \to \nu_{\mu}\bar{\nu}_{\mu}
                                                                                        -120
                                                                                                                                               0.0005451
                                                                                                                          0.0005451
t\bar{t} \rightarrow \tau^+ \tau^-
                                                                                                                                                                     1.09 \cdot 10^{-6}
                               -5.285 \cdot 10^{-19}
                                                         -1.506 \cdot 10^{-18}
                                                                                       -1.849
                                                                                                                          0.006421
                                                                                                                                               0.006421
                                                                                    5.931 \cdot 10^{-7}
                                                                                                                                                                     1.108 \cdot 10^{-6}
t\bar{t} \to c\bar{c}
                               -1.012 \cdot 10^{-10}
                                                         -1.012 \cdot 10^{-10}
                                                                                                                          0.0005143
                                                                                                                                               0.0005143
t\bar{t} \to d\bar{d}
                               -1.199 \cdot 10^{-15}
                                                        -1.198 \cdot 10^{-15}
                                                                                    0.0009999
                                                                                                                                                                     1.101 \cdot 10^{-6}
                                                                                                                          0.002906
                                                                                                                                               0.002906
                                                                                                                                                                     1.088 \cdot 10^{-6}
t\bar{t} \to s\bar{s}
                               -4.955 \cdot 10^{-13}
