## 1 By process

### $\textbf{1.1} \quad HH \rightarrow HH$

		in	terference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\mathtt{mod1}  \mathtt{mod2}  1-\mathtt{mod2}/\mathtt{mod1}$			
сН	-1.605	-1.605	0	2.999   2.999   0			
cHDD	-0.1005	-0.1005	0	$0.01154  0.01154 \qquad \qquad 0$			
sm	0	0	0	$0.05621  0.05621 \qquad 0$			

#### $\textbf{1.2} \quad HH \rightarrow HHH$

		interf	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$6.991 \cdot 10^{-6}$	$6.991 \cdot 10^{-6}$	0	$9.499 \cdot 10^{-6}$	$9.499 \cdot 10^{-6}$	0		
cHDD	$3.227 \cdot 10^{-7}$	$3.227 \cdot 10^{-7}$	0	$5.271 \cdot 10^{-7}$	$5.271 \cdot 10^{-7}$	0		
sm	0	0	0	$2.685 \cdot 10^{-6}$	$2.685 \cdot 10^{-6}$	0		

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$-3.381 \cdot 10^{-8}$	$-3.381 \cdot 10^{-8}$	0	$6.515 \cdot 10^{-8}$	$6.515 \cdot 10^{-8}$	0	
cHDD	$1.792 \cdot 10^{-11}$	$1.792 \cdot 10^{-11}$	0	$7.877 \cdot 10^{-13}$	$7.877 \cdot 10^{-13}$	0	
$\mathtt{ceHIm}$	$-1.052 \cdot 10^{-13}$	$-1.052 \cdot 10^{-13}$	0	$2.303 \cdot 10^{-11}$	$2.303 \cdot 10^{-11}$	0	
ceHRe	$-1.826 \cdot 10^{-10}$	$-1.826 \cdot 10^{-10}$	0	$8.169 \cdot 10^{-11}$	$8.169 \cdot 10^{-11}$	0	
$\mathtt{sm}$	0	0	0	$8.216 \cdot 10^{-9}$	$8.216 \cdot 10^{-9}$	0	

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cН	$-2.835 \cdot 10^{-9}$	$-2.835 \cdot 10^{-9}$	0	$7.585 \cdot 10^{-9}$	$7.585 \cdot 10^{-9}$	0
cHDD	$-2.742 \cdot 10^{-10}$	$-2.742 \cdot 10^{-10}$	0	$1.488 \cdot 10^{-10}$	$1.488 \cdot 10^{-10}$	0
$\mathtt{cbHIm}$	$-8.884 \cdot 10^{-11}$	$-8.884 \cdot 10^{-11}$	0	$3.073 \cdot 10^{-6}$	$3.073 \cdot 10^{-6}$	0
cbHRe	$-1.782 \cdot 10^{-7}$	$-1.782 \cdot 10^{-7}$	0	$4.872 \cdot 10^{-6}$	$4.872 \cdot 10^{-6}$	0
sm	0	0	0	$5.993 \cdot 10^{-10}$	$5.993 \cdot 10^{-10}$	0

### **1.5** $HH \rightarrow Hs\bar{s}$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$-3.156 \cdot 10^{-12}$	$-3.156 \cdot 10^{-12}$	0	$7.768 \cdot 10^{-12}$	$7.768 \cdot 10^{-12}$	0
cHDD	$-3.293 \cdot 10^{-12}$	$-3.293 \cdot 10^{-12}$	0	$5.284 \cdot 10^{-13}$	$5.284 \cdot 10^{-13}$	0
$\mathtt{cdHIm}$	$9.625 \cdot 10^{-18}$	$9.625 \cdot 10^{-18}$	0	$7.832 \cdot 10^{-13}$	$7.832 \cdot 10^{-13}$	0
cdHRe	$-2.379 \cdot 10^{-12}$	$-2.379 \cdot 10^{-12}$	0	$1.742 \cdot 10^{-12}$	$1.742 \cdot 10^{-12}$	0
sm	0	0	0	$4.243 \cdot 10^{-12}$	$4.243 \cdot 10^{-12}$	0

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

		interfer	rence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$-2.615 \cdot 10^{-5}$	$-2.615 \cdot 10^{-5}$	0	$4.595 \cdot 10^{-5}$	$4.595 \cdot 10^{-5}$	0	
cHDD	$1.866 \cdot 10^{-6}$	$1.866 \cdot 10^{-6}$	0	$3.634 \cdot 10^{-7}$	$3.634 \cdot 10^{-7}$	0	
$\mathtt{ctHIm}$	$1.601 \cdot 10^{-5}$	$1.601 \cdot 10^{-5}$	0	$5.286 \cdot 10^{-5}$	$5.286 \cdot 10^{-5}$	0	
ctHRe	$3.678 \cdot 10^{-5}$	$3.678 \cdot 10^{-5}$	0	$1.84 \cdot 10^{-5}$	$1.84 \cdot 10^{-5}$	0	
sm	0	0	0	$1.929 \cdot 10^{-5}$	$1.929 \cdot 10^{-5}$	0	

### 1.7 $HH \rightarrow Hu\bar{u}$

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$-1.669 \cdot 10^{-15}$	$-1.669 \cdot 10^{-15}$	0	$4.384 \cdot 10^{-15}$	$4.384 \cdot 10^{-15}$	0	
cHDD	$-8.161 \cdot 10^{-16}$	$-8.161 \cdot 10^{-16}$	0	$1.542 \cdot 10^{-16}$	$1.542 \cdot 10^{-16}$	0	
cuHIm	$-9.449 \cdot 10^{-25}$	$-9.449 \cdot 10^{-25}$	0	$2.454 \cdot 10^{-16}$	$2.454 \cdot 10^{-16}$	0	
cuHRe	$-4.984 \cdot 10^{-15}$	$-4.984 \cdot 10^{-15}$	0	$3.25 \cdot 10^{-16}$	$3.25 \cdot 10^{-16}$	0	
sm	0	0	0	$3.234 \cdot 10^{-15}$	$3.234 \cdot 10^{-15}$	0	

### $\textbf{1.8} \quad HH \rightarrow Hzz$

		interfer	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$-1.658 \cdot 10^{-5}$	$-1.658 \cdot 10^{-5}$	0	$2.161 \cdot 10^{-5}$	$2.161 \cdot 10^{-5}$	0	
сНВ	$1.469 \cdot 10^{-6}$	$1.469 \cdot 10^{-6}$	$3.404 \cdot 10^{-7}$	$5.346 \cdot 10^{-7}$	$5.346 \cdot 10^{-7}$	$7.295 \cdot 10^{-7}$	
cHBtil	$-1.864 \cdot 10^{-6}$	$-1.864 \cdot 10^{-6}$	$3.218 \cdot 10^{-7}$	$4.713 \cdot 10^{-7}$	$4.713 \cdot 10^{-7}$	$7.215 \cdot 10^{-7}$	
cHDD	$-1.005 \cdot 10^{-5}$	$-1.005 \cdot 10^{-5}$	0	$4.405 \cdot 10^{-6}$	$4.405 \cdot 10^{-6}$	0	
cHW	$-7.389 \cdot 10^{-6}$	$-7.389 \cdot 10^{-6}$	$-1.083 \cdot 10^{-7}$	$6.744 \cdot 10^{-6}$	$6.744 \cdot 10^{-6}$	$-2.224 \cdot 10^{-7}$	
cHWB	$-1.945 \cdot 10^{-5}$	$-1.945 \cdot 10^{-5}$	$1.028 \cdot 10^{-7}$	$1.501 \cdot 10^{-5}$	$1.501 \cdot 10^{-5}$	$2.666 \cdot 10^{-7}$	
cHWBtil	$-3.355 \cdot 10^{-6}$	$-3.355 \cdot 10^{-6}$	$1.192 \cdot 10^{-7}$	$2.948 \cdot 10^{-6}$	$2.948 \cdot 10^{-6}$	$2.714 \cdot 10^{-7}$	
cHWtil	$-6.118 \cdot 10^{-6}$	$-6.118 \cdot 10^{-6}$	$-9.808 \cdot 10^{-8}$	$5.074 \cdot 10^{-6}$	$5.074 \cdot 10^{-6}$	$-2.168 \cdot 10^{-7}$	
sm	0	0	0	$1.322 \cdot 10^{-5}$	$1.322 \cdot 10^{-5}$	0	

### **1.9** $HH \to W^+W^-$

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	8.058	8.058	$-1.117 \cdot 10^{-7}$	0.8318	0.8318	0

cHDD	-0.05927	-0.05927	$1.299 \cdot 10^{-6}$	0.2515	0.2515	0
cHW	0.4304	0.4304	$-4.647 \cdot 10^{-8}$	11.59	11.59	$-8.631 \cdot 10^{-8}$
cHWtil	$-6.427 \cdot 10^{-15}$	$1.205 \cdot 10^{-14}$	2.874	9.811	9.811	$-1.019 \cdot 10^{-8}$
sm	0	0	0	0.1031	0.1031	0

