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

#### 1.6 $HH \rightarrow Hzz$

#### 1.7 $HH \to W^+W^-$

#### 1.8 $HH \rightarrow W^+W^-\gamma$

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

cbW	$-5.796 \cdot 10^{-8}$	$-5.796 \cdot 10^{-8}$	$-1.035 \cdot 10^{-7}$	$3.385 \cdot 10^{-5}$	$3.385 \cdot 10^{-5}$	0
cbWI	$1.754 \cdot 10^{-6}$	$1.754 \cdot 10^{-6}$	0	$3.385 \cdot 10^{-5}$	$3.385 \cdot 10^{-5}$	0
cpQ3	$-2.804 \cdot 10^{-6}$	$-4.989 \cdot 10^{-6}$	-0.7794	$3.382 \cdot 10^{-5}$	$2.37 \cdot 10^{-5}$	0.2992
cptb	$-2.092 \cdot 10^{-9}$	$4.963 \cdot 10^{-8}$	24.72	$1.006 \cdot 10^{-6}$	$1.597 \cdot 10^{-5}$	-14.88
cptbI	$3.726 \cdot 10^{-8}$	$2.375 \cdot 10^{-8}$	0.3627	$8.455 \cdot 10^{-6}$	$5.928 \cdot 10^{-6}$	0.2989
ctW	$1.036 \cdot 10^{-5}$	$1.036 \cdot 10^{-5}$	0	$1.216 \cdot 10^{-5}$	$1.216 \cdot 10^{-5}$	0
ctWI	$-7.513 \cdot 10^{-7}$	$-7.513 \cdot 10^{-7}$	0	$2.108 \cdot 10^{-5}$	$2.108 \cdot 10^{-5}$	0
ctp	$1.574 \cdot 10^{-7}$	$1.574 \cdot 10^{-7}$	0	$5.876 \cdot 10^{-7}$	$5.876 \cdot 10^{-7}$	0
ctpI	$-1.003 \cdot 10^{-7}$	$-1.003 \cdot 10^{-7}$	0	$2.363 \cdot 10^{-6}$	$2.363 \cdot 10^{-6}$	0
sm	0	0	0	$4.073 \cdot 10^{-6}$	$4.073 \cdot 10^{-6}$	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	$6.166 \cdot 10^{-8}$	$6.166 \cdot 10^{-8}$	$1.622 \cdot 10^{-8}$

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

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

```
1.854 \cdot 10^{-8} 1.854 \cdot 10^{-8}
                                                             0
                                                                                          4.492 \cdot 10^{-6} 4.492 \cdot 10^{-6}
                                                                                                                                 2.226 \cdot 10^{-8}
cbWI
             1.685 \cdot 10^{-6}
                                 2.276 \cdot 10^{-6}
                                                                                          2.621 \cdot 10^{-6} \quad 9.492 \cdot 10^{-5}
                                                            -0.3513
                                                                                                                                    -35.22
cpQ3
              1.727 \cdot 10^{-6}
                                   8.496 \cdot 10^{-6}
                                                            -3.919
                                                                                          1.01 \cdot 10^{-6} 4.346 \cdot 10^{-5}
                                                                                                                                    -42.02
cpQM
                                                                                          1.637 \cdot 10^{-6} 1.599 \cdot 10^{-5}
             -2.561 \cdot 10^{-7} -4.194 \cdot 10^{-7}
                                                            -0.6379
                                                                                                                                   -8.768
cpb
                                                                                          3.108 \cdot 10^{-7} 3.108 \cdot 10^{-7}
                                                                                                                                 3.217 \cdot 10^{-8}
                     0
                                          0
                                                                0
sm
```

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

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

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

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

 ${\rm sm} \qquad \qquad 0 \qquad \qquad 0 \qquad \qquad 9.821 \cdot 10^{-8} \quad 9.821 \cdot 10^{-8} \qquad \qquad 0$ 

## 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	$3.656 \cdot 10^{-5}$	$3.408 \cdot 10^{-5}$	0.06794	$3.148 \cdot 10^{-5}$	$9.48 \cdot 10^{-5}$	-2.012		
cpt	$-3.862 \cdot 10^{-5}$	$-4.136 \cdot 10^{-5}$	-0.07077	$4.9 \cdot 10^{-5}$	0.0001131	-1.308		
ctW	$1.173 \cdot 10^{-12}$	0	1	$1.727 \cdot 10^{-17}$	0	1		
ctWI	$9.01 \cdot 10^{-13}$	0	1	$1.293 \cdot 10^{-17}$	0	1		
ctZ	$7.838 \cdot 10^{-7}$	$7.838 \cdot 10^{-7}$	$5.742 \cdot 10^{-7}$	$4.568 \cdot 10^{-5}$	$4.568 \cdot 10^{-5}$	$1.095 \cdot 10^{-6}$		
ctZI	$-3.559 \cdot 10^{-6}$	$-3.559 \cdot 10^{-6}$	$5.9\cdot10^{-7}$	$3.773 \cdot 10^{-5}$	$3.773 \cdot 10^{-5}$	$1.087 \cdot 10^{-6}$		
ctp	$-5.869 \cdot 10^{-6}$	$-5.869 \cdot 10^{-6}$	$-1.704 \cdot 10^{-8}$	$4.119 \cdot 10^{-6}$	$4.119 \cdot 10^{-6}$	0		
ctpI	$-1.037 \cdot 10^{-7}$	$-1.037 \cdot 10^{-7}$	0	$3.209 \cdot 10^{-6}$	$3.209 \cdot 10^{-6}$	0		
sm	0	0	0	$3.23 \cdot 10^{-5}$	$3.23 \cdot 10^{-5}$	0		

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

	interference				square			
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
sm	0	0	0	0.07635	0.07635	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	$-1.95 \cdot 10^{-8}$	$3.048 \cdot 10^{-7}$	16.63	$5.666 \cdot 10^{-7}$	$9.314 \cdot 10^{-6}$	-15.44
cbWI	$-4.077 \cdot 10^{-8}$	$-6.916 \cdot 10^{-8}$	-0.6962	$5.665 \cdot 10^{-7}$	$9.312 \cdot 10^{-6}$	-15.44

cpQ3	$-3.665 \cdot 10^{-7}$	$-3.665 \cdot 10^{-7}$	$-2.729 \cdot 10^{-8}$	$4.975 \cdot 10^{-7}$	$4.975 \cdot 10^{-7}$	$-2.01 \cdot 10^{-8}$
cptb	$-5.286 \cdot 10^{-8}$	$-5.286 \cdot 10^{-8}$	0	$1.535 \cdot 10^{-7}$	$1.535 \cdot 10^{-7}$	$-6.515 \cdot 10^{-8}$
cptbI	$6.737 \cdot 10^{-9}$	$6.737 \cdot 10^{-9}$	0	$1.244 \cdot 10^{-7}$	$1.244 \cdot 10^{-7}$	0
ctW	$-5.754 \cdot 10^{-6}$	$-7.157 \cdot 10^{-6}$	-0.2438	$1.052 \cdot 10^{-5}$	$3.364 \cdot 10^{-5}$	-2.199
ctWI	$7.083 \cdot 10^{-6}$	$4.729 \cdot 10^{-6}$	0.3323	$1.572 \cdot 10^{-5}$	$1.574 \cdot 10^{-5}$	-0.0008883
ctZ	$3.532 \cdot 10^{-6}$	$3.532 \cdot 10^{-6}$	$5.379 \cdot 10^{-7}$	$1.754 \cdot 10^{-5}$	$1.754 \cdot 10^{-5}$	$1.083 \cdot 10^{-6}$
ctZI	$9.943 \cdot 10^{-6}$	$9.943 \cdot 10^{-6}$	$5.632 \cdot 10^{-7}$	$1.644 \cdot 10^{-5}$	$1.644 \cdot 10^{-5}$	$1.095 \cdot 10^{-6}$
ctp	$-1.133 \cdot 10^{-7}$	$-1.133 \cdot 10^{-7}$	0	$2.108 \cdot 10^{-8}$	$2.108 \cdot 10^{-8}$	0
ctpI	$-9.555 \cdot 10^{-8}$	$-9.555 \cdot 10^{-8}$	$-1.047 \cdot 10^{-8}$	$6.41 \cdot 10^{-8}$	$6.41 \cdot 10^{-8}$	0
sm	0	0	0	$1.508 \cdot 10^{-6}$	$1.508 \cdot 10^{-6}$	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	$1.175 \cdot 10^{-8}$	$1.175 \cdot 10^{-8}$	0

# $\mathbf{1.21} \quad HW^+ \to u\bar{d}$

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
sm	0	0	0	0.007805	0.007805	$1.281 \cdot 10^{-8}$		

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

		interfer		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cbW	0.006092	0.006092	0	2.252	2.252	0
cbWI	$1.082 \cdot 10^{-7}$	$1.082 \cdot 10^{-7}$	0	2.252	2.252	0

cpQ3	-1.402	-1.402	0	0.2192	0.2192	0
cptb	-0.05336	-0.05336	0	0.4879	0.4879	0
cptbI	$-1.161 \cdot 10^{-5}$	$-1.161 \cdot 10^{-5}$	0	0.0548	0.0548	0
ctW	-0.2635	-0.2635	$3.796 \cdot 10^{-8}$	2.275	2.275	0
ctWI	-0.003076	-0.003076	0	0.1605	0.1605	0
ctp	-0.3348	-0.3348	0	0.04073	0.04073	$2.455 \cdot 10^{-8}$
ctpI	-0.004445	-0.004445	0	0.04336	0.04336	0
sm	0	0	0	0.208	0.208	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	$1.857 \cdot 10^{-9}$	$1.857 \cdot 10^{-9}$	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	0.007413	0.007413	$1.349 \cdot 10^{-8}$		

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cbW	$-1.387 \cdot 10^{-6}$	$-1.387 \cdot 10^{-6}$	$-7.212 \cdot 10^{-8}$	0.6934	0.6934	$-1.442 \cdot 10^{-8}$		
cbWI	$3.145 \cdot 10^{-19}$	$3.143 \cdot 10^{-19}$	0.0006312	0.6934	0.6934	$-1.442 \cdot 10^{-8}$		
sm	0	0	0	0.0004266	0.0004266	$-2.344 \cdot 10^{-8}$		

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

		interfere	ence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\mathtt{mod1} \qquad \mathtt{mod2} \qquad 1-\mathtt{mod2}/\mathtt{mod1}$
ctW	-0.7768	-0.7768	$5.922 \cdot 10^{-7}$	12.61 12.61 $1.189 \cdot 10^{-6}$
ctWI	$-5.529 \cdot 10^{-18}$	$-1.897 \cdot 10^{-17}$	-2.431	$13.96   13.96   1.218 \cdot 10^{-6}$
ctZ	0.6024	0.6024	$5.478 \cdot 10^{-7}$	10.7 $10.7   1.122 \cdot 10^{-6}$
ctZI	$-1.084 \cdot 10^{-18}$	$3.253 \cdot 10^{-18}$	4	$7.534   7.534   1.115 \cdot 10^{-6}$
ctp	-0.05652	-0.05652	$-1.769 \cdot 10^{-8}$	$0.001734  0.001734  -5.766 \cdot 10^{-8}$
ctpI	$-8.66 \cdot 10^{-19}$	$-7.14 \cdot 10^{-21}$	0.9918	$0.002182  0.002182 \qquad 0$
$\mathtt{sm}$	0	0	0	2.544   2.544   0

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

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

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

cbW	0.001427	0.001427	0	1.267	1.267	0
cbWI	$3.477 \cdot 10^{-6}$	$3.477 \cdot 10^{-6}$	0	1.267	1.267	0
cpQ3	0.3894	0.3894	0	3.389	3.389	0
cpQM	0.1953	0.1953	0	0.8498	0.8498	0
cpb	-0.03515	-0.03515	$-2.845 \cdot 10^{-8}$	0.8589	0.8589	0
sm	0	0	0	0.01304	0.01304	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	0.01215	0.01215	0		

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

		interfe	erence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cpQM	2.065	2.065	0	1.133	1.133	0	
cpt	-2.201	-2.201	0	1.298	1.298	0	
ctW	$2.552 \cdot 10^{-8}$	0	1	$1.669 \cdot 10^{-12}$	0	1	
ctWI	$-2.38 \cdot 10^{-10}$	0	1	$1.497 \cdot 10^{-12}$	0	1	
ctZ	-0.04646	-0.04646	$5.812 \cdot 10^{-7}$	3.393	3.393	$1.091 \cdot 10^{-6}$	
ctZI	-0.0004817	-0.0004817	$5.398 \cdot 10^{-7}$	2.997	2.997	$1.101 \cdot 10^{-6}$	
ctp	-0.000363	-0.000363	$8.539 \cdot 10^{-7}$	0.0685	0.0685	0	
$\mathtt{ctpI}$	0.0001586	0.0001586	$6.304 \cdot 10^{-8}$	0.06834	0.06834	0	
sm	0	0	0	3.883	3.883	0	

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

#### 

### 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	$-6.562 \cdot 10^{-7}$	$-2.625 \cdot 10^{-5}$	-39.01	$1.869 \cdot 10^{-5}$	0.0004688	-24.09	
cbWI	$2.628 \cdot 10^{-7}$	$-1.031 \cdot 10^{-6}$	4.923	$1.869 \cdot 10^{-5}$	0.0004685	-24.07	
cpQ3	$3.142 \cdot 10^{-6}$	$3.142 \cdot 10^{-6}$	$6.366 \cdot 10^{-8}$	$9.492 \cdot 10^{-7}$	$9.492 \cdot 10^{-7}$	$1.054 \cdot 10^{-8}$	
cpQM	$2.693 \cdot 10^{-5}$	$2.693 \cdot 10^{-5}$	0	$7.034 \cdot 10^{-7}$	$7.034 \cdot 10^{-7}$	$1.422 \cdot 10^{-8}$	
cpb	$-3.677 \cdot 10^{-8}$	$-3.677 \cdot 10^{-8}$	0	$4.553 \cdot 10^{-7}$	$4.553 \cdot 10^{-7}$	0	
cptb	$-7.695 \cdot 10^{-8}$	$-7.695 \cdot 10^{-8}$	0	$4.273 \cdot 10^{-7}$	$4.273 \cdot 10^{-7}$	0	
cptbI	$4.626 \cdot 10^{-8}$	$4.626 \cdot 10^{-8}$	$2.162 \cdot 10^{-8}$	$2.151 \cdot 10^{-7}$	$2.151 \cdot 10^{-7}$	0	
ctW	$1.078 \cdot 10^{-6}$	$1.078 \cdot 10^{-6}$	0	$3.197 \cdot 10^{-6}$	$3.197 \cdot 10^{-6}$	0	
ctWI	$2.29 \cdot 10^{-5}$	$2.29 \cdot 10^{-5}$	0	$3.197 \cdot 10^{-6}$	$3.197 \cdot 10^{-6}$	0	
ctp	$8.221 \cdot 10^{-6}$	$8.221 \cdot 10^{-6}$	0	$1.427 \cdot 10^{-7}$	$1.427 \cdot 10^{-7}$	0	
ctpI	$1.67 \cdot 10^{-6}$	$1.67 \cdot 10^{-6}$	0	$9.493 \cdot 10^{-9}$	$9.493 \cdot 10^{-9}$	$1.053 \cdot 10^{-8}$	
sm	0	0	0	$3.201 \cdot 10^{-6}$	$3.201 \cdot 10^{-6}$	0	