                                                         -4.955 \cdot 10^{-13}
                                                                                   -2.825 \cdot 10^{-6}
                                                                                                                          0.003492
                                                                                                                                               0.003492
t\bar{t} \to t\bar{t}
                               -1.695 \cdot 10^{-17}
                                                         1.116 \cdot 10^{-16}
                                                                                         7.587
                                                                                                                                                                     1.085 \cdot 10^{-6}
                                                                                                                           0.03687
                                                                                                                                                0.03687
```

#### 2.72 ctb1

		erference		squ	ıare	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$b\bar{b}  o t\bar{t}$	-0.02774	-0.02774	$-3.605 \cdot 10^{-8}$	0.4789	0.4789	0

#### 2.73 ctb8

#### 2.74 ctd1

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to d\bar{d}$	-0.01172	-0.01172	0	0.198	0.198	0
$t\bar{t} \to s\bar{s}$	-0.03305	-0.03305	0	0.5716	0.5716	0

#### $2.75 \quad \text{ctd8}$

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$t\bar{t} \to d\bar{d}$	0.1499	0.1499	0	0.044	0.044	0	
$t\bar{t} \to s\bar{s}$	0.3959	0.3959	0	0.127	0.127	0	

#### 2.76 cte3

#### 2.77 ctl2

### 2.78 ctl3

#### 2.79 ctlS1

#### 2.80 ctlS3

#### 2.81 ctlSI1

#### 2.82 ctlSI3

#### 2.83 ctlT1

  $b\bar{t} \to e^- \bar{\nu}_e$  0 0 0 0.3525 0.3525 0

#### 2.84 ctlT3

#### 2.85 ctlTI1

#### 2.86 ctlTI3

#### 2.87 ctp

interference square mod2 1 - mod2/mod1mod1mod2 1 - mod2/mod1mod1  $HH \to Ht\bar{t}$  $9.729 \cdot 10^{-6}$  $9.729 \cdot 10^{-6}$  $9.708 \cdot 10^{-6}$  $9.708 \cdot 10^{-6}$ 0 0  $HH \to W^+ \bar{t} b$  $1.374 \cdot 10^{-6}$  $1.374 \cdot 10^{-6}$  $1.005 \cdot 10^{-6}$   $1.005 \cdot 10^{-6}$ 0 0  $HH \rightarrow zt\bar{t}$  $1.715 \cdot 10^{-6}$  $1.715 \cdot 10^{-6}$  $1.387 \cdot 10^{-6}$   $1.387 \cdot 10^{-6}$  $HW^+ \to \gamma t \bar{b}$  $2.71 \cdot 10^{-7}$  $2.71 \cdot 10^{-7}$  $9.379 \cdot 10^{-8}$   $9.379 \cdot 10^{-8}$   $-2.132 \cdot 10^{-8}$ 

$HW^-  o \bar{t}b$	-0.03405	-0.03405	$2.937 \cdot 10^{-8}$	0.04842	0.04842	0
$H\gamma \to t\bar{t}$	-0.2466	-0.2466	0	0.007566	0.007566	$-2.643 \cdot 10^{-8}$
$Hz \to t\bar{t}$	0.001345	0.001345	$-2.23 \cdot 10^{-7}$	0.06874	0.06874	0