# 1.10 $HH \rightarrow W^+W^-\gamma$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$1.975 \cdot 10^{-5}$	$1.975 \cdot 10^{-5}$	$-3.544 \cdot 10^{-7}$	$2.61 \cdot 10^{-5}$	$2.61\cdot 10^{-5}$	$3.065 \cdot 10^{-7}$		
сНВ	$-3.187 \cdot 10^{-9}$	$-3.186 \cdot 10^{-9}$	0.0002228	$6.287 \cdot 10^{-7}$	$6.287 \cdot 10^{-7}$	$1.909 \cdot 10^{-7}$		
cHBtil	$-3.739 \cdot 10^{-8}$	$-3.739 \cdot 10^{-8}$	$8.023 \cdot 10^{-7}$	$2.862 \cdot 10^{-7}$	$2.862 \cdot 10^{-7}$	$1.397 \cdot 10^{-7}$		
cHDD	$-3.942 \cdot 10^{-7}$	$-3.942 \cdot 10^{-7}$	$7.61 \cdot 10^{-7}$	$2.497 \cdot 10^{-7}$	$2.497 \cdot 10^{-7}$	$2.803 \cdot 10^{-7}$		
cHW	$1.439 \cdot 10^{-6}$	$1.439 \cdot 10^{-6}$	$-1.39 \cdot 10^{-6}$	0.0002921	0.0002921	$2.054 \cdot 10^{-7}$		
cHWB	$6.826 \cdot 10^{-7}$	$6.826 \cdot 10^{-7}$	$6.3 \cdot 10^{-7}$	$5.434 \cdot 10^{-5}$	$5.434 \cdot 10^{-5}$	$-2.024 \cdot 10^{-7}$		
cHWBtil	$-3.996 \cdot 10^{-6}$	$-3.996 \cdot 10^{-6}$	$-8.258 \cdot 10^{-7}$	$3.668 \cdot 10^{-5}$	$3.668 \cdot 10^{-5}$	$-1.091 \cdot 10^{-7}$		
cHWtil	$-1.129 \cdot 10^{-6}$	$-1.129 \cdot 10^{-6}$	$1.771 \cdot 10^{-7}$	$9.382 \cdot 10^{-5}$	$9.382 \cdot 10^{-5}$	$2.558 \cdot 10^{-7}$		
cW	$1.405 \cdot 10^{-6}$	$1.405 \cdot 10^{-6}$	$-2.847 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.494 \cdot 10^{-7}$		
cWtil	$-2.373 \cdot 10^{-7}$	$-2.373 \cdot 10^{-7}$	$2.529 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.494 \cdot 10^{-7}$		
sm	0	0	0	0.0001721	0.0001721	$1.743 \cdot 10^{-7}$		

### 1.11 $HH \rightarrow W^+ \bar{t} b$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$2.709 \cdot 10^{-5}$	$2.709 \cdot 10^{-5}$	$-1.107 \cdot 10^{-7}$	$9.724 \cdot 10^{-6}$	$9.724 \cdot 10^{-6}$	0		
cHDD	$1.185 \cdot 10^{-6}$	$1.185 \cdot 10^{-6}$	$-5.061 \cdot 10^{-7}$	$1.983 \cdot 10^{-6}$	$1.983 \cdot 10^{-6}$	0		
cHQ3	$1.987 \cdot 10^{-6}$	$1.987 \cdot 10^{-6}$	$-6.543 \cdot 10^{-7}$	$1.946 \cdot 10^{-5}$	$1.946 \cdot 10^{-5}$	0		
cHW	$-1.372 \cdot 10^{-5}$	$-1.372 \cdot 10^{-5}$	$-1.458 \cdot 10^{-7}$	$1.182 \cdot 10^{-5}$	$1.182 \cdot 10^{-5}$	$-1.693 \cdot 10^{-7}$		

cHWtil	$-9.318 \cdot 10^{-7}$	$-9.318 \cdot 10^{-7}$	$-1.073 \cdot 10^{-8}$	$9.155 \cdot 10^{-7}$	$9.155 \cdot 10^{-7}$	$-1.092 \cdot 10^{-7}$
$\mathtt{cHtbIm}$	$-2.896 \cdot 10^{-7}$	$-2.896 \cdot 10^{-7}$	$-6.906 \cdot 10^{-8}$	$7.609 \cdot 10^{-6}$	$7.609 \cdot 10^{-6}$	$-1.314 \cdot 10^{-8}$
cHtbRe	$-8.055 \cdot 10^{-7}$	$-8.055 \cdot 10^{-7}$	$-7.449 \cdot 10^{-8}$	$7.169 \cdot 10^{-6}$	$7.169 \cdot 10^{-6}$	$-8.37 \cdot 10^{-8}$
$\mathtt{cbHIm}$	$1.559 \cdot 10^{-8}$	$1.559 \cdot 10^{-8}$	$1.09 \cdot 10^{-6}$	$1.421 \cdot 10^{-5}$	$1.421 \cdot 10^{-5}$	$-7.036 \cdot 10^{-8}$
cbHRe	$-3.602 \cdot 10^{-7}$	$-3.602 \cdot 10^{-7}$	$-5.552 \cdot 10^{-8}$	$2.386 \cdot 10^{-6}$	$2.386 \cdot 10^{-6}$	$-4.19 \cdot 10^{-8}$
$\mathtt{cbWIm}$	$-9.432 \cdot 10^{-8}$	$-9.432 \cdot 10^{-8}$	$-1.272 \cdot 10^{-7}$	$1.612 \cdot 10^{-5}$	$1.612 \cdot 10^{-5}$	0
cbWRe	$-3.094 \cdot 10^{-7}$	$-3.094 \cdot 10^{-7}$	$-3.232 \cdot 10^{-8}$	$1.612 \cdot 10^{-5}$	$1.612 \cdot 10^{-5}$	0
$\mathtt{ctHIm}$	$9.777 \cdot 10^{-7}$	$9.777 \cdot 10^{-7}$	$-1.125 \cdot 10^{-7}$	$1.486 \cdot 10^{-5}$	$1.486 \cdot 10^{-5}$	$-6.728 \cdot 10^{-8}$
ctHRe	$-2.008 \cdot 10^{-7}$	$-2.008 \cdot 10^{-7}$	$1.992 \cdot 10^{-7}$	$2.593 \cdot 10^{-6}$	$2.593 \cdot 10^{-6}$	$-3.856 \cdot 10^{-8}$
ctWIm	$-4.574 \cdot 10^{-6}$	$-4.574 \cdot 10^{-6}$	$-4.372 \cdot 10^{-8}$	$2.027 \cdot 10^{-5}$	$2.027 \cdot 10^{-5}$	$-4.933 \cdot 10^{-8}$
ctWRe	$1.937 \cdot 10^{-5}$	$1.937 \cdot 10^{-5}$	$-5.164 \cdot 10^{-8}$	$1.292 \cdot 10^{-5}$	$1.292 \cdot 10^{-5}$	$-7.741 \cdot 10^{-8}$
sm	0	0	0	$1.22 \cdot 10^{-5}$	$1.22\cdot 10^{-5}$	$-8.199 \cdot 10^{-8}$

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

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cН	$5.395 \cdot 10^{-8}$	$5.395 \cdot 10^{-8}$	$-4.263 \cdot 10^{-7}$	$2.926 \cdot 10^{-8}$	$2.926 \cdot 10^{-8}$	$-2.392 \cdot 10^{-7}$	
cHDD	$7.96 \cdot 10^{-9}$	$7.96 \cdot 10^{-9}$	$-4.146 \cdot 10^{-7}$	$1.46 \cdot 10^{-9}$	$1.46 \cdot 10^{-9}$	$-2.055 \cdot 10^{-7}$	
cHW	$1.049 \cdot 10^{-6}$	$1.049 \cdot 10^{-6}$	$-2.86 \cdot 10^{-7}$	$6.254 \cdot 10^{-6}$	$6.254 \cdot 10^{-6}$	$-1.119 \cdot 10^{-7}$	
cHWtil	$3.14 \cdot 10^{-7}$	$3.14 \cdot 10^{-7}$	$-2.229 \cdot 10^{-7}$	$4.672 \cdot 10^{-7}$	$4.672 \cdot 10^{-7}$	$-8.562 \cdot 10^{-8}$	
cH13	$5.891 \cdot 10^{-7}$	$5.891 \cdot 10^{-7}$	$-2.546 \cdot 10^{-7}$	$4.128 \cdot 10^{-7}$	$4.128 \cdot 10^{-7}$	$-1.211 \cdot 10^{-7}$	
ceHIm	$-1.387 \cdot 10^{-18}$	$-1.387 \cdot 10^{-18}$	$-1.442 \cdot 10^{-7}$	$6.167 \cdot 10^{-18}$	$6.167 \cdot 10^{-18}$	$-6.486 \cdot 10^{-8}$	
ceHRe	$-1.531 \cdot 10^{-17}$	$-1.531 \cdot 10^{-17}$	0	$7.093 \cdot 10^{-18}$	$7.093 \cdot 10^{-18}$	$-7.049 \cdot 10^{-8}$	
$\mathtt{ceWIm}$	$8.288 \cdot 10^{-18}$	$8.288 \cdot 10^{-18}$	$1.086 \cdot 10^{-7}$	$4.994 \cdot 10^{-18}$	$4.994 \cdot 10^{-18}$	$-1.001 \cdot 10^{-7}$	
ceWRe	$-2.696 \cdot 10^{-18}$	$-2.696 \cdot 10^{-18}$	$-4.45 \cdot 10^{-7}$	$1.145 \cdot 10^{-18}$	$1.145 \cdot 10^{-18}$	$-1.747 \cdot 10^{-7}$	
sm	0	0	0	$1.267 \cdot 10^{-7}$	$1.267 \cdot 10^{-7}$	$-3.158 \cdot 10^{-7}$	