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

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

#### 

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

		interfer	rence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cbW	$1.83 \cdot 10^{-7}$	$1.83 \cdot 10^{-7}$	0	$2.081 \cdot 10^{-8}$	$2.081 \cdot 10^{-8}$	0		
cbWI	$-2.718 \cdot 10^{-8}$	$-2.718 \cdot 10^{-8}$	0	$2.149 \cdot 10^{-8}$	$2.149 \cdot 10^{-8}$	0		
cpQ3	$2.475 \cdot 10^{-5}$	$2.475 \cdot 10^{-5}$	0	$1.11 \cdot 10^{-5}$	$1.11 \cdot 10^{-5}$	0		
cpQM	$-1.137 \cdot 10^{-6}$	$-1.137 \cdot 10^{-6}$	$8.792 \cdot 10^{-8}$	$5.587 \cdot 10^{-7}$	$5.587 \cdot 10^{-7}$	0		
cpt	$1.796 \cdot 10^{-6}$	$1.796 \cdot 10^{-6}$	0	$6.022 \cdot 10^{-7}$	$6.022 \cdot 10^{-7}$	0		
cptb	$2.805 \cdot 10^{-8}$	$2.805 \cdot 10^{-8}$	0	$9.604 \cdot 10^{-10}$	$9.604 \cdot 10^{-10}$	$-1.041 \cdot 10^{-8}$		
cptbI	$1.223 \cdot 10^{-9}$	$1.223 \cdot 10^{-9}$	0	$1.399 \cdot 10^{-9}$	$1.399 \cdot 10^{-9}$	0		
ctW	$2.206 \cdot 10^{-6}$	$3.86 \cdot 10^{-5}$	-16.5	$3.044 \cdot 10^{-5}$	0.002149	-69.61		
ctWI	$-5.084 \cdot 10^{-6}$	$-2.379 \cdot 10^{-5}$	-3.678	$2.342 \cdot 10^{-5}$	0.002419	-102.3		
ctZ	$-1.286 \cdot 10^{-7}$	$-1.286 \cdot 10^{-7}$	$5.443 \cdot 10^{-7}$	$6.193 \cdot 10^{-8}$	$6.193 \cdot 10^{-8}$	$1.098 \cdot 10^{-6}$		
ctZI	$-3.07 \cdot 10^{-7}$	$-3.07 \cdot 10^{-7}$	$5.538 \cdot 10^{-7}$	$3.47 \cdot 10^{-8}$	$3.47 \cdot 10^{-8}$	$1.095 \cdot 10^{-6}$		
ctp	$-4.938 \cdot 10^{-8}$	$-4.938 \cdot 10^{-8}$	$2.025 \cdot 10^{-8}$	$4.337 \cdot 10^{-8}$	$4.337 \cdot 10^{-8}$	0		
ctpI	$2.453 \cdot 10^{-11}$	$2.453 \cdot 10^{-11}$	$2.516 \cdot 10^{-5}$	$1.28 \cdot 10^{-7}$	$1.28 \cdot 10^{-7}$	0		
sm	0	0	0	0.0002109	0.0002109	0		

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

# 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	0.2446	0.2446	$-4.089 \cdot 10^{-8}$		

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

			interference		square		
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$\mathtt{sm}$	0	0	0	$9.386 \cdot 10^{-7}$	$9.386 \cdot 10^{-7}$	$-4.262 \cdot 10^{-8}$	

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

		interfer	rence	SC	square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1 mod2	$1-\mathtt{mod}2/\mathtt{mod}1$			
cQbqu1	0	0	0	0.25 $0.25$	$3.08 \cdot 10^{-6}$			
cQbqu1I	0	0	0	0.25 $0.25$	$3.08 \cdot 10^{-6}$			
cQbqu8	0	0	0	0.05556  0.0555	$3.06 \cdot 10^{-6}$			
cQbqu8I	0	0	0	0.05556  0.0555	$3.06 \cdot 10^{-6}$			
cQq13	0.09356	0.09356	$1.069 \cdot 10^{-8}$	$0.4422 \qquad 0.442$	0			
cQq83	$-6.081 \cdot 10^{-18}$	$3.892 \cdot 10^{-20}$	1.006	$0.6616 \qquad 0.661$	6 0			
cQtqd1	0	0	0	0.25 $0.25$	$3.08 \cdot 10^{-6}$			
cQtqd1I	0	0	0	0.25 $0.25$	$3.08 \cdot 10^{-6}$			
cQtqd8	0	0	0	0.05556  0.0555	$3.06 \cdot 10^{-6}$			
cQtqd8I	0	0	0	0.05556  0.0555	$3.06 \cdot 10^{-6}$			
cbQqd1	0	0	0	0.25 $0.25$	$3.12 \cdot 10^{-6}$			
cbQqd1I	0	0	0	0.25 $0.25$	$3.12 \cdot 10^{-6}$			
cbQqd8	0	0	0	0.05556  0.0555	$66   2.934 \cdot 10^{-6}$			

cbQqd8I	0	0	0	0.05556	0.05556	$2.916 \cdot 10^{-6}$
cbW	0.0001548	0.0001548	0	0.01198	0.01198	0
cbWI	$9.36 \cdot 10^{-20}$	$8.907 \cdot 10^{-20}$	0.04839	0.01198	0.01198	0
cbtud1	0	0	0	0.1106	0.1106	$6.06 \cdot 10^{-6}$
cbtud1I	0	0	0	0.7443	0.7443	$6.1 \cdot 10^{-6}$
cbtud8	0	0	0	0.03045	0.03045	$5.911 \cdot 10^{-6}$
cbtud8I	0	0	0	0.03045	0.03045	$5.911 \cdot 10^{-6}$
cpQ3	0.0007437	0.0007437	$1.345 \cdot 10^{-8}$	$2.254 \cdot 10^{\circ}$	$^{-5}$ 2.254 · 10	$^{-5}$ 0
cptb	$-2.193 \cdot 10^{-6}$	$-2.193 \cdot 10^{-6}$	0	$9.443 \cdot 10^{\circ}$	$^{-7}$ 9.443 · 10	$1.059 \cdot 10^{-8}$
cptbI	$7.048 \cdot 10^{-21}$	$1.096 \cdot 10^{-21}$	0.8445	$1.708 \cdot 10^{\circ}$	$^{-5}$ 1.708 · 10	$^{-5}$ 0
ctQqu1	0	0	0	0.25	0.25	$3.12 \cdot 10^{-6}$
ctQqu1I	0	0	0	0.25	0.25	$3.12 \cdot 10^{-6}$
ctQqu8	0	0	0	0.05556	0.05556	$2.934 \cdot 10^{-6}$
ctQqu8I	0	0	0	0.05556	0.05556	$2.916 \cdot 10^{-6}$
ctW	0.01423	0.01423	0	0.007323	0.007323	$1.366 \cdot 10^{-8}$
ctWI	$1.766 \cdot 10^{-17}$	$1.362 \cdot 10^{-17}$	0.2283	0.01211	0.01211	0
sm	0	0	0	0.01649	0.01649	0

### 1.41 $\gamma W^+ \rightarrow z W^+$

## 1.42 $\mu^{+}\mu^{-} \rightarrow \tau^{+}\tau^{-}$

# 1.43 $\nu_{\tau}\bar{\nu}_{\tau} \rightarrow \nu_{\tau}\bar{\nu}_{\tau}$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
sm	0	0	0	0.02046	0.02046	0		

# **1.44** $\nu_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
sm	0	0	0	0.01912	0.01912	0		

# **1.45** $b\bar{b} \rightarrow \gamma \gamma$

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $			
cbW	$4.91 \cdot 10^{-6}$	$4.91 \cdot 10^{-6}$	$-2.037 \cdot 10^{-8}$	$0.0006187  0.0006187  -3.233 \cdot 10^{-8}$			
cbWI	$-9.127 \cdot 10^{-23}$	$-1.547 \cdot 10^{-22}$	-0.6947	$0.0006186  0.0006186  -4.849 \cdot 10^{-8}$			
sm	0	0	0	$8.06 \cdot 10^{-5}$ $8.06 \cdot 10^{-5}$ $-3.722 \cdot 10^{-8}$			

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cQe2	-0.004145	-0.004145	$-2.413 \cdot 10^{-8}$	0.09497	0.09497	0
cQ132	0.03679	0.03679	$2.718 \cdot 10^{-8}$	0.3876	0.3876	0
cQ1M2	0.03224	0.03224	0	0.1698	0.1698	0
cbW	$4.572 \cdot 10^{-5}$	$4.572 \cdot 10^{-5}$	0	0.002081	0.002081	0

cbWI	$4.555 \cdot 10^{-16}$	$4.554 \cdot 10^{-16}$	0.0001682	0.00208 0.00208	0
cblS2	0	0	0	0.1667 0.1667	0
cblSI2	0	0	0	$0.1667 \qquad 0.1667 \qquad 0.1667$	0
cpQ3	0.0001554	0.0001554	$6.436 \cdot 10^{-8}$	$1.162 \cdot 10^{-5}$ $1.162 \cdot 10^{-5}$	0
cpQM	0.0001067	0.0001067	0	$3.159 \cdot 10^{-6}  3.159 \cdot 10^{-6}$	0
cpb	$-1.906 \cdot 10^{-5}$	$-1.906 \cdot 10^{-5}$	$-1.049 \cdot 10^{-7}$	$2.9 \cdot 10^{-6}$ $2.9 \cdot 10^{-6}$	0
sm	0	0	0	$0.001867 \qquad 0.001867 \qquad 0.001867$	0

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

		interfer	ence	square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cQlM1	-0.02137	-0.02137	0	0.09153	0.09153	0	
cbW	$7.973 \cdot 10^{-5}$	$7.973 \cdot 10^{-5}$	$1.254 \cdot 10^{-8}$	0.0003012	0.0003012	$3.32 \cdot 10^{-8}$	
cbWI	$2.823 \cdot 10^{-21}$	$2.818 \cdot 10^{-21}$	0.001661	0.0003008	0.0003008	$3.324 \cdot 10^{-8}$	
cpQ3	0.0003584	0.0003584	0	$2.574 \cdot 10^{-5}$	$2.574 \cdot 10^{-5}$	0	
cpQM	0.0006064	0.0006064	0	$2.177 \cdot 10^{-5}$	$2.177 \cdot 10^{-5}$	0	
cpb	$-3.584 \cdot 10^{-6}$	$-3.584 \cdot 10^{-6}$	0	$7.001 \cdot 10^{-7}$	$7.001 \cdot 10^{-7}$	0	
sm	0	0	0	0.0005568	0.0005568	0	

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

		interf	erence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cQQ1	-0.01732	-0.01732	0	0.1131	0.1131	0	
cQQ8	-0.5114	-0.5114	0	0.1358	0.1358	0	
cQb1	0.07938	0.07938	$-2.52 \cdot 10^{-8}$	2.209	2.209	0	
cQb8	-5.649	-5.649	0	0.468	0.468	0	
cbW	0.002453	0.002453	0	0.02843	0.02843	0	

cbWI	$3.399 \cdot 10^{-18}$	$1.844 \cdot 10^{-18}$	0.4575	0.02843	0.02843	0
cpQ3	-0.08114	-0.08114	0	0.003053	0.003053	$3.275 \cdot 10^{-8}$
cpQM	-0.001786	-0.001786	0	$2.193 \cdot 10^{-5}$	$2.193 \cdot 10^{-5}$	0
cpb	0.01353	0.01353	0	0.0018	0.0018	0
sm	0	0	0	17.65	17.65	0

# 1.49 $b\bar{b} \rightarrow d\bar{d}$

		interfer	ence	square
	mod1	mod2	$1-{\tt mod2/mod1}$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
cQd1	-0.00626	-0.00626	$-1.597 \cdot 10^{-8}$	$0.4303 \qquad 0.4303 \qquad 0$
cQd8	0.007356	0.007356	0	$0.002478 \qquad 0.002478 \qquad 0$
cQq11	0.05937	0.05937	$1.684 \cdot 10^{-8}$	$0.2712 \qquad 0.2712 \qquad 0$
cQq13	0.05937	0.05937	$1.684 \cdot 10^{-8}$	$0.2712 \qquad 0.2712 \qquad 0$
cQq81	0.07795	0.07795	0	0.0263 $0.0263$ $0$
cQq83	0.07795	0.07795	0	0.0263 $0.0263$ $0$
cbQqd1	-0.01371	0	1	$0.5   0.5   3.1 \cdot 10^{-6}$
cbQqd1I	$-6.401 \cdot 10^{-19}$	0	1	$0.5   0.5   3.1 \cdot 10^{-6}$
cbQqd8	$6.094 \cdot 10^{-10}$	0	1	$0.1111$ $0.1111$ $2.97 \cdot 10^{-6}$
cbQqd8I	$4.072 \cdot 10^{-20}$	0	1	$0.1111$ $0.1111$ $2.88 \cdot 10^{-6}$
cbW	0.0001144	0.0001144	0	$0.006452 \qquad 0.006452 \qquad 0$
cbWI	$9.713 \cdot 10^{-18}$	$9.835 \cdot 10^{-18}$	-0.01265	$0.006451 \qquad 0.006451 \qquad 1.55 \cdot 10^{-8}$
cpQ3	0.00248	0.00248	0	$0.0001604 \qquad 0.0001604 \qquad \qquad 0$
cpQM	0.0004247	0.0004247	0	$1.398 \cdot 10^{-5}$ $1.398 \cdot 10^{-5}$ 0
cpb	$-4.87 \cdot 10^{-5}$	$-4.87 \cdot 10^{-5}$	$-2.054 \cdot 10^{-8}$	$2.176 \cdot 10^{-5}$ $2.176 \cdot 10^{-5}$ 0
sm	0	0	0	$0.6976 \qquad 0.6976 \qquad 0$