$W^+W^-  o Hbar{b}$	$4.5 \cdot 10^{-7}$	$4.5\cdot10^{-7}$	0	$2.915 \cdot 10^{-8}$	$2.915 \cdot 10^{-8}$	0
$W^+W^-  o Ht\bar{t}$	$-3.054 \cdot 10^{-7}$	$-3.054 \cdot 10^{-7}$	$-3.274 \cdot 10^{-8}$	$1.047 \cdot 10^{-6}$	$1.047 \cdot 10^{-6}$	0
$b\bar{b} \to t\bar{t}$	$-1.306 \cdot 10^{-5}$	$-1.306 \cdot 10^{-5}$	0	$6.089 \cdot 10^{-7}$	$6.089 \cdot 10^{-7}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-1.002 \cdot 10^{-6}$	$-1.002 \cdot 10^{-6}$	0	$3.101 \cdot 10^{-8}$	$3.101 \cdot 10^{-8}$	0
t ar t  o t ar t	0.0778	0.0778	0	0.008701	0.008701	0

## 2.88 ctpI

		interfere		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to H t \bar t$	$6.618 \cdot 10^{-5}$	$6.618 \cdot 10^{-5}$	0	$1.434 \cdot 10^{-5}$	$1.434 \cdot 10^{-5}$	0	
$HH \to W^+ \bar{t} b$	$-3.562 \cdot 10^{-7}$	$-3.562 \cdot 10^{-7}$	$-2.807 \cdot 10^{-8}$	$4.231 \cdot 10^{-6}$	$4.231 \cdot 10^{-6}$	0	
$HH \to z t \bar{t}$	$-3.056 \cdot 10^{-6}$	$-3.056 \cdot 10^{-6}$	0	$6.996 \cdot 10^{-6}$	$6.996 \cdot 10^{-6}$	$1.429 \cdot 10^{-8}$	
$HW^+ \to \gamma t \bar{b}$	$-1.591 \cdot 10^{-8}$	$-1.591 \cdot 10^{-8}$	0	$1.226 \cdot 10^{-9}$	$1.226 \cdot 10^{-9}$	$-8.155 \cdot 10^{-8}$	
$HW^-  o \bar{t}b$	-0.0009859	-0.0009859	0	0.05844	0.05844	0	
$H\gamma \to t\bar{t}$	$-8.983 \cdot 10^{-19}$	$4.366 \cdot 10^{-19}$	1.486	0.002155	0.002155	0	
$Hz \to t\bar{t}$	0.0003853	0.0003853	$5.19 \cdot 10^{-8}$	0.0655	0.0655	0	
$W^+W^- \to H b \bar b$	$-6.703 \cdot 10^{-7}$	$-6.703 \cdot 10^{-7}$	0	$2.174 \cdot 10^{-8}$	$2.174 \cdot 10^{-8}$	0	
$W^+W^-  o H t ar t$	$-1.077 \cdot 10^{-7}$	$-1.077 \cdot 10^{-7}$	0	$7.613 \cdot 10^{-7}$	$7.613 \cdot 10^{-7}$	0	
$b\bar{b}  o t\bar{t}$	$1.496 \cdot 10^{-21}$	$-3.573 \cdot 10^{-22}$	1.239	$6.906 \cdot 10^{-7}$	$6.906 \cdot 10^{-7}$	0	
$t\bar{t} \to \tau^+ \tau^-$	$-2.344 \cdot 10^{-23}$	$-3.676 \cdot 10^{-25}$	0.9843	$3.49 \cdot 10^{-8}$	$3.49 \cdot 10^{-8}$	0	
$t\bar{t} \to t\bar{t}$	$5.01 \cdot 10^{-18}$	$-4.53 \cdot 10^{-18}$	1.904	0.004879	0.004879	0	

# 2.89 ctq1

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to c\bar{c}$	0.007485	0.007485	$1.336 \cdot 10^{-8}$	0.03655	0.03655	0
$t\bar{t} \to d\bar{d}$	-0.00469	-0.00469	$2.132 \cdot 10^{-8}$	0.04666	0.04666	0
$t\bar{t} \to s\bar{s}$	-0.0004775	-0.0004775	$3.351 \cdot 10^{-7}$	0.1914	0.1914	0

## 2.90 ctq8

		ir	nterference		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$t\bar{t} \to c\bar{c}$	0.02132	0.02132	0	0.0006196	0.0006196	0		
$t\bar{t} \to d\bar{d}$	0.2706	0.2706	0	0.08473	0.08473	0		
$t\bar{t} \to s\bar{s}$	0.02383	0.02383	0	0.001468	0.001468	0		

### 2.91 ctt1

		i	nterference		SC	quare
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to t\bar{t}$	-17.56	-17.56	0	25.38	25.38	0

## 2.92 ctu1

		-	interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$t\bar{t} \to c\bar{c}$	0.1131	0.1131	0	0.9829	0.9829	0		

## 2.93 ctu8

interference square