### 1.13 $HH \rightarrow W^- u \bar{d}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
сН	$2.73 \cdot 10^{-8}$	$2.73 \cdot 10^{-8}$	$-5.128 \cdot 10^{-7}$	$2.306 \cdot 10^{-8}$	$2.306 \cdot 10^{-8}$	$-2.168 \cdot 10^{-7}$	
cHDD	$-1.39 \cdot 10^{-8}$	$-1.39 \cdot 10^{-8}$	0	$9.2 \cdot 10^{-9}$	$9.2 \cdot 10^{-9}$	$-2.391 \cdot 10^{-7}$	
cHW	$2.018 \cdot 10^{-6}$	$2.018 \cdot 10^{-6}$	$-2.477 \cdot 10^{-7}$	$6.071 \cdot 10^{-6}$	$6.071 \cdot 10^{-6}$	$-1.153 \cdot 10^{-7}$	
cHWtil	$1.728 \cdot 10^{-6}$	$1.728 \cdot 10^{-6}$	$-2.894 \cdot 10^{-7}$	$1.829 \cdot 10^{-5}$	$1.829 \cdot 10^{-5}$	$-1.093 \cdot 10^{-7}$	
сНј3	$3.057 \cdot 10^{-6}$	$3.057 \cdot 10^{-6}$	$-2.617 \cdot 10^{-7}$	$1.914 \cdot 10^{-6}$	$1.914 \cdot 10^{-6}$	$-1.568 \cdot 10^{-7}$	
$\mathtt{cHudIm}$	$5.498 \cdot 10^{-25}$	$5.498 \cdot 10^{-25}$	$-7.276 \cdot 10^{-8}$	$2.106 \cdot 10^{-25}$	$2.106 \cdot 10^{-25}$	$-1.425 \cdot 10^{-7}$	
cHudRe	$-2.303 \cdot 10^{-24}$	$-2.303 \cdot 10^{-24}$	$7.381 \cdot 10^{-7}$	$1.658 \cdot 10^{-26}$	$1.658 \cdot 10^{-26}$	$-1.206 \cdot 10^{-7}$	
$\mathtt{cdHIm}$	$4.584 \cdot 10^{-16}$	$4.584 \cdot 10^{-16}$	$-1.309 \cdot 10^{-7}$	$4.464 \cdot 10^{-15}$	$4.464 \cdot 10^{-15}$	$-6.721 \cdot 10^{-8}$	
cdHRe	$-3.389 \cdot 10^{-15}$	$-3.389 \cdot 10^{-15}$	$-8.851 \cdot 10^{-8}$	$6.286 \cdot 10^{-15}$	$6.286 \cdot 10^{-15}$	$-1.114 \cdot 10^{-7}$	
$\mathtt{cdWIm}$	$1.011 \cdot 10^{-14}$	$1.011 \cdot 10^{-14}$	$-2.969 \cdot 10^{-7}$	$5.025 \cdot 10^{-15}$	$5.025 \cdot 10^{-15}$	$-7.96 \cdot 10^{-8}$	
cdWRe	$-6.875 \cdot 10^{-16}$	$-6.875 \cdot 10^{-16}$	$-2.764 \cdot 10^{-7}$	$6.815 \cdot 10^{-16}$	$6.815 \cdot 10^{-16}$	$-1.027 \cdot 10^{-7}$	
cuHIm	$-2.917 \cdot 10^{-16}$	$-2.917 \cdot 10^{-16}$	$-1.371 \cdot 10^{-7}$	$3.764 \cdot 10^{-16}$	$3.764 \cdot 10^{-16}$	$-2.657 \cdot 10^{-8}$	
cuHRe	$-1.037 \cdot 10^{-15}$	$-1.037 \cdot 10^{-15}$	$-9.641 \cdot 10^{-8}$	$2.229 \cdot 10^{-16}$	$2.229 \cdot 10^{-16}$	$-4.487 \cdot 10^{-8}$	
cuWIm	$-3.439 \cdot 10^{-16}$	$-3.439 \cdot 10^{-16}$	$8.724 \cdot 10^{-8}$	$1.459 \cdot 10^{-16}$	$1.459 \cdot 10^{-16}$	$-6.854 \cdot 10^{-8}$	
cuWRe	$2.374 \cdot 10^{-15}$	$2.374 \cdot 10^{-15}$	$-1.685 \cdot 10^{-7}$	$1.075 \cdot 10^{-15}$	$1.075 \cdot 10^{-15}$	$-9.305 \cdot 10^{-8}$	
sm	0	0	0	$2.369 \cdot 10^{-7}$	$2.369 \cdot 10^{-7}$	$-3.8 \cdot 10^{-7}$	

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$-2.251 \cdot 10^{-9}$	$-2.251 \cdot 10^{-9}$	$-3.554 \cdot 10^{-7}$	$2.85 \cdot 10^{-8}$	$2.85 \cdot 10^{-8}$	$-7.017 \cdot 10^{-8}$	
сНВ	$6.904 \cdot 10^{-7}$	$6.904 \cdot 10^{-7}$	$3.911 \cdot 10^{-7}$	$1.056 \cdot 10^{-6}$	$1.056 \cdot 10^{-6}$	$7.576 \cdot 10^{-7}$	
cHBtil	$-7.784 \cdot 10^{-9}$	$-7.784 \cdot 10^{-9}$	$4.753 \cdot 10^{-7}$	$1.117 \cdot 10^{-9}$	$1.117 \cdot 10^{-9}$	$7.163 \cdot 10^{-7}$	
cHDD	0.001788	0.001788	$-1.118 \cdot 10^{-7}$	$1.867 \cdot 10^{-5}$	$1.867 \cdot 10^{-5}$	$-1.071 \cdot 10^{-7}$	

cHQ1	$4.961 \cdot 10^{-7}$	$4.961 \cdot 10^{-7}$	$-6.047 \cdot 10^{-8}$	$4.986 \cdot 10^{-7}$	$4.986 \cdot 10^{-7}$	0
cHQ3	0.008759	0.008759	$-6.85 \cdot 10^{-8}$	0.0003447	0.0003447	0
cHW	$-6.735 \cdot 10^{-7}$	$-6.735 \cdot 10^{-7}$	$-1.782 \cdot 10^{-7}$	$3.446 \cdot 10^{-6}$	$3.446 \cdot 10^{-6}$	$-2.321 \cdot 10^{-7}$
cHWB	0.04129	0.04129	$2.422 \cdot 10^{-8}$	0.01291	0.01291	$1.549 \cdot 10^{-7}$
cHWBtil	$-4.149 \cdot 10^{-7}$	$-4.149 \cdot 10^{-7}$	$9.641 \cdot 10^{-8}$	$6.561 \cdot 10^{-7}$	$6.561 \cdot 10^{-7}$	$2.591 \cdot 10^{-7}$
cHWtil	$-7.073 \cdot 10^{-8}$	$-7.073 \cdot 10^{-8}$	$-1.697 \cdot 10^{-7}$	$2.071 \cdot 10^{-8}$	$2.071 \cdot 10^{-8}$	$-1.931 \cdot 10^{-7}$
cHbq	$-2.041 \cdot 10^{-7}$	$-2.041 \cdot 10^{-7}$	$3.919 \cdot 10^{-7}$	$9.837 \cdot 10^{-7}$	$9.837 \cdot 10^{-7}$	0
cbBIm	$1.104 \cdot 10^{-9}$	$1.104 \cdot 10^{-9}$	0	$7.459 \cdot 10^{-8}$	$7.459 \cdot 10^{-8}$	$3.62 \cdot 10^{-7}$
cbBRe	$1.573 \cdot 10^{-7}$	$1.573 \cdot 10^{-7}$	0	$2.361 \cdot 10^{-6}$	$2.361 \cdot 10^{-6}$	$3.813 \cdot 10^{-7}$
cbHIm	$-9.742 \cdot 10^{-9}$	$-9.742 \cdot 10^{-9}$	$5.133 \cdot 10^{-8}$	$9.024 \cdot 10^{-6}$	$9.024 \cdot 10^{-6}$	$-2.77 \cdot 10^{-7}$
cbHRe	$2.377 \cdot 10^{-8}$	$2.377 \cdot 10^{-8}$	$2.944 \cdot 10^{-7}$	$8.022 \cdot 10^{-7}$	$8.022 \cdot 10^{-7}$	$-1.371 \cdot 10^{-7}$
cbWIm	$-8.909 \cdot 10^{-8}$	$-8.909 \cdot 10^{-8}$	$-2.245 \cdot 10^{-7}$	$1.674 \cdot 10^{-6}$	$1.674 \cdot 10^{-6}$	$-1.195 \cdot 10^{-7}$
cbWRe	$-4.063 \cdot 10^{-8}$	$-4.063 \cdot 10^{-8}$	$-1.969 \cdot 10^{-7}$	$1.683 \cdot 10^{-6}$	$1.683 \cdot 10^{-6}$	$-5.941 \cdot 10^{-8}$
sm	0	0	0	$3.552 \cdot 10^{-7}$	$3.552 \cdot 10^{-7}$	$-8.445 \cdot 10^{-8}$