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

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cQQ1	-0.3028	-0.3028	0	0.4278	0.4278	0
cQQ8	0.02144	0.02144	0	0.01011	0.01011	0
cQb1	-0.01056	-0.01056	0	0.6185	0.6185	0
cQb8	0.3913	0.3913	0	0.1255	0.1255	0
cQt1	-0.1361	-0.1361	0	0.1195	0.1195	0
cQt8	0.04736	0.04736	0	0.1255	0.1255	0
cQtQb1	-0.01362	-0.01362	0	0.5326	0.5326	0
cQtQb1I	$-8.271 \cdot 10^{-19}$	$-2.117 \cdot 10^{-20}$	0.9744	0.9932	0.9932	0
cQtQb8	0.002675	0.002675	0	0.1138	0.1138	0
cQtQb8I	$-2.697 \cdot 10^{-18}$	$-9.54 \cdot 10^{-19}$	0.6463	0.09435	0.09435	0
cbW	0.007274	0.007274	0	0.1866	0.1866	0
cbWI	$-2.296 \cdot 10^{-18}$	$-4.904 \cdot 10^{-19}$	0.7865	0.1866	0.1866	0
cpQ3	-0.005942	-0.005942	$-1.683 \cdot 10^{-8}$	0.003809	0.003809	0
cpQM	-0.0007467	-0.0007467	$-1.339 \cdot 10^{-8}$	$1.951 \cdot 10^{-6}$	$1.951 \cdot 10^{-6}$	0
cpb	$3.185 \cdot 10^{-5}$	$3.185 \cdot 10^{-5}$	0	$1.9 \cdot 10^{-5}$	$1.9 \cdot 10^{-5}$	0
cpt	-0.001803	-0.001803	0	$3.172 \cdot 10^{-5}$	$3.172 \cdot 10^{-5}$	0
cptb	-0.0002273	-0.0002273	0	0.0006334	0.0006334	$1.579 \cdot 10^{-8}$
cptbI	$-2.597 \cdot 10^{-21}$	$-1.357 \cdot 10^{-21}$	0.4773	0.0006147	0.0006147	0
ctG	0.06842	0.06842	0	0.04083	0.04083	0
ctGI	$-2.368 \cdot 10^{-17}$	$-3.645 \cdot 10^{-17}$	-0.5393	0.03138	0.03138	0
ctW	0.02282	0.02282	$-1.753 \cdot 10^{-7}$	0.02929	0.02929	$1.707 \cdot 10^{-7}$
ctWI	$-2.611 \cdot 10^{-19}$	$-8.132 \cdot 10^{-18}$	-30.15	0.02321	0.02321	$8.619 \cdot 10^{-8}$
ctZ	0.005282	0.005282	$5.49 \cdot 10^{-7}$	0.003689	0.003689	$1.084 \cdot 10^{-6}$
ctZI	$2.042 \cdot 10^{-18}$	$3.471 \cdot 10^{-18}$	-0.6998	0.003673	0.003673	$1.089 \cdot 10^{-6}$
ctb1	-0.02483	-0.02483	0	0.4278	0.4278	0
ctb8	0.06001	0.06001	0	0.01368	0.01368	0
ctp	$-1.313 \cdot 10^{-5}$	$-1.313 \cdot 10^{-5}$	0	$6.089 \cdot 10^{-7}$	$6.089 \cdot 10^{-7}$	0

ctpI	$-4.61 \cdot 10^{-22}$	$1.474 \cdot 10^{-22}$	1.32	$6.906 \cdot 10^{-7}$	$6.906 \cdot 10^{-7}$	0
sm	0	0	0	1.208	1.208	0

# **1.51** $b\bar{b} \rightarrow u\bar{u}$

		interfer	ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cQbqu1	-0.01371	0	1	0.5	0.5	$3.06 \cdot 10^{-6}$		
cQbqu1I	$-7.71 \cdot 10^{-19}$	0	1	0.5	0.5	$3.04 \cdot 10^{-6}$		
cQbqu8	$-1.471 \cdot 10^{-24}$	0	1	0.1111	0.1111	$3.06 \cdot 10^{-6}$		
cQbqu8I	$-9.637 \cdot 10^{-20}$	0	1	0.1111	0.1111	$3.06 \cdot 10^{-6}$		
cQq11	-0.1073	-0.1073	0	0.5249	0.5249	0		
cQq13	0.1073	0.1073	0	0.5249	0.5249	0		
cQq81	0.06619	0.06619	0	0.02233	0.02233	0		
cQq83	-0.06619	-0.06619	0	0.02233	0.02233	0		
cQu1	0.01357	0.01357	0	0.4665	0.4665	0		
cQu8	0.05	0.05	0	0.01687	0.01687	0		
cbW	0.0001621	0.0001621	0	0.005147	0.005147	$1.943 \cdot 10^{-8}$		
cbWI	$2.834 \cdot 10^{-18}$	$2.833 \cdot 10^{-18}$	$8.046 \cdot 10^{-5}$	0.005146	0.005146	0		
cpQ3	0.0002195	0.0002195	0	$2.335 \cdot 10^{-5}$	$2.335 \cdot 10^{-5}$	$-4.283 \cdot 10^{-8}$		
$\mathtt{cpQM}$	0.0006251	0.0006251	$1.6 \cdot 10^{-8}$	$1.801 \cdot 10^{-5}$	$1.801 \cdot 10^{-5}$	$5.553 \cdot 10^{-8}$		
cpb	$2.273 \cdot 10^{-5}$	$2.273 \cdot 10^{-5}$	0	$1.623 \cdot 10^{-5}$	$1.623 \cdot 10^{-5}$	$6.162 \cdot 10^{-8}$		
sm	0	0	0	0.964	0.964	0		

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

	interference			square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
cQ131	0.2418	0.2418	0	1.143	1.143	0

cbW	0.0001396	0.0001396	0	0.001201	0.001201	0
cbWI	$2.641 \cdot 10^{-20}$	$-2.403 \cdot 10^{-21}$	1.091	0.001201	0.001201	0
cblS1	0	0	0	0.08333	0.08333	0
cblSI1	0	0	0	0.08333	0.08333	0
cpQ3	0.0008307	0.0008307	$1.204 \cdot 10^{-8}$	$2.518 \cdot 10^{-5}$	$2.518 \cdot 10^{-5}$	0
cptb	$-7.312 \cdot 10^{-7}$	$-7.312 \cdot 10^{-7}$	$1.368 \cdot 10^{-8}$	$1.816 \cdot 10^{-7}$	$1.816 \cdot 10^{-7}$	0
cptbI	$-6.137 \cdot 10^{-22}$	$5.845 \cdot 10^{-23}$	1.095	$1.556 \cdot 10^{-6}$	$1.556 \cdot 10^{-6}$	0
ctW	0.004947	0.004947	$2.021 \cdot 10^{-8}$	0.001994	0.001994	0
ctWI	$-3.599 \cdot 10^{-19}$	$4.34 \cdot 10^{-18}$	13.06	0.004019	0.004019	0
ctlS1	0	0	0	0.08333	0.08333	0
ctlSI1	0	0	0	0.08333	0.08333	0
ctlT1	0	0	0	0.857	0.857	0
ctlTI1	0	0	0	0.158	0.158	0
sm	0	0	0	0.001914	0.001914	$5.225 \cdot 10^{-8}$

### 1.53 $c\bar{c} \rightarrow \mu^+\mu^-$

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

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

interference square  $\verb|mod1| \verb|mod2| 1 - \verb|mod2| mod1|$ mod1 $mod2 \quad 1 - mod2/mod1$ 0 0 0  $0.5901 \quad 0.5901$ 0 sm**1.56**  $d\bar{d} \to e^+e^$ interference square  $mod1 \quad mod2 \quad 1 - mod2/mod1$ 1 - mod2/mod1mod1mod2 0 0 0  $0.0003563 \quad 0.0003563$ sm**1.57**  $e^+\nu_{\mu} \to e^+\nu_{\mu}$ interference square  $mod1 \quad mod2 \quad 1 - mod2/mod1$ mod2 1 - mod2/mod1mod1 $0.02028 \quad 0.02028 \quad -4.931 \cdot 10^{-8}$ 0 0 sm**1.58**  $e^+\nu_e \to \mu^+\nu_\mu$ interference square  $mod2 \quad 1 - mod2/mod1$ 1 - mod2/mod1mod1mod2  $3.219 \cdot 10^{-8}$ 0 0  $0.03106 \quad 0.03106$ 0 sm**1.59**  $e^+\nu_e \to e^+\nu_e$ interference square  $mod1 \quad mod2 \quad 1 - mod2/mod1$ mod1mod2 1 - mod2/mod1

 $0.01399 \quad 0.01399$ 

0

sm

0

**1.60** 
$$e^+\tau^- \to e^+\tau^-$$

1.61 
$$e^+e^- \to \mu^+\mu^-$$

**1.62** 
$$e^+e^- \rightarrow e^+e^-$$

### **1.63** $gg \rightarrow gg$

### **1.64** $gg \rightarrow ggg$

 $\mathtt{sm} \qquad 0 \qquad 0 \qquad \qquad 0 \qquad \qquad 4.503 \quad 4.503 \qquad \qquad 0$ 

**1.65**  $gg \rightarrow t\bar{t}$ 

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
ctG	0.7353	0.7353	0	0.1235	0.1235	0
ctGI	$-2.792 \cdot 10^{-18}$	$1.577 \cdot 10^{-17}$	6.648	0.1007	0.1007	0
sm	0	0	0	0.7574	0.7574	0

**1.66**  $gg \rightarrow u\bar{u}$ 

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

1.68  $s\bar{s} \rightarrow s\bar{s}$ 

# 1.69 $t\bar{t} \rightarrow \nu_{\mu}\bar{\nu}_{\mu}$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cQ132	0.004268	0.004268	$2.343 \cdot 10^{-8}$	0.06268	0.06268	0		
cQ1M2	0.04163	0.04163	0	0.2231	0.2231	0		
cpQM	$-1.629 \cdot 10^{-5}$	$-1.629 \cdot 10^{-5}$	0	$1.031 \cdot 10^{-6}$	$1.031 \cdot 10^{-6}$	0		
cpt	$6.225 \cdot 10^{-5}$	$6.225 \cdot 10^{-5}$	$-3.213 \cdot 10^{-8}$	$7.587 \cdot 10^{-6}$	$7.587 \cdot 10^{-6}$	0		
ctW	$2.87 \cdot 10^{-10}$	0	1	$1.038 \cdot 10^{-15}$	0	1		
ctWI	$7.64 \cdot 10^{-25}$	0	1	$1.173 \cdot 10^{-15}$	0	1		
ctZ	0.0005765	0.0005765	$6.071 \cdot 10^{-7}$	0.003288	0.003288	$1.095 \cdot 10^{-6}$		
ctZI	$1.823 \cdot 10^{-18}$	$4.711 \cdot 10^{-19}$	0.7415	0.001605	0.001605	$1.121 \cdot 10^{-6}$		
ctl2	-0.007424	-0.007424	$-2.694 \cdot 10^{-8}$	0.1079	0.1079	0		
sm	0	0	0	0.001969	0.001969	0		

# 1.70 $t\bar{t} \rightarrow \tau^+\tau^-$

	interference			square
	mod1	mod2	$1-{\tt mod2/mod1}$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
cQe3	-0.01443	-0.01443	$-6.928 \cdot 10^{-8}$	$0.3034 \qquad 0.3034 \qquad 0$
cQ1M3	-0.05323	-0.05323	0	0.2254   0.2254   0
cpQM	$4.982 \cdot 10^{-5}$	$4.982 \cdot 10^{-5}$	$-4.015 \cdot 10^{-8}$	$4.729 \cdot 10^{-6}$ $4.729 \cdot 10^{-6}$ $-4.229 \cdot 10^{-8}$
cpt	0.0001383	0.0001383	$-7.23 \cdot 10^{-8}$	$3.779 \cdot 10^{-6}  3.779 \cdot 10^{-6}  -2.646 \cdot 10^{-8}$
ctW	0.005969	0.005969	$5.194 \cdot 10^{-7}$	$0.0184 \qquad 0.0184 \qquad 1.141 \cdot 10^{-6}$
ctWI	$-1.382 \cdot 10^{-20}$	$-2.176 \cdot 10^{-19}$	-14.74	$0.009571 \qquad 0.009571 \qquad 1.149 \cdot 10^{-6}$
ctZ	-0.007504	-0.007504	$5.331 \cdot 10^{-7}$	$0.0111   0.0111   1.171 \cdot 10^{-6}$
ctZI	$-9.496 \cdot 10^{-19}$	$-9.473 \cdot 10^{-19}$	0.002425	$0.002356 \qquad 0.002356 \qquad 1.103 \cdot 10^{-6}$
cte3	-0.03903	-0.03903	0	0.2254   0.2254   0
ct13	-0.015	-0.015	0	$0.1493 \qquad 0.1493 \qquad 0$

ctlS3	0.003346	0.003346	0	$0.1668 \qquad 0.1668$	0
ctlSI3	$2.387 \cdot 10^{-20}$	$6.303 \cdot 10^{-21}$	0.736	0.1668 0.1668	0
ctlT3	0.01232	0.01232	0	2.216 $2.216$	0
ctlTI3	$4.035 \cdot 10^{-19}$	$-1.68 \cdot 10^{-18}$	5.165	2.216 $2.216$	0
ctp	$-1 \cdot 10^{-6}$	$-1 \cdot 10^{-6}$	0	$3.101 \cdot 10^{-8}  3.101 \cdot 10^{-8}$	0
ctpI	$9.492 \cdot 10^{-24}$	$-4.788 \cdot 10^{-24}$	1.504	$3.49 \cdot 10^{-8}$ $3.49 \cdot 10^{-8}$	0
sm	0	0	0	$0.003847 \qquad 0.003847$	0

# $1.71 \quad t\bar{t} \to c\bar{c}$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
cQq11	0.002307	0.002307	0	0.006771	0.006771	0		
cQq13	0.002307	0.002307	0	0.006771	0.006771	0		
cQq81	0.03057	0.03057	0	0.003742	0.003742	0		
cQq83	0.03057	0.03057	0	0.003742	0.003742	0		
cQu1	0.02605	0.02605	$-3.839 \cdot 10^{-8}$	0.8096	0.8096	0		
cQu8	0.6104	0.6104	0	0.1994	0.1994	0		
$\mathtt{cpQM}$	$6.115 \cdot 10^{-5}$	$6.115 \cdot 10^{-5}$	$-4.906 \cdot 10^{-8}$	$6.351 \cdot 10^{-6}$	$6.351 \cdot 10^{-6}$	$-4.724 \cdot 10^{-8}$		
cpt	-0.0001293	-0.0001293	0	$2.251 \cdot 10^{-5}$	$2.251 \cdot 10^{-5}$	0		
ctG	0.1977	0.1977	0	0.01717	0.01717	0		
ctGI	$3.676 \cdot 10^{-25}$	$7.353 \cdot 10^{-25}$	-1	0.007723	0.007723	0		
ctQqu1	-0.4725	0	1	0.5004	0.5004	$3.097 \cdot 10^{-6}$		
ctQqu1I	$8.269 \cdot 10^{-21}$	0	1	0.5004	0.5004	$3.097 \cdot 10^{-6}$		
ctQqu8	$2.1 \cdot 10^{-8}$	0	1	0.1112	0.1112	$2.878 \cdot 10^{-6}$		
ctQqu8I	$1.1 \cdot 10^{-19}$	0	1	0.1112	0.1112	$2.878 \cdot 10^{-6}$		
ctW	0.004844	0.004844	$4.129 \cdot 10^{-7}$	0.01326	0.01326	$9.802 \cdot 10^{-7}$		
ctWI	$1.156 \cdot 10^{-10}$	$1.156 \cdot 10^{-10}$	$6.057 \cdot 10^{-7}$	0.0131	0.0131	$9.927 \cdot 10^{-7}$		
ctZ	-0.003807	-0.003807	$5.516 \cdot 10^{-7}$	0.01282	0.01282	$1.092 \cdot 10^{-6}$		

ctZI	$-1.012 \cdot 10^{-10}$	$-1.012 \cdot 10^{-10}$	$5.931 \cdot 10^{-7}$	0.003044	0.003044	$1.117\cdot10^{-6}$
ctq1	0.02913	0.02913	0	0.8096	0.8096	0
ctq8	0.265	0.265	0	0.08286	0.08286	0
ctu1	0.001602	0.001602	$-6.244 \cdot 10^{-8}$	0.006771	0.006771	0
ctu8	0.02394	0.02394	0	0.001505	0.001505	0
sm	0	0	0	0.5957	0.5957	0