	$\mathtt{mod1}$	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\mathtt{mod}1$	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to c\bar{c}$	0.5353	0.5353	0	0.1741	0.1741	0

### 2.94 sm

			interference	square
	mod1	mod2	$1-{\tt mod2/mod1}$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
HH  o HH	0	0	0	$0.07188 \qquad 0.07188 \qquad 0$
HH  o HHH	0	0	0	$3.271 \cdot 10^{-6}$ $3.271 \cdot 10^{-6}$ 0
$HH \to H  au^+  au^-$	0	0	0	$2.028 \cdot 10^{-7}$ $2.028 \cdot 10^{-7}$ 0
$HH  o Hbar{b}$	0	0	0	$2.326 \cdot 10^{-10}  2.326 \cdot 10^{-10} \qquad 0$
$HH  o Htar{t}$	0	0	0	$1.376 \cdot 10^{-5}$ $1.376 \cdot 10^{-5}$ 0
$HH \to Hzz$	0	0	0	$1.116 \cdot 10^{-5}$ $1.116 \cdot 10^{-5}$ 0
$HH  o W^+W^-$	0	0	0	0.111   0.111   0
$HH  o W^+W^-\gamma$	0	0	0	$3.283 \cdot 10^{-7}$ $3.283 \cdot 10^{-7}$ $-9.138 \cdot 10^{-8}$
$HH  o W^+ ar t b$	0	0	0	$0.1906 \qquad 0.1906 \qquad 0$
$HH \to W^+ e^- \bar{\nu}_e$	0	0	0	$2.005 \cdot 10^{-7}$ $2.005 \cdot 10^{-7}$ 0
$HH  o W^- u \bar d$	0	0	0	$2.921 \cdot 10^{-6}$ $2.921 \cdot 10^{-6}$ $3.424 \cdot 10^{-8}$
HH  o z ar b b	0	0	0	$7.741 \cdot 10^{-7}$ $7.741 \cdot 10^{-7}$ 0
$HH  o z \nu_e \bar{\nu}_e$	0	0	0	$1.037 \cdot 10^{-7}$ $1.037 \cdot 10^{-7}$ 0
$HH \to z c \bar c$	0	0	0	$3.711 \cdot 10^{-7}$ $3.711 \cdot 10^{-7}$ 0
$HH  o zd\bar{d}$	0	0	0	$1.659 \cdot 10^{-6}$ $1.659 \cdot 10^{-6}$ 0
$HH \rightarrow ze^+e^-$	0	0	0	$1.085 \cdot 10^{-7}$ $1.085 \cdot 10^{-7}$ 0
$HH  o zt \bar t$	0	0	0	$8.862 \cdot 10^{-6}$ $8.862 \cdot 10^{-6}$ $1.128 \cdot 10^{-8}$
$HH \rightarrow zz$	0	0	0	0.485 $0.485$ $0$
$HW^+  o \gamma t \bar{b}$	0	0	0	$1.127 \cdot 10^{-6}$ $1.127 \cdot 10^{-6}$ 0
$HW^+ \to \gamma u \bar{d}$	0	0	0	$6.821 \cdot 10^{-7}$ $6.821 \cdot 10^{-7}$ 0
$HW^+  o u \bar d$	0	0	0	$0.02155 \qquad 0.02155 \qquad 4.641 \cdot 10^{-8}$
$HW^- \to \bar{t}b$	0	0	0	0.5515   0.5515   0

$HW^- \to \gamma e^- \bar{\nu}_e$	0	0	0	$8.098 \cdot 10^{-8}$	$8.098 \cdot 10^{-8}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$	0	0	0	0.007625	0.007625	$1.311 \cdot 10^{-8}$
$H\gamma  ightarrow bar{b}$	0	0	0	$9.662 \cdot 10^{-5}$	$9.662 \cdot 10^{-5}$	$-1.035 \cdot 10^{-8}$
$H\gamma \to t \bar t$	0	0	0	0.4052	0.4052	0
$Hz \rightarrow \mu^+\mu^-$	0	0	0	0.002089	0.002089	0
$Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$	0	0	0	0.001123	0.001123	0
$Hz  o b \dot{\bar{b}}$	0	0	0	0.01444	0.01444	0
$Hz \to s\bar{s}$	0	0	0	0.006683	0.006683	0
$Hz \to t\bar{t}$	0	0	0	2.228	2.228	0
$Hz \to u\bar{u}$	0	0	0	0.00599	0.00599	$1.669 \cdot 10^{-8}$
$W^+W^- \to H b \bar b$	0	0	0	0.0001476	0.0001476	$6.777 \cdot 10^{-8}$
$W^+W^- \to H c \bar c$	0	0	0	$8.609 \cdot 10^{-7}$	$8.609 \cdot 10^{-7}$	$2.323 \cdot 10^{-8}$
$W^+W^- \to H d\bar{d}$	0	0	0	$4.661 \cdot 10^{-7}$	$4.661 \cdot 10^{-7}$	$2.145 \cdot 10^{-8}$
$W^+W^- \to H t \bar t$	0	0	0	$3.596 \cdot 10^{-5}$	$3.596 \cdot 10^{-5}$	0