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

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$2.662 \cdot 10^{-8}$	$2.662 \cdot 10^{-8}$	0	$1.794 \cdot 10^{-8}$	$1.794 \cdot 10^{-8}$	0	
сНВ	$7.165 \cdot 10^{-7}$	$7.165 \cdot 10^{-7}$	$3.489 \cdot 10^{-7}$	$8.857 \cdot 10^{-7}$	$8.857 \cdot 10^{-7}$	$7.113 \cdot 10^{-7}$	
cHBtil	$2.362 \cdot 10^{-8}$	$2.362 \cdot 10^{-8}$	$3.811 \cdot 10^{-7}$	$2.342 \cdot 10^{-8}$	$2.342 \cdot 10^{-8}$	$6.831 \cdot 10^{-7}$	
cHDD	$2.707 \cdot 10^{-8}$	$2.707 \cdot 10^{-8}$	0	$1.972 \cdot 10^{-9}$	$1.972 \cdot 10^{-9}$	0	
cHW	$7.54 \cdot 10^{-7}$	$7.54\cdot10^{-7}$	$-1.061 \cdot 10^{-7}$	$1.281 \cdot 10^{-6}$	$1.281 \cdot 10^{-6}$	$-1.561 \cdot 10^{-7}$	
cHWB	$6.938 \cdot 10^{-8}$	$6.938 \cdot 10^{-8}$	$1.153 \cdot 10^{-7}$	$1.601 \cdot 10^{-7}$	$1.601 \cdot 10^{-7}$	$2.499 \cdot 10^{-7}$	
cHWBtil	$-5.748 \cdot 10^{-8}$	$-5.748 \cdot 10^{-8}$	$1.218 \cdot 10^{-7}$	$1.119 \cdot 10^{-7}$	$1.119 \cdot 10^{-7}$	$2.681 \cdot 10^{-7}$	
cHWtil	$7.75 \cdot 10^{-8}$	$7.75 \cdot 10^{-8}$	$-1.032 \cdot 10^{-7}$	$2.522 \cdot 10^{-7}$	$2.522 \cdot 10^{-7}$	$-1.983 \cdot 10^{-7}$	
cHl1	$-3.83 \cdot 10^{-7}$	$-3.83 \cdot 10^{-7}$	0	$7.367 \cdot 10^{-8}$	$7.367 \cdot 10^{-8}$	0	
cH13	$4.32 \cdot 10^{-7}$	$4.32 \cdot 10^{-7}$	0	$3.069 \cdot 10^{-7}$	$3.069 \cdot 10^{-7}$	0	

sm 0 0 1.984  $\cdot$  10<sup>-7</sup> 1.984  $\cdot$  10<sup>-7</sup>

#### **1.16** $HH \rightarrow zc\bar{c}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$2.637 \cdot 10^{-6}$	$2.637 \cdot 10^{-6}$	$-1.517 \cdot 10^{-7}$	$9.288 \cdot 10^{-7}$	$9.288 \cdot 10^{-7}$	$-1.507 \cdot 10^{-7}$	
сНВ	$1.554 \cdot 10^{-8}$	$1.554 \cdot 10^{-8}$	$8.878 \cdot 10^{-6}$	$6.691 \cdot 10^{-7}$	$6.691 \cdot 10^{-7}$	$7.024 \cdot 10^{-7}$	
cHBtil	$8.795 \cdot 10^{-10}$	$8.795 \cdot 10^{-10}$	$6.026 \cdot 10^{-7}$	$2.086 \cdot 10^{-7}$	$2.086 \cdot 10^{-7}$	$6.713 \cdot 10^{-7}$	
cHDD	$1.124 \cdot 10^{-7}$	$1.124 \cdot 10^{-7}$	$-1.78 \cdot 10^{-7}$	$7.001 \cdot 10^{-9}$	$7.001 \cdot 10^{-9}$	$-1.428 \cdot 10^{-7}$	
cHW	$3.942 \cdot 10^{-6}$	$3.942 \cdot 10^{-6}$	$-2.79 \cdot 10^{-7}$	$3.759 \cdot 10^{-5}$	$3.759 \cdot 10^{-5}$	$-2.395 \cdot 10^{-7}$	
cHWB	$3.652 \cdot 10^{-7}$	$3.652 \cdot 10^{-7}$	$1.643 \cdot 10^{-7}$	$1.622 \cdot 10^{-7}$	$1.622 \cdot 10^{-7}$	$2.466 \cdot 10^{-7}$	
cHWBtil	$1.633 \cdot 10^{-8}$	$1.633 \cdot 10^{-8}$	$2.45 \cdot 10^{-7}$	$2.122 \cdot 10^{-8}$	$2.122 \cdot 10^{-8}$	$2.356 \cdot 10^{-7}$	
cHWtil	$-2.634 \cdot 10^{-9}$	$-2.634 \cdot 10^{-9}$	$-3.037 \cdot 10^{-7}$	$1.134 \cdot 10^{-6}$	$1.134 \cdot 10^{-6}$	$-1.764 \cdot 10^{-7}$	
cHj1	$-5.078 \cdot 10^{-6}$	$-5.078 \cdot 10^{-6}$	$-1.576 \cdot 10^{-7}$	$1.593 \cdot 10^{-5}$	$1.593 \cdot 10^{-5}$	0	
сНј3	$4.387 \cdot 10^{-6}$	$4.387 \cdot 10^{-6}$	$-1.595 \cdot 10^{-7}$	$1.059 \cdot 10^{-5}$	$1.059 \cdot 10^{-5}$	0	
cHu	$1.983 \cdot 10^{-6}$	$1.983 \cdot 10^{-6}$	$4.035 \cdot 10^{-7}$	$1.059 \cdot 10^{-5}$	$1.059 \cdot 10^{-5}$	0	
cuBIm	$-7.343 \cdot 10^{-13}$	$-7.343 \cdot 10^{-13}$	$1.321 \cdot 10^{-6}$	$3.98 \cdot 10^{-11}$	$3.98 \cdot 10^{-11}$	$3.517 \cdot 10^{-7}$	
cuBRe	$1.413 \cdot 10^{-10}$	$1.413 \cdot 10^{-10}$	$-4.246 \cdot 10^{-7}$	$8.292 \cdot 10^{-11}$	$8.292 \cdot 10^{-11}$	$3.618 \cdot 10^{-7}$	
cuHIm	$2.89 \cdot 10^{-10}$	$2.89 \cdot 10^{-10}$	0	$1.379 \cdot 10^{-10}$	$1.379 \cdot 10^{-10}$	$-2.9 \cdot 10^{-7}$	
cuHRe	$1.729 \cdot 10^{-10}$	$1.729 \cdot 10^{-10}$	$4.626 \cdot 10^{-7}$	$9.785 \cdot 10^{-10}$	$9.785 \cdot 10^{-10}$	$-2.044 \cdot 10^{-8}$	
cuWIm	$1.248 \cdot 10^{-10}$	$1.248 \cdot 10^{-10}$	$-7.212 \cdot 10^{-7}$	$1.783 \cdot 10^{-10}$	$1.783 \cdot 10^{-10}$	$-1.121 \cdot 10^{-7}$	
cuWRe	$-2.56 \cdot 10^{-10}$	$-2.56 \cdot 10^{-10}$	$-6.641 \cdot 10^{-7}$	$2.721 \cdot 10^{-10}$	$2.721 \cdot 10^{-10}$	$-1.103 \cdot 10^{-7}$	
sm	0	0	0	$7.711 \cdot 10^{-7}$	$7.711 \cdot 10^{-7}$	$-1.556 \cdot 10^{-7}$	

### 1.17 $HH \rightarrow zd\bar{d}$

сН	$1.688 \cdot 10^{-8}$	$1.688 \cdot 10^{-8}$	$-1.185 \cdot 10^{-7}$	$5.791 \cdot 10^{-10}$	$5.791 \cdot 10^{-10}$	$-1.036 \cdot 10^{-7}$
сНВ	$6.104 \cdot 10^{-8}$	$6.104 \cdot 10^{-8}$	$4.423 \cdot 10^{-7}$	$4.91 \cdot 10^{-8}$	$4.91\cdot 10^{-8}$	$7.128 \cdot 10^{-7}$
cHBtil	$3.451 \cdot 10^{-9}$	$3.451 \cdot 10^{-9}$	$4.056 \cdot 10^{-7}$	$3.516 \cdot 10^{-8}$	$3.516 \cdot 10^{-8}$	$7.111 \cdot 10^{-7}$
cHDD	$5.855 \cdot 10^{-8}$	$5.855 \cdot 10^{-8}$	$-1.025 \cdot 10^{-7}$	$5.602 \cdot 10^{-9}$	$5.602 \cdot 10^{-9}$	$-1.071 \cdot 10^{-7}$
cHW	$7.634 \cdot 10^{-7}$	$7.634 \cdot 10^{-7}$	$-1.703 \cdot 10^{-7}$	$6.447 \cdot 10^{-7}$	$6.447 \cdot 10^{-7}$	$-2.016 \cdot 10^{-7}$
cHWB	$2.674 \cdot 10^{-7}$	$2.674 \cdot 10^{-7}$	$7.481 \cdot 10^{-8}$	$5.167 \cdot 10^{-7}$	$5.167 \cdot 10^{-7}$	$2.516 \cdot 10^{-7}$
cHWBtil	$1.782 \cdot 10^{-7}$	$1.782 \cdot 10^{-7}$	$1.122 \cdot 10^{-7}$	$8.219 \cdot 10^{-8}$	$8.219 \cdot 10^{-8}$	$2.433 \cdot 10^{-7}$
cHWtil	$2.952 \cdot 10^{-8}$	$2.952 \cdot 10^{-8}$	$-2.033 \cdot 10^{-7}$	$6.718 \cdot 10^{-7}$	$6.718 \cdot 10^{-7}$	$-2.233 \cdot 10^{-7}$
cHd	$-5.434 \cdot 10^{-7}$	$-5.434 \cdot 10^{-7}$	$3.681 \cdot 10^{-7}$	$6.021 \cdot 10^{-6}$	$6.021 \cdot 10^{-6}$	0
cHj1	$1.245 \cdot 10^{-6}$	$1.245 \cdot 10^{-6}$	$-8.03 \cdot 10^{-8}$	$1.52 \cdot 10^{-6}$	$1.52\cdot 10^{-6}$	0
сНј3	$5.643 \cdot 10^{-6}$	$5.643 \cdot 10^{-6}$	$-7.089 \cdot 10^{-8}$	$1.382 \cdot 10^{-5}$	$1.382 \cdot 10^{-5}$	0
cdBIm	$-5.687 \cdot 10^{-16}$	$-5.687 \cdot 10^{-16}$	0	$1.931 \cdot 10^{-16}$	$1.931 \cdot 10^{-16}$	$3.626 \cdot 10^{-7}$
cdBRe	$-1.623 \cdot 10^{-15}$	$-1.623 \cdot 10^{-15}$	$6.161 \cdot 10^{-8}$	$4.297 \cdot 10^{-16}$	$4.297 \cdot 10^{-16}$	$3.491 \cdot 10^{-7}$
$\mathtt{cdHIm}$	$1.256 \cdot 10^{-15}$	$1.256 \cdot 10^{-15}$	0	$1.956 \cdot 10^{-15}$	$1.956 \cdot 10^{-15}$	$-1.022 \cdot 10^{-7}$
cdHRe	$-3.046 \cdot 10^{-15}$	$-3.046 \cdot 10^{-15}$	$-1.313 \cdot 10^{-7}$	$3.367 \cdot 10^{-15}$	$3.367 \cdot 10^{-15}$	$-8.91 \cdot 10^{-8}$
cdWIm	$-2.272 \cdot 10^{-16}$	$-2.272 \cdot 10^{-16}$	$-2.641 \cdot 10^{-7}$	$2.595 \cdot 10^{-15}$	$2.595 \cdot 10^{-15}$	$-1.156 \cdot 10^{-7}$
cdWRe	$-2.94 \cdot 10^{-15}$	$-2.94 \cdot 10^{-15}$	$-2.041 \cdot 10^{-7}$	$1.41 \cdot 10^{-15}$	$1.41 \cdot 10^{-15}$	$-7.093 \cdot 10^{-8}$
sm	0	0	0	$3.728 \cdot 10^{-7}$	$3.728 \cdot 10^{-7}$	$-1.073 \cdot 10^{-7}$