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cQd1	-0.01551	-0.01551	0	0.9871	0.9871	0		
cQd8	0.1051	0.1051	0	0.02888	0.02888	0		
cQq11	-0.1456	-0.1456	0	0.7166	0.7166	0		
cQq13	0.1456	0.1456	0	0.7166	0.7166	0		
cQq81	0.02034	0.02034	0	0.000289	0.000289	0		
cQq83	-0.02034	-0.02034	0	0.000289	0.000289	0		
cQtqd1	-0.4725	0	1	0.5004	0.5004	$3.037 \cdot 10^{-6}$		
cQtqd1I	$4.761 \cdot 10^{-17}$	0	1	0.5004	0.5004	$3.057 \cdot 10^{-6}$		
cQtqd8	$-5.991 \cdot 10^{-18}$	0	1	0.1112	0.1112	$3.057 \cdot 10^{-6}$		
cQtqd8I	$-6.311 \cdot 10^{-19}$	0	1	0.1112	0.1112	$3.057 \cdot 10^{-6}$		
cpQM	-0.001028	-0.001028	0	$3.596 \cdot 10^{-5}$	$3.596 \cdot 10^{-5}$	0		
cpt	$1.789 \cdot 10^{-5}$	$1.789 \cdot 10^{-5}$	$-1.118 \cdot 10^{-7}$	$7.276 \cdot 10^{-6}$	$7.276 \cdot 10^{-6}$	0		
ctG	0.1977	0.1977	0	0.02947	0.02947	0		
ctGI	$3.676 \cdot 10^{-25}$	$3.309 \cdot 10^{-24}$	-8	0.02002	0.02002	0		
ctW	-0.0001442	-0.0001442	$-3.746 \cdot 10^{-6}$	0.001482	0.001482	$4.049 \cdot 10^{-7}$		
ctWI	$1.302 \cdot 10^{-15}$	$1.306 \cdot 10^{-15}$	-0.003349	0.004795	0.004795	$3.754 \cdot 10^{-7}$		
ctZ	0.0006255	0.0006255	$6.235 \cdot 10^{-7}$	0.005062	0.005062	$1.106 \cdot 10^{-6}$		
ctZI	$-1.262 \cdot 10^{-15}$	$-1.262 \cdot 10^{-15}$	$1.585 \cdot 10^{-7}$	0.002344	0.002344	$1.109 \cdot 10^{-6}$		

ctd1	-0.0004884	-0.0004884	$-2.047 \cdot 10^{-8}$	0.001301	0.001301	0
ctd8	0.02034	0.02034	0	0.000289	0.000289	0
ctq1	0.02267	0.02267	$-4.41 \cdot 10^{-8}$	0.9871	0.9871	0
ctq8	0.146	0.146	0	0.04271	0.04271	0
sm	0	0	0	0.5901	0.5901	0

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cQd1	-0.002546	-0.002546	0	0.06121	0.06121	0		
cQd8	0.4444	0.4444	0	0.1434	0.1434	0		
cQq11	-0.08394	-0.08394	0	0.4148	0.4148	0		
cQq13	0.08394	0.08394	0	0.4148	0.4148	0		
cQq81	0.4223	0.4223	0	0.136	0.136	0		
cQq83	-0.4223	-0.4223	0	0.136	0.136	0		
cQtqd1	-0.4725	0	1	0.5004	0.5004	$3.057 \cdot 10^{-6}$		
cQtqd1I	$1.754 \cdot 10^{-17}$	0	1	0.5004	0.5004	$3.057 \cdot 10^{-6}$		
cQtqd8	$-8.343 \cdot 10^{-18}$	0	1	0.1112	0.1112	$3.057 \cdot 10^{-6}$		
cQtqd8I	$-4.082 \cdot 10^{-18}$	0	1	0.1112	0.1112	$3.057 \cdot 10^{-6}$		
cpQM	-0.0005893	-0.0005893	0	$2.104 \cdot 10^{-5}$	$2.104 \cdot 10^{-5}$	0		
cpt	$9.445 \cdot 10^{-5}$	$9.445 \cdot 10^{-5}$	$-3.176 \cdot 10^{-8}$	$3.242 \cdot 10^{-5}$	$3.242 \cdot 10^{-5}$	0		
ctG	0.1977	0.1977	0	0.04437	0.04437	0		
ctGI	$5.882 \cdot 10^{-24}$	$5.882 \cdot 10^{-24}$	0	0.03492	0.03492	0		
ctW	0.005199	0.005199	$-9.617 \cdot 10^{-8}$	0.005055	0.005055	$3.759 \cdot 10^{-7}$		
ctWI	$5.662 \cdot 10^{-13}$	$5.662 \cdot 10^{-13}$	$7.807 \cdot 10^{-6}$	0.003448	0.003448	$4.06 \cdot 10^{-7}$		
ctZ	-0.0003705	-0.0003705	$4.859 \cdot 10^{-7}$	0.003952	0.003952	$1.113 \cdot 10^{-6}$		
ctZI	$-4.955 \cdot 10^{-13}$	$-4.955 \cdot 10^{-13}$	$-1.514 \cdot 10^{-6}$	0.004089	0.004089	$1.101 \cdot 10^{-6}$		
ctd1	-0.03534	-0.03534	0	0.6118	0.6118	0		

ctd8	0.4223	0.4223	0	0.136	0.136	0
ctq1	-0.004266	-0.004266	0	0.06121	0.06121	0
ctq8	0.04671	0.04671	0	0.00919	0.00919	0
sm	0	0	0	0.7717	0.7717	0

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

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cQQ1	-2.112	-2.112	0	3.745	3.745	0		
cQQ8	-1.678	-1.678	0	0.5809	0.5809	0		
cQt1	-0.3278	-0.3278	0	8.258	8.258	0		
cQt8	-3.04	-3.04	0	2.028	2.028	0		
cpQM	0.1459	0.1459	0	0.009008	0.009008	$-1.11 \cdot 10^{-8}$		
cpt	-0.226	-0.226	0	0.01043	0.01043	0		
ctG	0.2613	0.2613	0	0.9642	0.9642	0		
ctGI	$-3.818 \cdot 10^{-17}$	$-1.905 \cdot 10^{-17}$	0.501	0.896	0.896	0		
ctW	-0.3317	-0.3317	$4.823 \cdot 10^{-7}$	0.5561	0.5561	$9.71 \cdot 10^{-7}$		
ctWI	$2.88 \cdot 10^{-17}$	$6.418 \cdot 10^{-17}$	-1.229	1.211	1.211	$9.908 \cdot 10^{-7}$		
ctZ	1.027	1.027	$4.87 \cdot 10^{-7}$	0.861	0.861	$1.092 \cdot 10^{-6}$		
ctZI	$-3.838 \cdot 10^{-16}$	$-7.088 \cdot 10^{-17}$	0.8153	0.5424	0.5424	$1.106 \cdot 10^{-6}$		
ctp	0.1969	0.1969	0	0.009361	0.009361	0		
ctpI	$6.42 \cdot 10^{-18}$	$4.804 \cdot 10^{-18}$	0.2517	0.004965	0.004965	0		
ctt1	-3.868	-3.868	0	14.98	14.98	0		
sm	0	0	0	1.564	1.564	0		

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

interference square

 $\verb|mod1| \verb|mod2| 1 - \verb|mod2| mod1|$ mod2 1 - mod2/mod1mod10 0 0.001619 0.001619 0 0 sm1.76  $u\bar{d} \rightarrow c\bar{s}$ interference square  $mod1 \quad mod2 \quad 1 - mod2/mod1$ mod2 1 - mod2/mod1mod10 0 0  $0.00282 \quad 0.00282$ 0 sm1.77  $u\bar{d} \rightarrow u\bar{d}$ interference square  $mod1 \quad mod2 \quad 1 - mod2/mod1$  $\bmod 1 \quad \bmod 2 \quad 1 - \bmod 2 / \bmod 1$ 0 0 10.49 10.49 0 0 sm1.78  $u\bar{u} \rightarrow \nu_e \bar{\nu}_e$ interference square  $mod1 \quad mod2 \quad 1 - mod2/mod1$ mod2 1 - mod2/mod1mod10 0 0 0.0008608 0.0008608  $1.162 \cdot 10^{-8}$ sm1.79 $u\bar{u} \to u\bar{u}$ interference square  $mod1 \quad mod2 \quad 1 - mod2/mod1$  $mod1 \quad mod2 \quad 1 - mod2/mod1$ 0 3.784 3.784

0

0

 $\mathtt{sm}$ 

#### **1.80** $zz \to W^+W^-$

#### 1.81 $zz \rightarrow zz$

### 2 By parameter point

### 2.1 cQQ1

		erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$b\bar{b}  o b\bar{b}$	-0.01732	-0.01732	0	0.1131	0.1131	0
$b\bar{b} \to t\bar{t}$	-0.3028	-0.3028	0	0.4278	0.4278	0
$t\bar{t} \to t\bar{t}$	-2.112	-2.112	0	3.745	3.745	0

### 2.2 cQQ8

interference square 1 - mod2/mod1mod2 1 - mod2/mod1mod1mod2 mod1 $b\bar{b} \to b\bar{b}$ -0.5114-0.51140.13580 0.13580  $b\bar{b} \to t\bar{t}$ 0.02144 0.02144 0 0.010110.01011 0

 $t\bar{t} \to t\bar{t}$  -1.678 -1.678 0 0.5809 0.5809

### 2.3 cQb1

interference square 1 - mod2/mod1 $mod2 \quad 1 - mod2/mod1$ mod1mod2 mod1 $b\bar{b} \to b\bar{b}$ 0.07938  $-2.52 \cdot 10^{-8}$ 0.079382.209 2.209 0  $b\bar{b} \to t\bar{t}$ -0.01056 -0.010560 0.61850.61850

### 2.4 cQb8

interference square mod11 - mod2/mod1 $mod2 \quad 1 - mod2/mod1$ mod2 mod1 $b\bar{b} \to b\bar{b}$ -5.649-5.6490.4680 0.4680  $b\bar{b} \to t\bar{t}$ 0.3913 0.3913 0.12550 0.12550

#### 2.5 cQbqu1

interference square  $mod2 \quad 1 - mod2/mod1$  $mod1 \quad mod2 \quad 1 - mod2/mod1$ mod1  $\bar{b}t \to \bar{d}u$ 0 0.25 0.25 $3.08 \cdot 10^{-6}$ 0 0  $b\bar{b} \to u\bar{u}$ 0.50.5  $3.06 \cdot 10^{-6}$ -0.013710 1

#### 2.6 cQbqu1I

 $b\bar{b} \to u\bar{u}$   $-7.71 \cdot 10^{-19}$  0 1 0.5 0.5 3.04 · 10<sup>-6</sup>

### 2.7 cQbqu8

		$int\epsilon$	erference		square		
	mod1	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1 m	od2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556 - 0.0	)5556	$3.06 \cdot 10^{-6}$	
$b\bar{b} \to u\bar{u}$	$-1.471 \cdot 10^{-24}$	0	1	0.1111 0.	1111	$3.06 \cdot 10^{-6}$	

### 2.8 cQbqu8I

	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	$0.05556  0.05556  3.06 \cdot 10^{-6}$
$b\bar{b} \to u\bar{u}$	$-9.637 \cdot 10^{-20}$	0	1	$0.1111  0.1111  3.06 \cdot 10^{-6}$

### 2.9 cQd1

		rference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$b\bar{b} \to d\bar{d}$	-0.00626	-0.00626	$-1.597 \cdot 10^{-8}$	0.4303	0.4303	0	
$t\bar{t} \to d\bar{d}$	-0.01551	-0.01551	0	0.9871	0.9871	0	
$t\bar{t} \to s\bar{s}$	-0.002546	-0.002546	0	0.06121	0.06121	0	

### 2.10 cQd8

$b\bar{b} \to d\bar{d}$	0.007356	0.007356	0	0.002478	0.002478	0
$t\bar{t} \to d\bar{d}$	0.1051	0.1051	0	0.02888	0.02888	0
$t\bar{t} \to s\bar{s}$	0.4444	0.4444	0	0.1434	0.1434	0

## 2.11 cQe2

		inter	ference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to \mu^+ \mu^-$	-0.004145	-0.004145	$-2.413 \cdot 10^{-8}$	0.09497	0.09497	0	

# 2.12 cQe3

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$t\bar{t} \to \tau^+ \tau^-$	-0.01443	-0.01443	$-6.928 \cdot 10^{-8}$	0.3034	0.3034	0	

# 2.13 cQl31

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{t} \to e^- \bar{\nu}_e$	0.2418	0.2418	0	1.143	1.143	0	

# 2.14 cQl32

		int	terference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to \mu^+\mu^-$	0.03679	0.03679	$2.718 \cdot 10^{-8}$	0.3876	0.3876	0	
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.004268	0.004268	$2.343 \cdot 10^{-8}$	0.06268	0.06268	0	

# 2.15 cQlM1

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to \nu_e \bar{\nu}_e$	-0.02137	-0.02137	0	0.09153	0.09153	0	

# 2.16 cQlM2

		in	nterference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o \mu^+\mu^-$	0.03224	0.03224	0	0.1698	0.1698	0		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.04163	0.04163	0	0.2231	0.2231	0		

## 2.17 cQlM3

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$t\bar{t} \to \tau^+ \tau^-$	-0.05323	-0.05323	0	0.2254	0.2254	0	

## $2.18 \quad \mathrm{cQq}11$

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o d\bar{d}$	0.05937	0.05937	$1.684 \cdot 10^{-8}$	0.2712	0.2712	0	
$b\bar{b} \to u\bar{u}$	-0.1073	-0.1073	0	0.5249	0.5249	0	
$t\bar{t} \to c\bar{c}$	0.002307	0.002307	0	0.006771	0.006771	0	
$t\bar{t} \to d\bar{d}$	-0.1456	-0.1456	0	0.7166	0.7166	0	
$t\bar{t} \to s\bar{s}$	-0.08394	-0.08394	0	0.4148	0.4148	0	