$W^+W^- \to W^+W^-$	0	0	0	7.679	7.679	$1.302 \cdot 10^{-8}$
$W^+W^- \to \gamma\gamma$	0	0	0	0.2107	0.2107	$-4.747 \cdot 10^{-8}$
$W^+W^-  o \gamma\gamma\gamma$	0	0	0	$1.221 \cdot 10^{-6}$	$1.221 \cdot 10^{-6}$	0
$\bar{b}t \to \bar{d}u$	0	0	0	0.0003897	0.0003897	$2.566 \cdot 10^{-8}$
$\gamma W^+  o z W^+$	0	0	0	0.1619	0.1619	0
$\mu^+\mu^- \to \tau^+\tau^-$	0	0	0	0.007062	0.007062	$-4.248 \cdot 10^{-8}$
$\nu_{ au} \bar{\nu}_{ au}  o \nu_{ au} \bar{\nu}_{ au}$	0	0	0	0.3561	0.3561	0
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	0	0	0	0.01645	0.01645	0
$b\bar{b}  o \gamma \gamma$	0	0	0	$9.337 \cdot 10^{-5}$	$9.337 \cdot 10^{-5}$	$-2.142 \cdot 10^{-8}$
$b\bar{b}  o \mu^+\mu^-$	0	0	0	0.001818	0.001818	0
$b\bar{b}  o  u_e \bar{ u}_e$	0	0	0	0.0007306	0.0007306	$1.369 \cdot 10^{-8}$
$b\bar{b}  o b\bar{b}$	0	0	0	8.108	8.108	0
$b\bar{b} \to d\bar{d}$	0	0	0	0.5166	0.5166	0
$b\bar{b}  o t\bar{t}$	0	0	0	0.9633	0.9633	$1.038 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	0	0	0	0.8803	0.8803	0

$b\bar{t} \to e^- \bar{\nu}_e$	0	0	0	$1.646 \cdot 10^{-5}$	$1.646 \cdot 10^{-5}$	0
$c\bar{c} \to \mu^+ \mu^-$	0	0	0	0.004204	0.004204	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0	0	0	$9.717 \cdot 10^{-5}$	$9.717 \cdot 10^{-5}$	$2.058 \cdot 10^{-8}$
$d\bar{d} \rightarrow c\bar{c}$	0	0	0	0.9464	0.9464	0
$d\bar{d} \rightarrow e^+e^-$	0	0	0	0.001502	0.001502	0
$d\bar{d} \to s\bar{s}$	0	0	0	0.64	0.64	0
$e^+\nu_\mu \to e^+\nu_\mu$	0	0	0	38.77	38.77	0
$e^+\nu_e^-  o \mu^+\nu_\mu^-$	0	0	0	0.0003123	0.0003123	$3.202 \cdot 10^{-8}$
$e^+\nu_e \to e^+\nu_e$	0	0	0	33.2	33.2	0
$e^+\tau^- \rightarrow e^+\tau^-$	0	0	0	3.288	3.288	0
$e^+e^- \to \mu^+\mu^-$	0	0	0	0.008108	0.008108	$-4.933 \cdot 10^{-8}$
$e^+e^- \rightarrow e^+e^-$	0	0	0	0.01691	0.01691	$-5.913 \cdot 10^{-8}$
gg  o gg	0	0	0	61.49	61.49	0
gg  o ggg	0	0	0	0.03951	0.03951	0
gg  o t ar t	0	0	0	0.4157	0.4157	0
$gg \to u\bar{u}$	0	0	0	18.27	18.27	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0	0	0	0.004254	0.004254	0
$s\bar{s} \to s\bar{s}$	0	0	0	77.32	77.32	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0	0	0	0.0006844	0.0006844	0
$t\bar{t} \rightarrow \tau^+ \tau^-$	0	0	0	0.006818	0.006818	0
$t\bar{t} \to c\bar{c}$	0	0	0	0.6047	0.6047	0
$t\bar{t}  o d\bar{d}$	0	0	0	0.8023	0.8023	0
$t\bar{t} \to s\bar{s}$	0	0	0	1.018	1.018	0
$t\bar{t}  o t\bar{t}$	0	0	0	5.609	5.609	0
$u\bar{d} \to \mu^+ \nu_\mu$	0	0	0	0.01435	0.01435	0
$u\bar{d} \to c\bar{s}$	0	0	0	0.000785	0.000785	$1.274 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	0	0	0	1.999	1.999	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0	0	0	0.0005843	0.0005843	$-3.423 \cdot 10^{-8}$
$u\bar{u} \to c\bar{c}$	0	0	0	0.5292	0.5292	0

$u\bar{u} \to u\bar{u}$	0	0	0	4.855	4.855	0
$zz  o W^+W^-$	0	0	0	86.3	86.3	$2.317 \cdot 10^{-8}$
$zz \rightarrow zz$	0	0	0	0.08108	0.08108	0