### **1.18** $HH \to ze^+e^-$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$8.14 \cdot 10^{-9}$	$8.14 \cdot 10^{-9}$	$-4.914 \cdot 10^{-8}$	$1.094 \cdot 10^{-9}$	$1.094 \cdot 10^{-9}$	$-9.139 \cdot 10^{-8}$		
сНВ	$4.237 \cdot 10^{-8}$	$4.237 \cdot 10^{-8}$	$1.676 \cdot 10^{-6}$	$1.664 \cdot 10^{-7}$	$1.664 \cdot 10^{-7}$	$6.613 \cdot 10^{-7}$		
cHBtil	$-2.806 \cdot 10^{-8}$	$-2.806 \cdot 10^{-8}$	$1.639 \cdot 10^{-6}$	$2.342 \cdot 10^{-7}$	$2.342 \cdot 10^{-7}$	$7.26 \cdot 10^{-7}$		
cHDD	$1.404 \cdot 10^{-6}$	$1.404 \cdot 10^{-6}$	0	$2.024 \cdot 10^{-6}$	$2.024 \cdot 10^{-6}$	$-4.941 \cdot 10^{-8}$		
cHW	$9.55 \cdot 10^{-8}$	$9.55 \cdot 10^{-8}$	$-4.607 \cdot 10^{-7}$	$4.978 \cdot 10^{-7}$	$4.978 \cdot 10^{-7}$	$-2.21\cdot10^{-7}$		
cHWB	$9.584 \cdot 10^{-6}$	$9.584 \cdot 10^{-6}$	$1.461 \cdot 10^{-7}$	0.0001525	0.0001525	$3.279 \cdot 10^{-7}$		

cHWBtil	$-6.341 \cdot 10^{-8}$	$-6.341 \cdot 10^{-8}$	$4.889 \cdot 10^{-7}$	$3.082 \cdot 10^{-7}$	$3.082 \cdot 10^{-7}$	$2.595 \cdot 10^{-7}$
cHWtil	$-1.238 \cdot 10^{-7}$	$-1.238 \cdot 10^{-7}$	$-4.04 \cdot 10^{-7}$	$4.968 \cdot 10^{-7}$	$4.968 \cdot 10^{-7}$	$-2.013 \cdot 10^{-7}$
сНе	$-8.101 \cdot 10^{-7}$	$-8.101 \cdot 10^{-7}$	$3.456 \cdot 10^{-7}$	$3.322 \cdot 10^{-6}$	$3.322 \cdot 10^{-6}$	0
cHl1	$6.37\cdot 10^{-7}$	$6.37 \cdot 10^{-7}$	$-3.14 \cdot 10^{-7}$	$1.958 \cdot 10^{-6}$	$1.958 \cdot 10^{-6}$	0
cH13	$6.377 \cdot 10^{-7}$	$6.377 \cdot 10^{-7}$	$-3.136 \cdot 10^{-7}$	$1.764 \cdot 10^{-6}$	$1.764 \cdot 10^{-6}$	0
ceBIm	$2.561 \cdot 10^{-19}$	$2.561 \cdot 10^{-19}$	$1.058 \cdot 10^{-5}$	$6.058 \cdot 10^{-19}$	$6.058 \cdot 10^{-19}$	$3.466 \cdot 10^{-7}$
ceBRe	$-1.099 \cdot 10^{-17}$	$-1.099 \cdot 10^{-17}$	$-4.732 \cdot 10^{-6}$	$6.058 \cdot 10^{-19}$	$6.058 \cdot 10^{-19}$	$3.466 \cdot 10^{-7}$
ceHIm	$2.236 \cdot 10^{-18}$	$2.236 \cdot 10^{-18}$	0	$5.512 \cdot 10^{-18}$	$5.512 \cdot 10^{-18}$	$-5.442 \cdot 10^{-8}$
ceHRe	$6.065 \cdot 10^{-18}$	$6.065 \cdot 10^{-18}$	$1.979 \cdot 10^{-7}$	$5.036 \cdot 10^{-18}$	$5.036 \cdot 10^{-18}$	$-5.957 \cdot 10^{-8}$
ceWIm	$4.638 \cdot 10^{-19}$	$4.638 \cdot 10^{-19}$	$1.033 \cdot 10^{-5}$	$1.988 \cdot 10^{-18}$	$1.988 \cdot 10^{-18}$	$-1.006 \cdot 10^{-7}$
ceWRe	$-3.858 \cdot 10^{-19}$	$-3.858 \cdot 10^{-19}$	$-6.765 \cdot 10^{-6}$	$2.009 \cdot 10^{-18}$	$2.009 \cdot 10^{-18}$	$-1.493 \cdot 10^{-7}$
sm	0	0	0	$2.694 \cdot 10^{-8}$	$2.694 \cdot 10^{-8}$	$-3.712 \cdot 10^{-8}$

## **1.19** $HH \rightarrow zt\bar{t}$

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$-2.138 \cdot 10^{-6}$	$-2.138 \cdot 10^{-6}$	$1.871 \cdot 10^{-7}$	$1.155 \cdot 10^{-6}$	$1.155 \cdot 10^{-6}$	0
cHB	$-8.429 \cdot 10^{-7}$	$-8.429 \cdot 10^{-7}$	$4.271 \cdot 10^{-7}$	$6.683 \cdot 10^{-7}$	$6.683 \cdot 10^{-7}$	$7.033 \cdot 10^{-7}$
cHBtil	$-2.664 \cdot 10^{-7}$	$-2.664 \cdot 10^{-7}$	$1.802 \cdot 10^{-6}$	$2.196 \cdot 10^{-6}$	$2.196 \cdot 10^{-6}$	$7.285 \cdot 10^{-7}$
cHDD	$-4.358 \cdot 10^{-5}$	$-4.358 \cdot 10^{-5}$	$2.294 \cdot 10^{-8}$	$1.161 \cdot 10^{-5}$	$1.161 \cdot 10^{-5}$	0
cHQ1	0.000204	0.000204	$9.804 \cdot 10^{-8}$	0.0001421	0.0001421	0
cHQ3	$-2.133 \cdot 10^{-5}$	$-2.133 \cdot 10^{-5}$	$-7.033 \cdot 10^{-7}$	$5.563 \cdot 10^{-5}$	$5.563 \cdot 10^{-5}$	0
cHW	$-2.523 \cdot 10^{-5}$	$-2.523 \cdot 10^{-5}$	$-1.189 \cdot 10^{-7}$	$2.498 \cdot 10^{-6}$	$2.498 \cdot 10^{-6}$	$-2.402 \cdot 10^{-7}$
cHWB	$8.619 \cdot 10^{-5}$	$8.619 \cdot 10^{-5}$	$1.16 \cdot 10^{-7}$	$4.943 \cdot 10^{-5}$	$4.943 \cdot 10^{-5}$	$2.428 \cdot 10^{-7}$
cHWBtil	$-1.169 \cdot 10^{-8}$	$-1.169 \cdot 10^{-8}$	$3.422 \cdot 10^{-7}$	$1.933 \cdot 10^{-6}$	$1.933 \cdot 10^{-6}$	$2.586 \cdot 10^{-7}$
cHWtil	$-4.244 \cdot 10^{-6}$	$-4.244 \cdot 10^{-6}$	$-2.828 \cdot 10^{-7}$	$1.444 \cdot 10^{-5}$	$1.444 \cdot 10^{-5}$	$-2.078 \cdot 10^{-7}$
cHt	$8.479 \cdot 10^{-6}$	$8.479 \cdot 10^{-6}$	$-3.892 \cdot 10^{-7}$	$3.456 \cdot 10^{-5}$	$3.456 \cdot 10^{-5}$	0
ctBIm	$1.718 \cdot 10^{-6}$	$1.718 \cdot 10^{-6}$	$-4.075 \cdot 10^{-7}$	$9.098 \cdot 10^{-6}$	$9.098 \cdot 10^{-6}$	$3.627 \cdot 10^{-7}$