# $2.19 \quad \mathrm{cQq} 13$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	0.09356	0.09356	$1.069 \cdot 10^{-8}$	0.4422	0.4422	0	
$b\bar{b} \to d\bar{d}$	0.05937	0.05937	$1.684 \cdot 10^{-8}$	0.2712	0.2712	0	
$b\bar{b} \to u\bar{u}$	0.1073	0.1073	0	0.5249	0.5249	0	
$t\bar{t} \to c\bar{c}$	0.002307	0.002307	0	0.006771	0.006771	0	
$t\bar{t} \to d\bar{d}$	0.1456	0.1456	0	0.7166	0.7166	0	
$t\bar{t} \to s\bar{s}$	0.08394	0.08394	0	0.4148	0.4148	0	

# $2.20 \quad \mathrm{cQq}81$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
$b\bar{b} \to d\bar{d}$	0.07795	0.07795	0	0.0263	0.0263	0		
$b\bar{b} \to u\bar{u}$	0.06619	0.06619	0	0.02233	0.02233	0		
$t\bar{t} \to c\bar{c}$	0.03057	0.03057	0	0.003742	0.003742	0		
$t\bar{t} \to d\bar{d}$	0.02034	0.02034	0	0.000289	0.000289	0		
$t\bar{t} \to s\bar{s}$	0.4223	0.4223	0	0.136	0.136	0		

# $2.21 \quad \text{cQq83}$

		interfer	rence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	$-6.081 \cdot 10^{-18}$	$3.892 \cdot 10^{-20}$	1.006	0.6616	0.6616	0	
$b\bar{b} \to d\bar{d}$	0.07795	0.07795	0	0.0263	0.0263	0	
$b\bar{b} \to u\bar{u}$	-0.06619	-0.06619	0	0.02233	0.02233	0	
$t\bar{t} \to c\bar{c}$	0.03057	0.03057	0	0.003742	0.003742	0	

### 2.22 cQt1

		$in^{1}$	terference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	-0.1361	-0.1361	0	0.1195	0.1195	0	
$t\bar{t} \to t\bar{t}$	-0.3278	-0.3278	0	8.258	8.258	0	

#### 2.23 cQt8

		in	nterference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	0.04736	0.04736	0	0.1255	0.1255	0	
$t \bar t  o t \bar t$	-3.04	-3.04	0	2.028	2.028	0	

### 2.24 cQtQb1

### 2.25 cQtQb1I

# 2.26 cQtQb8

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	0.002675	0.002675	0	0.1138	0.1138	0	

# 2.27 cQtQb8I

		interfer		squa	are	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$b\bar{b} \to t\bar{t}$	$-2.697 \cdot 10^{-18}$	$-9.54 \cdot 10^{-19}$	0.6463	0.09435	0.09435	0

### $\mathbf{2.28} \quad \mathbf{cQtqd1}$

	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	$3.08 \cdot 10^{-6}$		
$t\bar{t} \to d\bar{d}$	-0.4725	0	1	0.5004	0.5004	$3.037 \cdot 10^{-6}$		
$t\bar{t} \to s\bar{s}$	-0.4725	0	1	0.5004	0.5004	$3.057 \cdot 10^{-6}$		

## 2.29 cQtqd1I

		int	erference		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	$3.08 \cdot 10^{-6}$	
$t\bar{t} \to d\bar{d}$	$4.761 \cdot 10^{-17}$	0	1	0.5004	0.5004	$3.057 \cdot 10^{-6}$	
$t\bar{t} \to s\bar{s}$	$1.754 \cdot 10^{-17}$	0	1	0.5004	0.5004	$3.057 \cdot 10^{-6}$	

# $\mathbf{2.30} \quad \mathbf{cQtqd8}$

		erference		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	$3.06 \cdot 10^{-6}$	
$t\bar{t} \to d\bar{d}$	$-5.991 \cdot 10^{-18}$	0	1	0.1112	0.1112	$3.057 \cdot 10^{-6}$	
$t\bar{t} \to s\bar{s}$	$-8.343 \cdot 10^{-18}$	0	1	0.1112	0.1112	$3.057 \cdot 10^{-6}$	

# 2.31 cQtqd8I

		erference		square			
	$\mathtt{mod1} \qquad \mathtt{mod2}  1-\mathtt{mod2}/\mathtt{mod1}$			mod1 r	mod2	1 - mod2/mod1	
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556  0.	05556	$3.06 \cdot 10^{-6}$	
$t\bar{t} \to d\bar{d}$	$-6.311 \cdot 10^{-19}$	0	1	0.1112 0	.1112	$3.057 \cdot 10^{-6}$	
$t\bar{t} \to s\bar{s}$	$-4.082 \cdot 10^{-18}$	0	1	0.1112 0	.1112	$3.057 \cdot 10^{-6}$	

# 2.32 cQu1

		in	nterference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to u\bar{u}$	0.01357	0.01357	0	0.4665	0.4665	0	
$t\bar{t} \to c\bar{c}$	0.02605	0.02605	$-3.839 \cdot 10^{-8}$	0.8096	0.8096	0	

# 2.33 cQu8

		interference			square		
	mod1	$\mathtt{mod1}  \mathtt{mod2}  1 - \mathtt{mod2}/\mathtt{mod1}$			mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to u\bar{u}$	0.05	0.05	0	0.01687	0.01687	0	

 $t\bar{t} \to c\bar{c}$  0.6104 0.6104 0 0.1994 0.1994 0

### 2.34 cbQqd1

interference square  $mod2 \quad 1 - mod2/mod1$  $mod2 \quad 1 - mod2/mod1$ mod1mod1 $\bar{b}t \to \bar{d}u$ 0  $3.12\cdot 10^{-6}$ 0 0.250.250  $b\bar{b} \to d\bar{d}$ -0.013710 0.50.5  $3.1 \cdot 10^{-6}$ 

### 2.35 cbQqd1I

interference square  $mod2 \quad 1 - mod2/mod1$  $mod2 \quad 1 - mod2/mod1$ mod1 mod1 $\bar{b}t \to \bar{d}u$  $3.12\cdot 10^{-6}$ 0.25 0.25 0 0 0  $b\bar{b} \to d\bar{d}$  $-6.401 \cdot 10^{-19}$ 0.50.5 $3.1 \cdot 10^{-6}$ 1 0

### 2.36 cbQqd8

interference square  $mod2 \quad 1 - mod2/mod1$ 1 - mod2/mod1mod1 mod1mod2  $\bar{b}t \to \bar{d}u$  $2.934 \cdot 10^{-6}$ 0 0.055560 0.055560  $b\bar{b} \to d\bar{d}$  $6.094 \cdot 10^{-10}$  $2.97 \cdot 10^{-6}$ 0 0.1111 0.1111

### 2.37 cbQqd8I

 $b\bar{b} \to d\bar{d}$  4.072 · 10<sup>-20</sup> 0 1 0.1111 0.1111 2.88 · 10<sup>-6</sup>

## 2.38 cbW

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$HH \to W^+ \bar{t} b$	$-5.796 \cdot 10^{-8}$	$-5.796 \cdot 10^{-8}$	$-1.035 \cdot 10^{-7}$	$3.385 \cdot 10^{-5}$	$3.385 \cdot 10^{-5}$	0		
$HH  o z \bar{b} b$	$-2.449 \cdot 10^{-7}$	$-2.449 \cdot 10^{-7}$	$4.083 \cdot 10^{-8}$	$4.512 \cdot 10^{-6}$	$4.512 \cdot 10^{-6}$	$2.216 \cdot 10^{-8}$		
$HW^+ \to \gamma t \bar{b}$	$-1.95 \cdot 10^{-8}$	$3.048 \cdot 10^{-7}$	16.63	$5.666 \cdot 10^{-7}$	$9.314 \cdot 10^{-6}$	-15.44		
$HW^- \to \bar{t}b$	0.006092	0.006092	0	2.252	2.252	0		
$H\gamma \to b\bar{b}$	$-1.387 \cdot 10^{-6}$	$-1.387 \cdot 10^{-6}$	$-7.212 \cdot 10^{-8}$	0.6934	0.6934	$-1.442 \cdot 10^{-8}$		
$Hz \to b\bar{b}$	0.001427	0.001427	0	1.267	1.267	0		
$W^+W^- \to Hb\bar{b}$	$-6.562 \cdot 10^{-7}$	$-2.625 \cdot 10^{-5}$	-39.01	$1.869 \cdot 10^{-5}$	0.0004688	-24.09		
$W^+W^- \to H t \bar t$	$1.83 \cdot 10^{-7}$	$1.83 \cdot 10^{-7}$	0	$2.081 \cdot 10^{-8}$	$2.081 \cdot 10^{-8}$	0		
$\bar{b}t \to \bar{d}u$	0.0001548	0.0001548	0	0.01198	0.01198	0		
$b\bar{b} \to \gamma \gamma$	$4.91 \cdot 10^{-6}$	$4.91 \cdot 10^{-6}$	$-2.037 \cdot 10^{-8}$	0.0006187	0.0006187	$-3.233 \cdot 10^{-8}$		
$b\bar{b} \to \mu^+\mu^-$	$4.572 \cdot 10^{-5}$	$4.572 \cdot 10^{-5}$	0	0.002081	0.002081	0		
$b\bar{b}  o  u_e \bar{ u}_e$	$7.973 \cdot 10^{-5}$	$7.973 \cdot 10^{-5}$	$1.254 \cdot 10^{-8}$	0.0003012	0.0003012	$3.32 \cdot 10^{-8}$		
$b\bar{b} \to b\bar{b}$	0.002453	0.002453	0	0.02843	0.02843	0		
$b\bar{b} \to d\bar{d}$	0.0001144	0.0001144	0	0.006452	0.006452	0		
$b\bar{b} \to t\bar{t}$	0.007274	0.007274	0	0.1866	0.1866	0		
$b\bar{b} \to u\bar{u}$	0.0001621	0.0001621	0	0.005147	0.005147	$1.943 \cdot 10^{-8}$		
$b\bar{t} \to e^- \bar{\nu}_e$	0.0001396	0.0001396	0	0.001201	0.001201	0		

### 2.39 cbWI

$HH  o z \bar{b} b$	$1.854 \cdot 10^{-8}$	$1.854 \cdot 10^{-8}$	0	$4.492 \cdot 10^{-6}$	$4.492 \cdot 10^{-6}$	$2.226 \cdot 10^{-8}$
$HW^+  o \gamma t \bar{b}$	$-4.077 \cdot 10^{-8}$	$-6.916 \cdot 10^{-8}$	-0.6962	$5.665 \cdot 10^{-7}$	$9.312 \cdot 10^{-6}$	-15.44
$HW^- \to \bar{t}b$	$1.082 \cdot 10^{-7}$	$1.082 \cdot 10^{-7}$	0	2.252	2.252	0
$H\gamma \to b\bar{b}$	$3.145 \cdot 10^{-19}$	$3.143 \cdot 10^{-19}$	0.0006312	0.6934	0.6934	$-1.442 \cdot 10^{-8}$
$Hz \to b\bar{b}$	$3.477 \cdot 10^{-6}$	$3.477 \cdot 10^{-6}$	0	1.267	1.267	0
$W^+W^-  o Hbar{b}$	$2.628 \cdot 10^{-7}$	$-1.031 \cdot 10^{-6}$	4.923	$1.869 \cdot 10^{-5}$	0.0004685	-24.07
$W^+W^-  o Ht\bar{t}$	$-2.718 \cdot 10^{-8}$	$-2.718 \cdot 10^{-8}$	0	$2.149 \cdot 10^{-8}$	$2.149 \cdot 10^{-8}$	0
$\bar{b}t \to \bar{d}u$	$9.36 \cdot 10^{-20}$	$8.907 \cdot 10^{-20}$	0.04839	0.01198	0.01198	0
$b\bar{b} \to \gamma \gamma$	$-9.127 \cdot 10^{-23}$	$-1.547 \cdot 10^{-22}$	-0.6947	0.0006186	0.0006186	$-4.849 \cdot 10^{-8}$
$b\bar{b}  o \mu^+\mu^-$	$4.555 \cdot 10^{-16}$	$4.554 \cdot 10^{-16}$	0.0001682	0.00208	0.00208	0
$b\bar{b}  o  u_e \bar{ u}_e$	$2.823 \cdot 10^{-21}$	$2.818 \cdot 10^{-21}$	0.001661	0.0003008	0.0003008	$3.324 \cdot 10^{-8}$
$b\bar{b}  o b\bar{b}$	$3.399 \cdot 10^{-18}$	$1.844 \cdot 10^{-18}$	0.4575	0.02843	0.02843	0
$b\bar{b} \to d\bar{d}$	$9.713 \cdot 10^{-18}$	$9.835 \cdot 10^{-18}$	-0.01265	0.006451	0.006451	$1.55 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	$-2.296 \cdot 10^{-18}$	$-4.904 \cdot 10^{-19}$	0.7865	0.1866	0.1866	0
$b\bar{b} \to u\bar{u}$	$2.834 \cdot 10^{-18}$	$2.833 \cdot 10^{-18}$	$8.046 \cdot 10^{-5}$	0.005146	0.005146	0
$b\bar{t} \to e^- \bar{\nu}_e$	$2.641 \cdot 10^{-20}$	$-2.403 \cdot 10^{-21}$	1.091	0.001201	0.001201	0

## 2.40 cblS1

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{t} \to e^- \bar{\nu}_e$	0	0	0	0.08333	0.08333	0	