ctBRe	$-2.594 \cdot 10^{-6}$	$-2.594 \cdot 10^{-6}$	$-4.24 \cdot 10^{-7}$	$2.271 \cdot 10^{-5}$	$2.271 \cdot 10^{-5}$	$3.523 \cdot 10^{-7}$
$\mathtt{ctHIm}$	$1.742 \cdot 10^{-7}$	$1.742 \cdot 10^{-7}$	$-1.148 \cdot 10^{-7}$	$3.625 \cdot 10^{-6}$	$3.625 \cdot 10^{-6}$	$-8.275 \cdot 10^{-8}$
ctHRe	$1.142 \cdot 10^{-6}$	$1.142 \cdot 10^{-6}$	$8.758 \cdot 10^{-8}$	$9.21 \cdot 10^{-7}$	$9.21 \cdot 10^{-7}$	$-1.412 \cdot 10^{-7}$
$\mathtt{ctWIm}$	$-5.866 \cdot 10^{-8}$	$-5.866 \cdot 10^{-8}$	$-3.75 \cdot 10^{-7}$	0.0001156	0.0001156	$-1.731 \cdot 10^{-7}$
ctWRe	$4.699 \cdot 10^{-6}$	$4.699 \cdot 10^{-6}$	$-6.384 \cdot 10^{-7}$	$7.451 \cdot 10^{-5}$	$7.451 \cdot 10^{-5}$	$-1.208 \cdot 10^{-7}$
sm	0	0	0	$6.444 \cdot 10^{-6}$	$6.444 \cdot 10^{-6}$	$-7.76 \cdot 10^{-8}$

### $\textbf{1.20} \quad HH \rightarrow zz$

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
cН	0.3879	0.3879	0	0.4129	0.4129	0
cHB	0.007465	0.007465	$3.617 \cdot 10^{-7}$	0.2073	0.2073	$7.236 \cdot 10^{-7}$
cHBtil	$-7.783 \cdot 10^{-17}$	$-1.517 \cdot 10^{-16}$	-0.9497	0.2084	0.2084	$7.199 \cdot 10^{-7}$
cHDD	0.003767	0.003767	0	0.09486	0.09486	0
cHW	0.03783	0.03783	$-1.057 \cdot 10^{-7}$	2.311	2.311	$-2.163 \cdot 10^{-7}$
cHWB	0.05541	0.05541	$1.263 \cdot 10^{-7}$	1.14	1.14	$2.631 \cdot 10^{-7}$
cHWBtil	$2.636 \cdot 10^{-16}$	$1.09 \cdot 10^{-16}$	0.5863	0.6782	0.6782	$2.507 \cdot 10^{-7}$
cHWtil	$-2.553 \cdot 10^{-16}$	$-4.988 \cdot 10^{-16}$	-0.9537	2.244	2.244	$-1.783 \cdot 10^{-7}$
sm	0	0	0	0.08915	0.08915	0

# 1.21 $HW^+ \rightarrow \gamma t \bar{b}$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНВ	$-3.37 \cdot 10^{-7}$	$-3.37 \cdot 10^{-7}$	$2.967 \cdot 10^{-7}$	$5.373 \cdot 10^{-7}$	$5.373 \cdot 10^{-7}$	$1.861 \cdot 10^{-7}$		
cHBtil	$-1.536 \cdot 10^{-8}$	$-1.536 \cdot 10^{-8}$	$4.556 \cdot 10^{-7}$	$8.391 \cdot 10^{-8}$	$8.391 \cdot 10^{-8}$	$2.503 \cdot 10^{-7}$		
cHDD	$5.913 \cdot 10^{-10}$	$5.913 \cdot 10^{-10}$	$1.437 \cdot 10^{-6}$	$3.032 \cdot 10^{-10}$	$3.032 \cdot 10^{-10}$	$2.309 \cdot 10^{-7}$		
cHQ3	$1.107 \cdot 10^{-7}$	$1.107 \cdot 10^{-7}$	$9.036 \cdot 10^{-8}$	$9.465 \cdot 10^{-8}$	$9.465 \cdot 10^{-8}$	$2.324 \cdot 10^{-7}$		

cHW	$-1.665 \cdot 10^{-7}$	$-1.665 \cdot 10^{-7}$	$1.802 \cdot 10^{-7}$	$3.296 \cdot 10^{-7}$	$3.296 \cdot 10^{-7}$	$1.517 \cdot 10^{-7}$
cHWB	$1.531 \cdot 10^{-7}$	$1.531 \cdot 10^{-7}$	$-1.959 \cdot 10^{-6}$	$3.246 \cdot 10^{-6}$	$3.246 \cdot 10^{-6}$	$-1.849 \cdot 10^{-7}$
cHWBtil	$-1.731 \cdot 10^{-7}$	$-1.731 \cdot 10^{-7}$	$-5.776 \cdot 10^{-8}$	$1.284 \cdot 10^{-6}$	$1.284 \cdot 10^{-6}$	$-1.558 \cdot 10^{-7}$
cHWtil	$-5.507 \cdot 10^{-8}$	$-5.507 \cdot 10^{-8}$	$9.08 \cdot 10^{-8}$	$3.882 \cdot 10^{-7}$	$3.882 \cdot 10^{-7}$	$1.546 \cdot 10^{-7}$
$\mathtt{cHtbIm}$	$-6.664 \cdot 10^{-9}$	$-6.664 \cdot 10^{-9}$	$2.101 \cdot 10^{-7}$	$2.508 \cdot 10^{-7}$	$2.508 \cdot 10^{-7}$	$1.994 \cdot 10^{-7}$
cHtbRe	$-4.252 \cdot 10^{-10}$	$-4.252 \cdot 10^{-10}$	$2.116 \cdot 10^{-7}$	$1.073 \cdot 10^{-8}$	$1.073 \cdot 10^{-8}$	$2.795 \cdot 10^{-7}$
cM	$2.467 \cdot 10^{-7}$	$2.467 \cdot 10^{-7}$	$2.026 \cdot 10^{-7}$	$3.423 \cdot 10^{-7}$	$3.423 \cdot 10^{-7}$	$2.629 \cdot 10^{-7}$
cWtil	$-9.838 \cdot 10^{-8}$	$-9.838 \cdot 10^{-8}$	$2.338 \cdot 10^{-7}$	$3.423 \cdot 10^{-7}$	$3.423 \cdot 10^{-7}$	$2.629 \cdot 10^{-7}$
cbBIm	$1.369 \cdot 10^{-7}$	$1.369 \cdot 10^{-7}$	$7.303 \cdot 10^{-8}$	$1.003 \cdot 10^{-6}$	$1.003 \cdot 10^{-6}$	$-9.974 \cdot 10^{-8}$
cbBRe	$6.173 \cdot 10^{-8}$	$6.173 \cdot 10^{-8}$	$4.86 \cdot 10^{-8}$	$7.747 \cdot 10^{-7}$	$7.747 \cdot 10^{-7}$	$-1.291 \cdot 10^{-7}$
$\mathtt{cbHIm}$	$-4.341 \cdot 10^{-9}$	$-4.341 \cdot 10^{-9}$	$2.303 \cdot 10^{-7}$	$1.452 \cdot 10^{-7}$	$1.452 \cdot 10^{-7}$	$2.755 \cdot 10^{-7}$
cbHRe	$-1.916 \cdot 10^{-10}$	$-1.916 \cdot 10^{-10}$	$2.087 \cdot 10^{-7}$	$4 \cdot 10^{-10}$	$4 \cdot 10^{-10}$	$2.25 \cdot 10^{-7}$
cbWIm	$9.673 \cdot 10^{-9}$	$9.673 \cdot 10^{-9}$	$3.102 \cdot 10^{-7}$	$5.226 \cdot 10^{-7}$	$5.226 \cdot 10^{-7}$	$3.253 \cdot 10^{-7}$
cbWRe	$-2.731 \cdot 10^{-8}$	$-2.731 \cdot 10^{-8}$	$4.395 \cdot 10^{-7}$	$5.226 \cdot 10^{-7}$	$5.226 \cdot 10^{-7}$	$3.253 \cdot 10^{-7}$
ctBIm	$-1.346 \cdot 10^{-7}$	$-1.346 \cdot 10^{-7}$	0	$2.346 \cdot 10^{-7}$	$2.346 \cdot 10^{-7}$	$-1.279 \cdot 10^{-7}$
ctBRe	$-2.974 \cdot 10^{-6}$	$-2.974 \cdot 10^{-6}$	$6.725 \cdot 10^{-8}$	$1.089 \cdot 10^{-6}$	$1.089 \cdot 10^{-6}$	$-1.837 \cdot 10^{-7}$
$\mathtt{ctHIm}$	$-1.34 \cdot 10^{-8}$	$-1.34 \cdot 10^{-8}$	$2.239 \cdot 10^{-7}$	$4.372 \cdot 10^{-10}$	$4.372 \cdot 10^{-10}$	$2.059 \cdot 10^{-7}$
ctHRe	$-3.17 \cdot 10^{-7}$	$-3.17 \cdot 10^{-7}$	$1.893 \cdot 10^{-7}$	$9.362 \cdot 10^{-9}$	$9.362 \cdot 10^{-9}$	$1.923 \cdot 10^{-7}$
$\mathtt{ctWIm}$	$6.8 \cdot 10^{-7}$	$6.8 \cdot 10^{-7}$	$2.647 \cdot 10^{-7}$	$2.576 \cdot 10^{-6}$	$2.576 \cdot 10^{-6}$	$3.494 \cdot 10^{-7}$
ctWRe	$-1.342 \cdot 10^{-6}$	$-1.342 \cdot 10^{-6}$	$2.981 \cdot 10^{-7}$	$6.891 \cdot 10^{-6}$	$6.891 \cdot 10^{-6}$	$2.612 \cdot 10^{-7}$
sm	0	0	0	$8.492 \cdot 10^{-6}$	$8.492 \cdot 10^{-6}$	$2.355 \cdot 10^{-7}$