## 2.41 cblS2

### 2.42 cblSI1

#### 2.43 cblSI2

### 2.44 cbtud1

#### 2.45 cbtud1I

#### 2.46 cbtud8

 $\bar{b}t \to \bar{d}u$  0 0 0 0.03045 0.03045 5.911 · 10<sup>-6</sup>

## 2.47 cbtud8I

## $2.48 \quad cpQ3$

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^+ \bar{t} b$	$-2.804 \cdot 10^{-6}$	$-4.989 \cdot 10^{-6}$	-0.7794	$3.382 \cdot 10^{-5}$	$2.37 \cdot 10^{-5}$	0.2992		
$HH  o z \bar{b} b$	$1.685 \cdot 10^{-6}$	$2.276 \cdot 10^{-6}$	-0.3513	$2.621 \cdot 10^{-6}$	$9.492 \cdot 10^{-5}$	-35.22		
$HW^+  o \gamma t \bar{b}$	$-3.665 \cdot 10^{-7}$	$-3.665 \cdot 10^{-7}$	$-2.729 \cdot 10^{-8}$	$4.975 \cdot 10^{-7}$	$4.975 \cdot 10^{-7}$	$-2.01 \cdot 10^{-8}$		
$HW^- \to \bar{t}b$	-1.402	-1.402	0	0.2192	0.2192	0		
$Hz \to b\bar{b}$	0.3894	0.3894	0	3.389	3.389	0		
$W^+W^-  o Hb\bar b$	$3.142 \cdot 10^{-6}$	$3.142 \cdot 10^{-6}$	$6.366 \cdot 10^{-8}$	$9.492 \cdot 10^{-7}$	$9.492 \cdot 10^{-7}$	$1.054 \cdot 10^{-8}$		
$W^+W^-  o H t \bar t$	$2.475 \cdot 10^{-5}$	$2.475 \cdot 10^{-5}$	0	$1.11\cdot 10^{-5}$	$1.11 \cdot 10^{-5}$	0		
$\bar{b}t \to \bar{d}u$	0.0007437	0.0007437	$1.345 \cdot 10^{-8}$	$2.254 \cdot 10^{-5}$	$2.254 \cdot 10^{-5}$	0		
$b\bar{b}  o \mu^+\mu^-$	0.0001554	0.0001554	$6.436 \cdot 10^{-8}$	$1.162 \cdot 10^{-5}$	$1.162 \cdot 10^{-5}$	0		
$b\bar{b}  o  u_e \bar{ u}_e$	0.0003584	0.0003584	0	$2.574 \cdot 10^{-5}$	$2.574 \cdot 10^{-5}$	0		
$b\bar{b}  o b\bar{b}$	-0.08114	-0.08114	0	0.003053	0.003053	$3.275 \cdot 10^{-8}$		
$b\bar{b}  o d\bar{d}$	0.00248	0.00248	0	0.0001604	0.0001604	0		
$b\bar{b}  o t\bar{t}$	-0.005942	-0.005942	$-1.683 \cdot 10^{-8}$	0.003809	0.003809	0		
$b\bar{b} \to u\bar{u}$	0.0002195	0.0002195	0	$2.335 \cdot 10^{-5}$	$2.335 \cdot 10^{-5}$	$-4.283 \cdot 10^{-8}$		
$b\bar{t} \to e^- \bar{\nu}_e$	0.0008307	0.0008307	$1.204 \cdot 10^{-8}$	$2.518 \cdot 10^{-5}$	$2.518 \cdot 10^{-5}$	0		

## 2.49 cpQM

		interfer	ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$HH  o z \bar{b} b$	$1.727 \cdot 10^{-6}$	$8.496 \cdot 10^{-6}$	-3.919	$1.01 \cdot 10^{-6}$	$4.346 \cdot 10^{-5}$	-42.02		
$HH \to z t \bar{t}$	$3.656 \cdot 10^{-5}$	$3.408 \cdot 10^{-5}$	0.06794	$3.148 \cdot 10^{-5}$	$9.48 \cdot 10^{-5}$	-2.012		
$Hz  o b\bar{b}$	0.1953	0.1953	0	0.8498	0.8498	0		
$Hz \to t\bar{t}$	2.065	2.065	0	1.133	1.133	0		
$W^+W^-  o Hb\bar{b}$	$2.693 \cdot 10^{-5}$	$2.693 \cdot 10^{-5}$	0	$7.034 \cdot 10^{-7}$	$7.034 \cdot 10^{-7}$	$1.422 \cdot 10^{-8}$		
$W^+W^-  o H t ar t$	$-1.137 \cdot 10^{-6}$	$-1.137 \cdot 10^{-6}$	$8.792 \cdot 10^{-8}$	$5.587 \cdot 10^{-7}$	$5.587 \cdot 10^{-7}$	0		
$b\bar{b} \to \mu^+ \mu^-$	0.0001067	0.0001067	0	$3.159 \cdot 10^{-6}$	$3.159 \cdot 10^{-6}$	0		
$b\bar{b} \to \nu_e \bar{\nu}_e$	0.0006064	0.0006064	0	$2.177 \cdot 10^{-5}$	$2.177 \cdot 10^{-5}$	0		
$b\bar{b}  o b\bar{b}$	-0.001786	-0.001786	0	$2.193 \cdot 10^{-5}$	$2.193 \cdot 10^{-5}$	0		
$b\bar{b} \to d\bar{d}$	0.0004247	0.0004247	0	$1.398 \cdot 10^{-5}$	$1.398 \cdot 10^{-5}$	0		
$b\bar{b}  o t\bar{t}$	-0.0007467	-0.0007467	$-1.339 \cdot 10^{-8}$	$1.951 \cdot 10^{-6}$	$1.951 \cdot 10^{-6}$	0		
$b\bar{b} \to u\bar{u}$	0.0006251	0.0006251	$1.6 \cdot 10^{-8}$	$1.801 \cdot 10^{-5}$	$1.801 \cdot 10^{-5}$	$5.553 \cdot 10^{-8}$		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$-1.629 \cdot 10^{-5}$	$-1.629 \cdot 10^{-5}$	0	$1.031 \cdot 10^{-6}$	$1.031 \cdot 10^{-6}$	0		
$t\bar{t} \to \tau^+ \tau^-$	$4.982 \cdot 10^{-5}$	$4.982 \cdot 10^{-5}$	$-4.015 \cdot 10^{-8}$	$4.729 \cdot 10^{-6}$	$4.729 \cdot 10^{-6}$	$-4.229 \cdot 10^{-8}$		
$t\bar{t} \to c\bar{c}$	$6.115 \cdot 10^{-5}$	$6.115 \cdot 10^{-5}$	$-4.906 \cdot 10^{-8}$	$6.351 \cdot 10^{-6}$	$6.351 \cdot 10^{-6}$	$-4.724 \cdot 10^{-8}$		
$t\bar{t} \to d\bar{d}$	-0.001028	-0.001028	0	$3.596 \cdot 10^{-5}$	$3.596 \cdot 10^{-5}$	0		
$t\bar{t} \to s\bar{s}$	-0.0005893	-0.0005893	0	$2.104 \cdot 10^{-5}$	$2.104 \cdot 10^{-5}$	0		
$t\bar{t} \to t\bar{t}$	0.1459	0.1459	0	0.009008	0.009008	$-1.11 \cdot 10^{-8}$		

## 2.50 cpb

$W^+W^- \to H b \bar b$	$-3.677 \cdot 10^{-8}$	$-3.677 \cdot 10^{-8}$	0	$4.553 \cdot 10^{-7}$	$4.553 \cdot 10^{-7}$	0
$b\bar{b}  o \mu^+\mu^-$	$-1.906 \cdot 10^{-5}$	$-1.906 \cdot 10^{-5}$	$-1.049 \cdot 10^{-7}$	$2.9 \cdot 10^{-6}$	$2.9\cdot 10^{-6}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$-3.584 \cdot 10^{-6}$	$-3.584 \cdot 10^{-6}$	0	$7.001 \cdot 10^{-7}$	$7.001 \cdot 10^{-7}$	0
$b\bar{b}  o b\bar{b}$	0.01353	0.01353	0	0.0018	0.0018	0
$b\bar{b}  o d\bar{d}$	$-4.87 \cdot 10^{-5}$	$-4.87 \cdot 10^{-5}$	$-2.054 \cdot 10^{-8}$	$2.176 \cdot 10^{-5}$	$2.176 \cdot 10^{-5}$	0
$b\bar{b}  o t\bar{t}$	$3.185 \cdot 10^{-5}$	$3.185 \cdot 10^{-5}$	0	$1.9 \cdot 10^{-5}$	$1.9\cdot 10^{-5}$	0
$b\bar{b}  o u\bar{u}$	$2.273 \cdot 10^{-5}$	$2.273 \cdot 10^{-5}$	0	$1.623 \cdot 10^{-5}$	$1.623 \cdot 10^{-5}$	$6.162 \cdot 10^{-8}$

## 2.51 cpt

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to zt\bar{t}$	$-3.862 \cdot 10^{-5}$	$-4.136 \cdot 10^{-5}$	-0.07077	$4.9 \cdot 10^{-5}$	0.0001131	-1.308		
$Hz \to t\bar{t}$	-2.201	-2.201	0	1.298	1.298	0		
$W^+W^-  o H t \bar t$	$1.796 \cdot 10^{-6}$	$1.796 \cdot 10^{-6}$	0	$6.022 \cdot 10^{-7}$	$6.022 \cdot 10^{-7}$	0		
$b\bar{b}  o t\bar{t}$	-0.001803	-0.001803	0	$3.172 \cdot 10^{-5}$	$3.172 \cdot 10^{-5}$	0		
$t \bar t  o  u_\mu ar u_\mu$	$6.225 \cdot 10^{-5}$	$6.225 \cdot 10^{-5}$	$-3.213 \cdot 10^{-8}$	$7.587 \cdot 10^{-6}$	$7.587 \cdot 10^{-6}$	0		
$t\bar{t} \to \tau^+ \tau^-$	0.0001383	0.0001383	$-7.23 \cdot 10^{-8}$	$3.779 \cdot 10^{-6}$	$3.779 \cdot 10^{-6}$	$-2.646 \cdot 10^{-8}$		
$t\bar{t} \to c\bar{c}$	-0.0001293	-0.0001293	0	$2.251 \cdot 10^{-5}$	$2.251 \cdot 10^{-5}$	0		
$t\bar{t}  o d\bar{d}$	$1.789 \cdot 10^{-5}$	$1.789 \cdot 10^{-5}$	$-1.118 \cdot 10^{-7}$	$7.276 \cdot 10^{-6}$	$7.276 \cdot 10^{-6}$	0		
$t\bar{t} \to s\bar{s}$	$9.445 \cdot 10^{-5}$	$9.445 \cdot 10^{-5}$	$-3.176 \cdot 10^{-8}$	$3.242 \cdot 10^{-5}$	$3.242 \cdot 10^{-5}$	0		
$t\bar{t} \to t\bar{t}$	-0.226	-0.226	0	0.01043	0.01043	0		

# 2.52 cptb

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
$HH \to W^+ \bar{t} b$	$-2.092 \cdot 10^{-9}$	$4.963 \cdot 10^{-8}$	24.72	$1.006 \cdot 10^{-6}$	$1.597 \cdot 10^{-5}$	-14.88		
$HW^+ \to \gamma t \bar{b}$	$-5.286 \cdot 10^{-8}$	$-5.286 \cdot 10^{-8}$	0	$1.535 \cdot 10^{-7}$	$1.535 \cdot 10^{-7}$	$-6.515 \cdot 10^{-8}$		

$HW^-  o \bar{t}b$	-0.05336	-0.05336	0	0.4879	0.4879	0
$W^+W^-  o Hbar b$	$-7.695 \cdot 10^{-8}$	$-7.695 \cdot 10^{-8}$	0	$4.273 \cdot 10^{-7}$	$4.273 \cdot 10^{-7}$	0
$W^+W^-  o H t \bar t$	$2.805 \cdot 10^{-8}$	$2.805 \cdot 10^{-8}$	0	$9.604 \cdot 10^{-10}$	$9.604 \cdot 10^{-10}$	$-1.041 \cdot 10^{-8}$
$\bar{b}t \to \bar{d}u$	$-2.193 \cdot 10^{-6}$	$-2.193 \cdot 10^{-6}$	0	$9.443 \cdot 10^{-7}$	$9.443 \cdot 10^{-7}$	$1.059 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	-0.0002273	-0.0002273	0	0.0006334	0.0006334	$1.579 \cdot 10^{-8}$
$b\bar{t} \to e^- \bar{\nu}_e$	$-7.312 \cdot 10^{-7}$	$-7.312 \cdot 10^{-7}$	$1.368 \cdot 10^{-8}$	$1.816 \cdot 10^{-7}$	$1.816 \cdot 10^{-7}$	0

# 2.53 cptbI

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+ \bar t b$	$3.726 \cdot 10^{-8}$	$2.375 \cdot 10^{-8}$	0.3627	$8.455 \cdot 10^{-6}$	$5.928 \cdot 10^{-6}$	0.2989		
$HW^+  o \gamma t \bar{b}$	$6.737 \cdot 10^{-9}$	$6.737 \cdot 10^{-9}$	0	$1.244 \cdot 10^{-7}$	$1.244 \cdot 10^{-7}$	0		
$HW^- \to \bar{t}b$	$-1.161 \cdot 10^{-5}$	$-1.161 \cdot 10^{-5}$	0	0.0548	0.0548	0		
$W^+W^- \to H b \bar b$	$4.626 \cdot 10^{-8}$	$4.626 \cdot 10^{-8}$	$2.162 \cdot 10^{-8}$	$2.151 \cdot 10^{-7}$	$2.151 \cdot 10^{-7}$	0		
$W^+W^-  o H t \bar t$	$1.223 \cdot 10^{-9}$	$1.223 \cdot 10^{-9}$	0	$1.399 \cdot 10^{-9}$	$1.399 \cdot 10^{-9}$	0		
$\bar{b}t \to \bar{d}u$	$7.048 \cdot 10^{-21}$	$1.096 \cdot 10^{-21}$	0.8445	$1.708 \cdot 10^{-5}$	$1.708 \cdot 10^{-5}$	0		
$b\bar{b}  o t\bar{t}$	$-2.597 \cdot 10^{-21}$	$-1.357 \cdot 10^{-21}$	0.4773	0.0006147	0.0006147	0		
$b\bar{t} \to e^- \bar{\nu}_e$	$-6.137 \cdot 10^{-22}$	$5.845 \cdot 10^{-23}$	1.095	$1.556 \cdot 10^{-6}$	$1.556 \cdot 10^{-6}$	0		

## 2.54 ctG

		in	iterference		square			
	mod1	$\mathtt{mod2}  1-\mathtt{mod2}/\mathtt{mod1}$		mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to t\bar{t}$	0.06842	0.06842	0	0.04083	0.04083	0		
$gg \to t\bar{t}$	0.7353	0.7353	0	0.1235	0.1235	0		
$t\bar{t} \to c\bar{c}$	0.1977	0.1977	0	0.01717	0.01717	0		
$t\bar{t} \to d\bar{d}$	0.1977	0.1977	0	0.02947	0.02947	0		
$t\bar{t} \to s\bar{s}$	0.1977	0.1977	0	0.04437	0.04437	0		

 $t\bar{t} \to t\bar{t}$  0.2613 0.2613 0 0.9642 0.9642 0

# 2.55 ctGI

		interfere		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	$-2.368 \cdot 10^{-17}$	$-3.645 \cdot 10^{-17}$	-0.5393	0.03138	0.03138	0	
$gg \to t \bar t$	$-2.792 \cdot 10^{-18}$	$1.577 \cdot 10^{-17}$	6.648	0.1007	0.1007	0	
$t\bar{t} \to c\bar{c}$	$3.676 \cdot 10^{-25}$	$7.353 \cdot 10^{-25}$	-1	0.007723	0.007723	0	
$t\bar{t} \to d\bar{d}$	$3.676 \cdot 10^{-25}$	$3.309 \cdot 10^{-24}$	-8	0.02002	0.02002	0	
$t\bar{t} \to s\bar{s}$	$5.882 \cdot 10^{-24}$	$5.882 \cdot 10^{-24}$	0	0.03492	0.03492	0	
$t\bar{t} \to t\bar{t}$	$-3.818 \cdot 10^{-17}$	$-1.905 \cdot 10^{-17}$	0.501	0.896	0.896	0	

## 2.56 ctQqu1

		i	nterference		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	$3.12 \cdot 10^{-6}$	
$t\bar{t} \to c\bar{c}$	-0.4725	0	1	0.5004	0.5004	$3.097 \cdot 10^{-6}$	