## 1.22 $HW^+ \rightarrow \gamma u \bar{d}$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	$4.781 \cdot 10^{-8}$	$4.781 \cdot 10^{-8}$	$4.183 \cdot 10^{-8}$	$5.711 \cdot 10^{-9}$	$5.711 \cdot 10^{-9}$	$1.226 \cdot 10^{-7}$
cHBtil	$2.744 \cdot 10^{-9}$	$2.744 \cdot 10^{-9}$	0	$1.426 \cdot 10^{-9}$	$1.426 \cdot 10^{-9}$	$1.402 \cdot 10^{-7}$
cHDD	$1.488 \cdot 10^{-16}$	$1.488 \cdot 10^{-16}$	$2.016 \cdot 10^{-7}$	$1.193 \cdot 10^{-18}$	$1.193 \cdot 10^{-18}$	$1.677 \cdot 10^{-7}$

cHW	$-3.048 \cdot 10^{-10}$	$-3.048 \cdot 10^{-10}$	$3.281 \cdot 10^{-8}$	$1.615 \cdot 10^{-8}$	$1.615 \cdot 10^{-8}$	$1.239 \cdot 10^{-7}$
cHWB	$-3.084 \cdot 10^{-6}$	$-3.084 \cdot 10^{-6}$	$-1.297 \cdot 10^{-7}$	$1.817 \cdot 10^{-5}$	$1.817 \cdot 10^{-5}$	$-3.303 \cdot 10^{-7}$
cHWBtil	$-8.327 \cdot 10^{-9}$	$-8.327 \cdot 10^{-9}$	$-7.205 \cdot 10^{-8}$	$6.513 \cdot 10^{-8}$	$6.513 \cdot 10^{-8}$	$-1.996 \cdot 10^{-7}$
cHWtil	$-1.548 \cdot 10^{-8}$	$-1.548 \cdot 10^{-8}$	0	$1.1\cdot 10^{-6}$	$1.1 \cdot 10^{-6}$	$9.095 \cdot 10^{-8}$
сНј3	$1.039 \cdot 10^{-6}$	$1.039 \cdot 10^{-6}$	$9.627 \cdot 10^{-8}$	$1.471 \cdot 10^{-6}$	$1.471 \cdot 10^{-6}$	$2.039 \cdot 10^{-7}$
cHudIm	$8.851 \cdot 10^{-28}$	$8.851 \cdot 10^{-28}$	$1.921 \cdot 10^{-7}$	$1.778 \cdot 10^{-27}$	$1.778 \cdot 10^{-27}$	$2.249 \cdot 10^{-7}$
cHudRe	$-4.795 \cdot 10^{-25}$	$-4.795 \cdot 10^{-25}$	$2.086 \cdot 10^{-8}$	$1.22 \cdot 10^{-26}$	$1.22 \cdot 10^{-26}$	$1.639 \cdot 10^{-7}$
cW	$1.135 \cdot 10^{-8}$	$1.135 \cdot 10^{-8}$	$8.81 \cdot 10^{-8}$	$2.761 \cdot 10^{-8}$	$2.761 \cdot 10^{-8}$	$1.449 \cdot 10^{-7}$
cWtil	$-8.124 \cdot 10^{-9}$	$-8.124 \cdot 10^{-9}$	$8.616 \cdot 10^{-8}$	$2.761 \cdot 10^{-8}$	$2.761 \cdot 10^{-8}$	$1.449 \cdot 10^{-7}$
$\mathtt{cdBIm}$	$-9.306 \cdot 10^{-16}$	$-9.306 \cdot 10^{-16}$	$-9.671 \cdot 10^{-8}$	$2.363 \cdot 10^{-16}$	$2.363 \cdot 10^{-16}$	$-2.116 \cdot 10^{-7}$
cdBRe	$-1.016 \cdot 10^{-16}$	$-1.016 \cdot 10^{-16}$	$-9.845 \cdot 10^{-8}$	$1.618 \cdot 10^{-16}$	$1.618 \cdot 10^{-16}$	$-1.855 \cdot 10^{-7}$
$\mathtt{cdHIm}$	$3.74 \cdot 10^{-17}$	$3.74 \cdot 10^{-17}$	$1.872 \cdot 10^{-7}$	$2.659 \cdot 10^{-16}$	$2.659 \cdot 10^{-16}$	$2.257 \cdot 10^{-7}$
cdHRe	$2.846 \cdot 10^{-17}$	$2.846 \cdot 10^{-17}$	$1.933 \cdot 10^{-6}$	$4.827 \cdot 10^{-16}$	$4.827 \cdot 10^{-16}$	$1.657 \cdot 10^{-7}$
$\mathtt{cdWIm}$	$-2.697 \cdot 10^{-15}$	$-2.697 \cdot 10^{-15}$	$2.225 \cdot 10^{-7}$	$3.715 \cdot 10^{-15}$	$3.715 \cdot 10^{-15}$	$2.692 \cdot 10^{-7}$
cdWRe	$1.748 \cdot 10^{-16}$	$1.748 \cdot 10^{-16}$	$2.288 \cdot 10^{-7}$	$2.209 \cdot 10^{-16}$	$2.209 \cdot 10^{-16}$	$2.716 \cdot 10^{-7}$
cuBIm	$-5.104 \cdot 10^{-17}$	$-5.104 \cdot 10^{-17}$	$-1.959 \cdot 10^{-8}$	$2.551 \cdot 10^{-17}$	$2.551 \cdot 10^{-17}$	$-2.352 \cdot 10^{-7}$
cuBRe	$-2.724 \cdot 10^{-16}$	$-2.724 \cdot 10^{-16}$	0	$2.185 \cdot 10^{-17}$	$2.185 \cdot 10^{-17}$	$-2.288 \cdot 10^{-7}$
$\mathtt{cuHIm}$	$-2.719 \cdot 10^{-18}$	$-2.719 \cdot 10^{-18}$	$2.207 \cdot 10^{-7}$	$1.171 \cdot 10^{-18}$	$1.171 \cdot 10^{-18}$	$2.561 \cdot 10^{-7}$
cuHRe	$-1.876 \cdot 10^{-15}$	$-1.876 \cdot 10^{-15}$	$2.132 \cdot 10^{-7}$	$9.458 \cdot 10^{-17}$	$9.458 \cdot 10^{-17}$	$1.797 \cdot 10^{-7}$
cuWIm	$-2.212 \cdot 10^{-17}$	$-2.212 \cdot 10^{-17}$	$1.808 \cdot 10^{-7}$	$3.459 \cdot 10^{-17}$	$3.459 \cdot 10^{-17}$	$2.313 \cdot 10^{-7}$
cuWRe	$-1.844 \cdot 10^{-15}$	$-1.844 \cdot 10^{-15}$	$2.169 \cdot 10^{-7}$	$9.164 \cdot 10^{-16}$	$9.164 \cdot 10^{-16}$	$2.619 \cdot 10^{-7}$
sm	0	0	0	$2.624 \cdot 10^{-7}$	$2.624 \cdot 10^{-7}$	0

## 1.23 $HW^+ \rightarrow u\bar{d}$

	interference			square	square		
	mod1	mod2	$1-{\tt mod2/mod1}$	$\verb mod1  & \verb mod2  & 1-\verb mod2  $	$^{\prime}$ mod1		
cHDD	$-3.018 \cdot 10^{-12}$	$-3.018 \cdot 10^{-12}$	$-9.941 \cdot 10^{-8}$	$3.342 \cdot 10^{-12}  3.342 \cdot 10^{-12} \qquad 0$			
cHW	0.01087	0.01087	$-2.76 \cdot 10^{-7}$	0.0517 $0.0517$ $-9.671$	$10^{-8}$		
cHWtil	$-1.127 \cdot 10^{-14}$	$-1.127 \cdot 10^{-14}$	$-5.128 \cdot 10^{-5}$	0.0634 $0.0634$ $-1.104$	$10^{-7}$		