# $2.57 \quad ctQqu1I$

		terference		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	$3.12 \cdot 10^{-6}$
$t\bar{t} \to c\bar{c}$	$8.269 \cdot 10^{-21}$	0	1	0.5004	0.5004	$3.097 \cdot 10^{-6}$

# 2.58 ctQqu8

		i	nterference		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	$2.934 \cdot 10^{-6}$		
$t\bar{t} \to c\bar{c}$	$2.1 \cdot 10^{-8}$	0	1	0.1112	0.1112	$2.878 \cdot 10^{-6}$		

# $2.59 \quad ctQqu8I$

		ir	nterference		square			
	$\mathtt{mod1}  \mathtt{mod2}  1-\mathtt{mod2}/\mathtt{mod1}$		mod1	mod2	1 - mod2/mod1			
$\bar{b}t \to \bar{d}u$	0	0	0	0.05556	0.05556	$2.916 \cdot 10^{-6}$		
$t\bar{t} \to c\bar{c}$	$1.1 \cdot 10^{-19}$	0	1	0.1112	0.1112	$2.878 \cdot 10^{-6}$		

# 2.60 ctW

		interfer		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to W^+ \bar{t} b$	$1.036 \cdot 10^{-5}$	$1.036 \cdot 10^{-5}$	0	$1.216 \cdot 10^{-5}$	$1.216 \cdot 10^{-5}$	0
$HH \to z t \bar{t}$	$1.173 \cdot 10^{-12}$	0	1	$1.727 \cdot 10^{-17}$	0	1
$HW^+ \to \gamma t \bar{b}$	$-5.754 \cdot 10^{-6}$	$-7.157 \cdot 10^{-6}$	-0.2438	$1.052 \cdot 10^{-5}$	$3.364 \cdot 10^{-5}$	-2.199
$HW^-  o \bar{t}b$	-0.2635	-0.2635	$3.796 \cdot 10^{-8}$	2.275	2.275	0
$H\gamma \to t\bar{t}$	-0.7768	-0.7768	$5.922 \cdot 10^{-7}$	12.61	12.61	$1.189 \cdot 10^{-6}$
$Hz \to t\bar{t}$	$2.552 \cdot 10^{-8}$	0	1	$1.669 \cdot 10^{-12}$	0	1
$W^+W^-  o Hb\bar{b}$	$1.078 \cdot 10^{-6}$	$1.078 \cdot 10^{-6}$	0	$3.197 \cdot 10^{-6}$	$3.197 \cdot 10^{-6}$	0
$W^+W^-  o H t ar t$	$2.206 \cdot 10^{-6}$	$3.86 \cdot 10^{-5}$	-16.5	$3.044 \cdot 10^{-5}$	0.002149	-69.61
$\bar{b}t \to \bar{d}u$	0.01423	0.01423	0	0.007323	0.007323	$1.366 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	0.02282	0.02282	$-1.753 \cdot 10^{-7}$	0.02929	0.02929	$1.707 \cdot 10^{-7}$
$b\bar{t} \to e^- \bar{\nu}_e$	0.004947	0.004947	$2.021 \cdot 10^{-8}$	0.001994	0.001994	0

$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$2.87 \cdot 10^{-10}$	0	1	$1.038 \cdot 10^{-15}$	0	1
$t\bar{t} \rightarrow \tau^+ \tau^-$	0.005969	0.005969	$5.194 \cdot 10^{-7}$	0.0184	0.0184	$1.141 \cdot 10^{-6}$
$t\bar{t} \to c\bar{c}$	0.004844	0.004844	$4.129 \cdot 10^{-7}$	0.01326	0.01326	$9.802 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	-0.0001442	-0.0001442	$-3.746 \cdot 10^{-6}$	0.001482	0.001482	$4.049 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	0.005199	0.005199	$-9.617 \cdot 10^{-8}$	0.005055	0.005055	$3.759 \cdot 10^{-7}$
$t\bar{t} \to t\bar{t}$	-0.3317	-0.3317	$4.823 \cdot 10^{-7}$	0.5561	0.5561	$9.71 \cdot 10^{-7}$

## 2.61 ctWI

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+ \bar t b$	$-7.513 \cdot 10^{-7}$	$-7.513 \cdot 10^{-7}$	0	$2.108 \cdot 10^{-5}$	$2.108 \cdot 10^{-5}$	0		
$HH \to z t \bar{t}$	$9.01 \cdot 10^{-13}$	0	1	$1.293 \cdot 10^{-17}$	0	1		
$HW^+  o \gamma t \bar{b}$	$7.083 \cdot 10^{-6}$	$4.729 \cdot 10^{-6}$	0.3323	$1.572 \cdot 10^{-5}$	$1.574 \cdot 10^{-5}$	-0.0008883		
$HW^- \to \bar{t}b$	-0.003076	-0.003076	0	0.1605	0.1605	0		
$H\gamma \to t\bar{t}$	$-5.529 \cdot 10^{-18}$	$-1.897 \cdot 10^{-17}$	-2.431	13.96	13.96	$1.218 \cdot 10^{-6}$		
$Hz \to t\bar{t}$	$-2.38 \cdot 10^{-10}$	0	1	$1.497 \cdot 10^{-12}$	0	1		
$W^+W^-  o Hbar{b}$	$2.29 \cdot 10^{-5}$	$2.29 \cdot 10^{-5}$	0	$3.197 \cdot 10^{-6}$	$3.197 \cdot 10^{-6}$	0		
$W^+W^-  o H t \bar t$	$-5.084 \cdot 10^{-6}$	$-2.379 \cdot 10^{-5}$	-3.678	$2.342 \cdot 10^{-5}$	0.002419	-102.3		
$\bar{b}t \to \bar{d}u$	$1.766 \cdot 10^{-17}$	$1.362 \cdot 10^{-17}$	0.2283	0.01211	0.01211	0		
$b\bar{b} \to t\bar{t}$	$-2.611 \cdot 10^{-19}$	$-8.132 \cdot 10^{-18}$	-30.15	0.02321	0.02321	$8.619 \cdot 10^{-8}$		
$b\bar{t} \to e^- \bar{\nu}_e$	$-3.599 \cdot 10^{-19}$	$4.34 \cdot 10^{-18}$	13.06	0.004019	0.004019	0		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$7.64 \cdot 10^{-25}$	0	1	$1.173 \cdot 10^{-15}$	0	1		
$t\bar{t} \to \tau^+ \tau^-$	$-1.382 \cdot 10^{-20}$	$-2.176 \cdot 10^{-19}$	-14.74	0.009571	0.009571	$1.149 \cdot 10^{-6}$		
$t\bar{t} \to c\bar{c}$	$1.156 \cdot 10^{-10}$	$1.156 \cdot 10^{-10}$	$6.057 \cdot 10^{-7}$	0.0131	0.0131	$9.927 \cdot 10^{-7}$		
$t\bar{t} \to d\bar{d}$	$1.302 \cdot 10^{-15}$	$1.306 \cdot 10^{-15}$	-0.003349	0.004795	0.004795	$3.754 \cdot 10^{-7}$		
$t\bar{t} \to s\bar{s}$	$5.662 \cdot 10^{-13}$	$5.662 \cdot 10^{-13}$	$7.807 \cdot 10^{-6}$	0.003448	0.003448	$4.06 \cdot 10^{-7}$		
$t\bar{t} \to t\bar{t}$	$2.88 \cdot 10^{-17}$	$6.418 \cdot 10^{-17}$	-1.229	1.211	1.211	$9.908 \cdot 10^{-7}$		

# 2.62 ctZ

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z t \bar{t}$	$7.838 \cdot 10^{-7}$	$7.838 \cdot 10^{-7}$	$5.742 \cdot 10^{-7}$	$4.568 \cdot 10^{-5}$	$4.568 \cdot 10^{-5}$	$1.095 \cdot 10^{-6}$		
$HW^+ \to \gamma t \bar{b}$	$3.532 \cdot 10^{-6}$	$3.532 \cdot 10^{-6}$	$5.379 \cdot 10^{-7}$	$1.754 \cdot 10^{-5}$	$1.754 \cdot 10^{-5}$	$1.083 \cdot 10^{-6}$		
$H\gamma \to t\bar{t}$	0.6024	0.6024	$5.478 \cdot 10^{-7}$	10.7	10.7	$1.122 \cdot 10^{-6}$		
Hz  o t ar t	-0.04646	-0.04646	$5.812 \cdot 10^{-7}$	3.393	3.393	$1.091 \cdot 10^{-6}$		
$W^+W^-  o H t \bar t$	$-1.286 \cdot 10^{-7}$	$-1.286 \cdot 10^{-7}$	$5.443 \cdot 10^{-7}$	$6.193 \cdot 10^{-8}$	$6.193 \cdot 10^{-8}$	$1.098 \cdot 10^{-6}$		
$b\bar{b}  o t\bar{t}$	0.005282	0.005282	$5.49 \cdot 10^{-7}$	0.003689	0.003689	$1.084 \cdot 10^{-6}$		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.0005765	0.0005765	$6.071 \cdot 10^{-7}$	0.003288	0.003288	$1.095 \cdot 10^{-6}$		
$t\bar{t} \to \tau^+ \tau^-$	-0.007504	-0.007504	$5.331 \cdot 10^{-7}$	0.0111	0.0111	$1.171 \cdot 10^{-6}$		
$t\bar{t} \to c\bar{c}$	-0.003807	-0.003807	$5.516 \cdot 10^{-7}$	0.01282	0.01282	$1.092 \cdot 10^{-6}$		
$t\bar{t} \to d\bar{d}$	0.0006255	0.0006255	$6.235 \cdot 10^{-7}$	0.005062	0.005062	$1.106 \cdot 10^{-6}$		
$t\bar{t} \to s\bar{s}$	-0.0003705	-0.0003705	$4.859 \cdot 10^{-7}$	0.003952	0.003952	$1.113 \cdot 10^{-6}$		
$t\bar{t} \to t\bar{t}$	1.027	1.027	$4.87 \cdot 10^{-7}$	0.861	0.861	$1.092 \cdot 10^{-6}$		

# 2.63 ctZI

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
HH  o zt ar t	$-3.559 \cdot 10^{-6}$	$-3.559 \cdot 10^{-6}$	$5.9 \cdot 10^{-7}$	$3.773 \cdot 10^{-5}$	$3.773 \cdot 10^{-5}$	$1.087 \cdot 10^{-6}$	
$HW^+  o \gamma t \bar{b}$	$9.943 \cdot 10^{-6}$	$9.943 \cdot 10^{-6}$	$5.632 \cdot 10^{-7}$	$1.644 \cdot 10^{-5}$	$1.644 \cdot 10^{-5}$	$1.095 \cdot 10^{-6}$	
$H\gamma \to t\bar{t}$	$-1.084 \cdot 10^{-18}$	$3.253 \cdot 10^{-18}$	4	7.534	7.534	$1.115 \cdot 10^{-6}$	
$Hz \to t\bar{t}$	-0.0004817	-0.0004817	$5.398 \cdot 10^{-7}$	2.997	2.997	$1.101 \cdot 10^{-6}$	
$W^+W^-  o H t \bar t$	$-3.07 \cdot 10^{-7}$	$-3.07 \cdot 10^{-7}$	$5.538 \cdot 10^{-7}$	$3.47 \cdot 10^{-8}$	$3.47 \cdot 10^{-8}$	$1.095 \cdot 10^{-6}$	
$b\bar{b} \to t\bar{t}$	$2.042 \cdot 10^{-18}$	$3.471 \cdot 10^{-18}$	-0.6998	0.003673	0.003673	$1.089 \cdot 10^{-6}$	
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$1.823 \cdot 10^{-18}$	$4.711 \cdot 10^{-19}$	0.7415	0.001605	0.001605	$1.121 \cdot 10^{-6}$	
$t\bar{t} \to \tau^+ \tau^-$	$-9.496 \cdot 10^{-19}$	$-9.473 \cdot 10^{-19}$	0.002425	0.002356	0.002356	$1.103 \cdot 10^{-6}$	

$t\bar{t} \to c\bar{c}$	$-1.012 \cdot 10^{-10}  -1.012 \cdot 10^{-10}$	$5.931 \cdot 10^{-7}$	0.003044	0.003044	$1.117 \cdot 10^{-6}$
$t\bar{t} \to d\bar{d}$	$-1.262 \cdot 10^{-15}  -1.262 \cdot 10^{-15}$	$1.585 \cdot 10^{-7}$	0.002344	0.002344	$1.109 \cdot 10^{-6}$
$t\bar{t} \to s\bar{s}$	$-4.955 \cdot 10^{-13}  -4.955 \cdot 10^{-13}$	$-1.514 \cdot 10^{-6}$	0.004089	0.004089	$1.101 \cdot 10^{-6}$
$t\bar{t}  o t\bar{t}$	$-3.838 \cdot 10^{-16}  -7.088 \cdot 10^{-17}$	0.8153	0.5424	0.5424	$1.106 \cdot 10^{-6}$

### 2.64 ctb1

#### 2.65 ctb8

### 2.66 ctd1

interference square 1 - mod2/mod11 - mod2/mod1mod1mod2 mod1mod2  $t\bar{t} \to d\bar{d}$ -0.0004884 $-2.047 \cdot 10^{-8}$ -0.00048840.0013010.001301 $t\bar{t} \to s\bar{s}$ -0.03534-0.035340.6118 0.6118

### 2.67 ctd8

 $t\bar{t} \to d\bar{d}$  0.02034 0.02034 0 0.000289 0.000289 0 0  $t\bar{t} \to s\bar{s}$  0.4223 0.4223 0 0 0.136 0.136 0

#### 2.68 cte3

#### 2.69 ctl2

#### 2.70 ctl3

### 2.71 ctlS1

#### 2.72 ctlS3

#### 2.73 ctlSI1

#### 2.74 ctlSI3

#### 2.75 ctlT1

#### 2.76 ctlT3

 $t\bar{t} \to \tau^+ \tau^-$  0.01232 0.01232 0 2.216 2.216

### 2.77 ctlTI1

#### 2.78 ctlTI3

### 2.79 ctp

interference square 1 - mod2/mod11 - mod2/mod1mod1 mod2 mod1 mod2  $HH \rightarrow Ht\bar{t}$  $4.158 \cdot 10^{-5}$  $-8.69 \cdot 10^{-6}$ 1.209  $2.249 \cdot 10^{-5}$  $1.528 \cdot 10^{-6}$ 0.932 $HH \to W^+ \bar{t} b$  $1.574 \cdot 10^{-7}$  $1.574 \cdot 10^{-7}$  $5.876 \cdot 10^{-7}$  $5.876 \cdot 10^{-7}$ 0 0  $HH \rightarrow zt\bar{t}$  $-5.869 \cdot 10^{-6}$  $-5.869 \cdot 10^{-6}$  $-1.704 \cdot 10^{-8}$  $4.119 \cdot 10^{-6}$  $4.119 \cdot 10^{-6}$ 0  $HW^+ \to \gamma t \bar{b}$  $-1.133 \cdot 10^{-7}$   $-1.133 \cdot 10^{-7}$ 0  $2.108 \cdot 10^{-8}$  $2.108 \cdot 10^{-8}$ 0  $HW^- \to \bar{t}b$  $2.455 \cdot 10^{-8}$ -0.3348-0.33480 0.040730.04073 $-1.769 \cdot 10^{-8}$  $-5.766 \cdot 10^{-8}$  $H\gamma \to t\bar{t}$ -0.05652-0.056520.0017340.001734 $Hz \to t\bar{t}$  $8.539 \cdot 10^{-7}$ -0.000363-0.0003630.06850.06850  $8.221 \cdot 10^{-6}$  $W^+W^- \to Hb\bar{b}$  $8.221 \cdot 10^{-6}$ 0  $1.427 \cdot 10^{-7}$   $1.427 \cdot 10^{-7}$ 0  $W^+W^- \to H t \bar{t}$  $-4.938 \cdot 10^{-8}$  $2.025 \cdot 10^{-8}$  $4.337 \cdot 10^{-8}$  $-4.938 \cdot 10^{-8}$  $4.337 \cdot 10^{-8}$ 0  $b\bar{b} \to t\bar{t}$  $-1.313 \cdot 10^{-5}$   $-1.313 \cdot 10^{-5}$ 0  $6.089 \cdot 10^{-7}$  $6.089 \cdot 10^{-7}$ 0

$t\bar{t} \to \tau^+ \tau^-$	$-1 \cdot 10^{-6}$	$-1 \cdot 10^{-6}$	0	$3.101 \cdot 10^{-8}  3.101 \cdot 10^{-8}$	0
$t \bar t  o t \bar t$	0.1969	0.1969	0	$0.009361 \qquad 0.009361$	0

# 2.80 ctpI

		interfer		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to H t \bar t$	$7.061 \cdot 10^{-6}$	$1.165 \cdot 10^{-6}$	0.835	$5.556 \cdot 10^{-5}$	$4.833 \cdot 10^{-6}$	0.913
$HH \to W^+ \bar{t} b$	$-1.003 \cdot 10^{-7}$	$-1.003 \cdot 10^{-7}$	0	$2.363 \cdot 10^{-6}$	$2.363 \cdot 10^{-6}$	0
$HH \to z t \bar{t}$	$-1.037 \cdot 10^{-7}$	$-1.037 \cdot 10^{-7}$	0	$3.209 \cdot 10^{-6}$	$3.209 \cdot 10^{-6}$	0
$HW^+ \to \gamma t \bar{b}$	$-9.555 \cdot 10^{-8}$	$-9.555 \cdot 10^{-8}$	$-1.047 \cdot 10^{-8}$	$6.41 \cdot 10^{-8}$	$6.41 \cdot 10^{-8}$	0
$HW^-  o \bar{t}b$	-0.004445	-0.004445	0	0.04336	0.04336	0
$H\gamma \to t\bar{t}$	$-8.66 \cdot 10^{-19}$	$-7.14 \cdot 10^{-21}$	0.9918	0.002182	0.002182	0
$Hz \to t\bar{t}$	0.0001586	0.0001586	$6.304 \cdot 10^{-8}$	0.06834	0.06834	0
$W^+W^-  o Hb\bar{b}$	$1.67 \cdot 10^{-6}$	$1.67 \cdot 10^{-6}$	0	$9.493 \cdot 10^{-9}$	$9.493 \cdot 10^{-9}$	$1.053 \cdot 10^{-8}$
$W^+W^-  o H t ar t$	$2.453 \cdot 10^{-11}$	$2.453 \cdot 10^{-11}$	$2.516 \cdot 10^{-5}$	$1.28 \cdot 10^{-7}$	$1.28\cdot10^{-7}$	0
$b\bar{b}  o t\bar{t}$	$-4.61 \cdot 10^{-22}$	$1.474 \cdot 10^{-22}$	1.32	$6.906 \cdot 10^{-7}$	$6.906 \cdot 10^{-7}$	0
$t\bar{t} \to \tau^+ \tau^-$	$9.492 \cdot 10^{-24}$	$-4.788 \cdot 10^{-24}$	1.504	$3.49 \cdot 10^{-8}$	$3.49 \cdot 10^{-8}$	0
$t\bar{t} \to t\bar{t}$	$6.42 \cdot 10^{-18}$	$4.804 \cdot 10^{-18}$	0.2517	0.004965	0.004965	0

# 2.81 ctq1

		inter	rference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$t\bar{t} \to c\bar{c}$	0.02913	0.02913	0	0.8096	0.8096	0		
$t\bar{t} \to d\bar{d}$	0.02267	0.02267	$-4.41 \cdot 10^{-8}$	0.9871	0.9871	0		
$t\bar{t} \to s\bar{s}$	-0.004266	-0.004266	0	0.06121	0.06121	0		

### 2.82 ctq8

		in	nterference	square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$t\bar{t} \to c\bar{c}$	0.265	0.265	0	0.08286	0.08286	0	
$t\bar{t} \to d\bar{d}$	0.146	0.146	0	0.04271	0.04271	0	
$t\bar{t} \to s\bar{s}$	0.04671	0.04671	0	0.00919	0.00919	0	

### 2.83 ctt1

### 2.84 ctu1

### 2.85 ctu8

### 2.86 sm

			interference	square
	mod1	mod2	$1-{\tt mod2/mod1}$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
$HH \to HH$	0	0	0	0.1402   0.1402   0
HH  o HHH	0	0	0	$1.006 \cdot 10^{-6}$ $1.006 \cdot 10^{-6}$ 0
$HH \to H \tau^+ \tau^-$	0	0	0	$3.395 \cdot 10^{-11}  3.395 \cdot 10^{-11} \qquad 0$
$HH  o Hbar{b}$	0	0	0	$1.198 \cdot 10^{-8}$ $1.198 \cdot 10^{-8}$ 0
$HH \to H t \bar t$	0	0	0	$3.272 \cdot 10^{-5}$ $3.272 \cdot 10^{-5}$ 0
$HH \to Hzz$	0	0	0	$7.799 \cdot 10^{-6}$ $7.799 \cdot 10^{-6}$ 0
$HH \to W^+W^-$	0	0	0	$0.09331 \qquad 0.09331 \qquad 0$
$HH  o W^+W^-\gamma$	0	0	0	$1.832 \cdot 10^{-7}$ $1.832 \cdot 10^{-7}$ $-5.46 \cdot 10^{-8}$
$HH \to W^+ \bar{t} b$	0	0	0	$4.073 \cdot 10^{-6}  4.073 \cdot 10^{-6}$
$HH \to W^+ e^- \bar{\nu}_e$	0	0	0	$6.166 \cdot 10^{-8}$ $6.166 \cdot 10^{-8}$ $1.622 \cdot 10^{-8}$
$HH \to W^- u \bar{d}$	0	0	0	$2.011 \cdot 10^{-7}$ $2.011 \cdot 10^{-7}$ $4.973 \cdot 10^{-8}$
$HH  o z \bar{b} b$	0	0	0	$3.108 \cdot 10^{-7}$ $3.108 \cdot 10^{-7}$ $3.217 \cdot 10^{-8}$
$HH \to z \nu_e \bar{\nu}_e$	0	0	0	$1.694 \cdot 10^{-7}$ $1.694 \cdot 10^{-7}$ 0
$HH \to zc\bar{c}$	0	0	0	$3.898 \cdot 10^{-7}$ $3.898 \cdot 10^{-7}$ 0
$HH \to z d\bar{d}$	0	0	0	$8.43 \cdot 10^{-7}$ $8.43 \cdot 10^{-7}$ $1.186 \cdot 10^{-8}$
$HH \rightarrow ze^+e^-$	0	0	0	$9.821 \cdot 10^{-8}$ $9.821 \cdot 10^{-8}$ 0
$HH \to z t \bar{t}$	0	0	0	$3.23 \cdot 10^{-5}$ $3.23 \cdot 10^{-5}$ 0
$HH \rightarrow zz$	0	0	0	$0.07635 \qquad 0.07635 \qquad 0$
$HW^+  o \gamma t \bar{b}$	0	0	0	$1.508 \cdot 10^{-6}$ $1.508 \cdot 10^{-6}$ 0
$HW^+ \to \gamma u \bar{d}$	0	0	0	$1.175 \cdot 10^{-8}$ $1.175 \cdot 10^{-8}$ 0
$HW^+  o u \bar d$	0	0	0	$0.007805 \qquad 0.007805 \qquad 1.281 \cdot 10^{-8}$
$HW^- \to \bar{t}b$	0	0	0	0.208 $0.208$ $0$
$HW^- \to \gamma e^- \bar{\nu}_e$	0	0	0	$1.857 \cdot 10^{-9}$ $1.857 \cdot 10^{-9}$ 0
$HW^-  o \mu^- \bar{\nu}_{\mu}$	0	0	0	$0.007413 \qquad 0.007413 \qquad 1.349 \cdot 10^{-8}$
$H\gamma  o bar{b}$	0	0	0	$0.0004266 \qquad 0.0004266 \qquad -2.344 \cdot 10^{-8}$
$H\gamma \to t\bar{t}$	0	0	0	2.544 $2.544$ 0
$Hz \to \mu^+\mu^-$	0	0	0	$0.003303 \qquad 0.003303 \qquad 0$

$Hz  o  u_{ au} \bar{ u}_{ au}$	0	0	0	0.006576	0.006576	0
$Hz  o b\bar{b}$	0	0	0	0.01304	0.01304	0
$Hz \to s\bar{s}$	0	0	0	0.01215	0.01215	0
$Hz \to t\bar{t}$	0	0	0	3.883	3.883	0
$Hz \to u\bar{u}$	0	0	0	0.011	0.011	0
$W^+W^-  o Hb\bar{b}$	0	0	0	$3.201 \cdot 10^{-6}$	$3.201 \cdot 10^{-6}$	0
$W^+W^- \to H c \bar c$	0	0	0	$3.711 \cdot 10^{-7}$	$3.711 \cdot 10^{-7}$	$2.695 \cdot 10^{-8}$
$W^+W^-  o H d \bar d$	0	0	0	$9.35 \cdot 10^{-7}$	$9.35 \cdot 10^{-7}$	$1.069 \cdot 10^{-8}$
$W^+W^-  o H t \bar t$	0	0	0	0.0002109	0.0002109	0
$W^+W^-  o W^+W^-$	0	0	0	17.94	17.94	0
$W^+W^- \to \gamma\gamma$	0	0	0	0.2446	0.2446	$-4.089 \cdot 10^{-8}$
$W^+W^- \to \gamma\gamma\gamma$	0	0	0	$9.386 \cdot 10^{-7}$	$9.386 \cdot 10^{-7}$	$-4.262 \cdot 10^{-8}$
$\bar{b}t \to \bar{d}u$	0	0	0	0.01649	0.01649	0
$\gamma W^+ \to z W^+$	0	0	0	0.1316	0.1316	0
$\mu^+\mu^- \to \tau^+\tau^-$	0	0	0	0.01502	0.01502	0
$ u_{ au}\bar{ u}_{ au}  ightarrow  u_{ au}\bar{ u}_{ au}$	0	0	0	0.02046	0.02046	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	0	0	0	0.01912	0.01912	0
$b\bar{b} \to \gamma \gamma$	0	0	0	$8.06 \cdot 10^{-5}$	$8.06 \cdot 10^{-5}$	$-3.722 \cdot 10^{-8}$
$b\bar{b} \to \mu^+\mu^-$	0	0	0	0.001867	0.001867	0
$b\bar{b}  o  u_e \bar{ u}_e$	0	0	0	0.0005568	0.0005568	0
$b\bar{b}  o b\bar{b}$	0	0	0	17.65	17.65	0
$b\bar{b}  o d\bar{d}$	0	0	0	0.6976	0.6976	0
$b\bar{b} \to t\bar{t}$	0	0	0	1.208	1.208	0
$b\bar{b} \to u\bar{u}$	0	0	0	0.964	0.964	0
$b\bar{t} \to e^- \bar{\nu}_e$	0	0	0	0.001914	0.001914	$5.225 \cdot 10^{-8}$
$c\bar{c} \to \mu^+ \mu^-$	0	0	0	0.0006914	0.0006914	$-2.893 \cdot 10^{-8}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	0	0	0	0.008224	0.008224	$1.216 \cdot 10^{-8}$
$d\bar{d} \to c\bar{c}$	0	0	0	0.5901	0.5901	0
$d\bar{d} \rightarrow e^+e^-$	0	0	0	0.0003563	0.0003563	0

$e^+\nu_\mu \to e^+\nu_\mu$	0	0	0	0.02028	0.02028	$-4.931 \cdot 10^{-8}$
$e^+\nu_e^-  o \mu^+\nu_\mu^-$	0	0	0	0.03106	0.03106	$3.219 \cdot 10^{-8}$
$e^+\nu_e \rightarrow e^+\nu_e$	0	0	0	0.01399	0.01399	0
$e^+\tau^- \to e^+\tau^-$	0	0	0	0.0255	0.0255	$-3.921 \cdot 10^{-8}$
$e^+e^- \rightarrow \mu^+\mu^-$	0	0	0	0.0196	0.0196	0
$e^+e^- \rightarrow e^+e^-$	0	0	0	0.03371	0.03371	$-2.966 \cdot 10^{-8}$
gg  o gg	0	0	0	94.52	94.52	0
gg  o ggg	0	0	0	4.503	4.503	0
$gg  o t\bar{t}$	0	0	0	0.7574	0.7574	0
$gg \to u\bar{u}$	0	0	0	0.4279	0.4279	0
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	0	0	0	0.001354	0.001354	0
$s\bar{s} \to s\bar{s}$	0	0	0	2.028	2.028	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0	0	0	0.001969	0.001969	0
$t\bar{t} \to \tau^+ \tau^-$	0	0	0	0.003847	0.003847	0
$t\bar{t} \to c\bar{c}$	0	0	0	0.5957	0.5957	0
$t\bar{t}  o d\bar{d}$	0	0	0	0.5901	0.5901	0
$t\bar{t} \to s\bar{s}$	0	0	0	0.7717	0.7717	0
$t\bar{t} \to t\bar{t}$	0	0	0	1.564	1.564	0
$u\bar{d} \to \mu^+ \nu_\mu$	0	0	0	0.001619	0.001619	0
$u\bar{d} \to c\bar{s}$	0	0	0	0.00282	0.00282	0
$u\bar{d} \to u\bar{d}$	0	0	0	10.49	10.49	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0	0	0	0.0008608	0.0008608	$1.162 \cdot 10^{-8}$
$u\bar{u} \to u\bar{u}$	0	0	0	3.784	3.784	0
$zz \to W^+W^-$	0	0	0	61.18	61.18	$1.635 \cdot 10^{-8}$
$zz \to zz$	0	0	0	0.08119	0.08119	0