сНј3	0.3422	0.3422	$-1.169 \cdot 10^{-7}$	1.628	1.628	$-6.143 \cdot 10^{-8}$
cHudIm	$3.735 \cdot 10^{-23}$	$3.735 \cdot 10^{-23}$	$-5.354 \cdot 10^{-8}$	$4.729 \cdot 10^{-20}$	$4.729 \cdot 10^{-20}$	0
cHudRe	$-2.344 \cdot 10^{-19}$	$-2.344 \cdot 10^{-19}$	0	$4.682 \cdot 10^{-20}$	$4.682 \cdot 10^{-20}$	0
$\mathtt{cdHIm}$	$-2.395 \cdot 10^{-13}$	$-2.395 \cdot 10^{-13}$	$-8.352 \cdot 10^{-8}$	$4.423 \cdot 10^{-11}$	$4.423 \cdot 10^{-11}$	0
cdHRe	$-6.375 \cdot 10^{-12}$	$-6.375 \cdot 10^{-12}$	$-1.098 \cdot 10^{-7}$	$4.398 \cdot 10^{-11}$	$4.398 \cdot 10^{-11}$	0
$\mathtt{cdWIm}$	$-7.02 \cdot 10^{-14}$	$-7.02 \cdot 10^{-14}$	$-1.14 \cdot 10^{-7}$	$1.144 \cdot 10^{-9}$	$1.144 \cdot 10^{-9}$	0
cdWRe	$-4.184 \cdot 10^{-11}$	$-4.184 \cdot 10^{-11}$	$-1.673 \cdot 10^{-7}$	$1.475 \cdot 10^{-9}$	$1.475 \cdot 10^{-9}$	$-6.781 \cdot 10^{-8}$
$\mathtt{cuHIm}$	$5.122 \cdot 10^{-14}$	$5.122 \cdot 10^{-14}$	$-5.858 \cdot 10^{-8}$	$9.631 \cdot 10^{-12}$	$9.631 \cdot 10^{-12}$	0
cuHRe	$-3.142 \cdot 10^{-12}$	$-3.142 \cdot 10^{-12}$	$-9.547 \cdot 10^{-8}$	$9.513 \cdot 10^{-12}$	$9.513 \cdot 10^{-12}$	0
cuWIm	$6.61 \cdot 10^{-16}$	$6.61 \cdot 10^{-16}$	$-3.026 \cdot 10^{-8}$	$3.155 \cdot 10^{-10}$	$3.155 \cdot 10^{-10}$	0
cuWRe	$-7.814 \cdot 10^{-12}$	$-7.814 \cdot 10^{-12}$	$-1.664 \cdot 10^{-7}$	$2.448 \cdot 10^{-10}$	$2.448 \cdot 10^{-10}$	0
sm	0	0	0	0.0229	0.0229	$-2.183 \cdot 10^{-7}$

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

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
cHDD	0.02149	0.02149	0	0.003166	0.003166	0
cHQ3	-1.589	-1.589	0	1.95	1.95	0
cHW	-0.06654	-0.06654	$-9.017 \cdot 10^{-8}$	0.082	0.082	$-1.098 \cdot 10^{-7}$
cHWtil	0.0002604	0.0002604	$-1.152 \cdot 10^{-7}$	0.07658	0.07658	$-1.045 \cdot 10^{-7}$
$\mathtt{cHtbIm}$	$-7.901 \cdot 10^{-6}$	$-7.901 \cdot 10^{-6}$	$-5.063 \cdot 10^{-8}$	0.2406	0.2406	0
cHtbRe	-0.04096	-0.04096	0	0.2142	0.2142	$-4.668 \cdot 10^{-8}$
$\mathtt{cbHIm}$	$-2.052 \cdot 10^{-6}$	$-2.052 \cdot 10^{-6}$	$2.437 \cdot 10^{-7}$	0.06295	0.06295	0
cbHRe	0.004612	0.004612	0	0.06294	0.06294	0
$\mathtt{cbWIm}$	$-2.95 \cdot 10^{-6}$	$-2.95 \cdot 10^{-6}$	$-1.017 \cdot 10^{-7}$	1.363	1.363	0
cbWRe	-0.007802	-0.007802	$-6.409 \cdot 10^{-8}$	1.363	1.363	0
$\mathtt{ctHIm}$	-0.002504	-0.002504	0	0.05362	0.05362	0
ctHRe	0.09548	0.09548	$2.095 \cdot 10^{-8}$	0.05204	0.05204	0

$\mathtt{ctWIm}$	$9.506 \cdot 10^{-5}$	$9.506 \cdot 10^{-5}$	$-6.312 \cdot 10^{-8}$	2.234	2.234	0
ctWRe	0.04608	0.04608	$2.17\cdot 10^{-8}$	0.8744	0.8744	$-1.144 \cdot 10^{-8}$
$\mathtt{sm}$	0	0	0	0.1017	0.1017	0

### 1.25 $HW^- \rightarrow \gamma e^- \bar{\nu}_e$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНВ	$-6.787 \cdot 10^{-9}$	$-6.787 \cdot 10^{-9}$	$4.42 \cdot 10^{-8}$	$4.789 \cdot 10^{-9}$	$4.789 \cdot 10^{-9}$	$1.462 \cdot 10^{-7}$		
cHBtil	$-3.341 \cdot 10^{-8}$	$-3.341 \cdot 10^{-8}$	0	$3.682 \cdot 10^{-9}$	$3.682 \cdot 10^{-9}$	$8.148 \cdot 10^{-8}$		
cHDD	$7.674 \cdot 10^{-20}$	$7.674 \cdot 10^{-20}$	$5.212 \cdot 10^{-7}$	$2.793 \cdot 10^{-20}$	$2.793 \cdot 10^{-20}$	$2.506 \cdot 10^{-7}$		
cHW	$-4.218 \cdot 10^{-8}$	$-4.218 \cdot 10^{-8}$	$2.371 \cdot 10^{-8}$	$2.289 \cdot 10^{-6}$	$2.289 \cdot 10^{-6}$	$1.31 \cdot 10^{-7}$		
cHWB	$1.156 \cdot 10^{-8}$	$1.156 \cdot 10^{-8}$	$-8.648 \cdot 10^{-8}$	$4.768 \cdot 10^{-8}$	$4.768 \cdot 10^{-8}$	$-1.888 \cdot 10^{-7}$		
cHWBtil	$2.998 \cdot 10^{-8}$	$2.998 \cdot 10^{-8}$	$-6.672 \cdot 10^{-8}$	$4.704 \cdot 10^{-8}$	$4.704 \cdot 10^{-8}$	$-2.126 \cdot 10^{-7}$		
cHWtil	$-9.488 \cdot 10^{-9}$	$-9.488 \cdot 10^{-9}$	$1.265 \cdot 10^{-7}$	$4.543 \cdot 10^{-6}$	$4.543 \cdot 10^{-6}$	$1.321 \cdot 10^{-7}$		
cH13	$2.319 \cdot 10^{-8}$	$2.319 \cdot 10^{-8}$	$1.294 \cdot 10^{-7}$	$4.117 \cdot 10^{-8}$	$4.117 \cdot 10^{-8}$	$2.186 \cdot 10^{-7}$		
cM	$2.21\cdot 10^{-8}$	$2.21\cdot 10^{-8}$	$4.524 \cdot 10^{-8}$	$9.261 \cdot 10^{-8}$	$9.261 \cdot 10^{-8}$	$1.08 \cdot 10^{-7}$		
cWtil	$-8.228 \cdot 10^{-10}$	$-8.228 \cdot 10^{-10}$	$1.215 \cdot 10^{-7}$	$9.261 \cdot 10^{-8}$	$9.261 \cdot 10^{-8}$	$1.08 \cdot 10^{-7}$		
ceBIm	$-2.698 \cdot 10^{-18}$	$-2.698 \cdot 10^{-18}$	$-3.706 \cdot 10^{-8}$	$3.743 \cdot 10^{-19}$	$3.743 \cdot 10^{-19}$	$-2.138 \cdot 10^{-7}$		
ceBRe	$-8.03 \cdot 10^{-19}$	$-8.03 \cdot 10^{-19}$	$-6.227 \cdot 10^{-8}$	$3.743 \cdot 10^{-19}$	$3.743 \cdot 10^{-19}$	$-2.138 \cdot 10^{-7}$		
$\mathtt{ceHIm}$	$-9.432 \cdot 10^{-20}$	$-9.432 \cdot 10^{-20}$	$7.422 \cdot 10^{-8}$	$3.127 \cdot 10^{-20}$	$3.127 \cdot 10^{-20}$	$1.599 \cdot 10^{-7}$		
ceHRe	$3.07 \cdot 10^{-19}$	$3.07 \cdot 10^{-19}$	$5.212 \cdot 10^{-7}$	$4.468 \cdot 10^{-19}$	$4.468 \cdot 10^{-19}$	$2.462 \cdot 10^{-7}$		
ceWIm	$5.767 \cdot 10^{-18}$	$5.767 \cdot 10^{-18}$	$1.908 \cdot 10^{-7}$	$1.606 \cdot 10^{-17}$	$1.606 \cdot 10^{-17}$	$2.491 \cdot 10^{-7}$		
ceWRe	$-1.478 \cdot 10^{-17}$	$-1.478 \cdot 10^{-17}$	$2.03 \cdot 10^{-7}$	$5.461 \cdot 10^{-18}$	$5.461 \cdot 10^{-18}$	$2.38 \cdot 10^{-7}$		
sm	0	0	0	$1.663 \cdot 10^{-8}$	$1.663 \cdot 10^{-8}$	$6.012 \cdot 10^{-8}$		

## 1.26 $HW^- \rightarrow \mu^- \bar{\nu}_{\mu}$

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	$-3.463 \cdot 10^{-10}$	$-3.463 \cdot 10^{-10}$	$-8.664 \cdot 10^{-8}$	$4.654 \cdot 10^{-10}$	$4.654 \cdot 10^{-10}$	0
cHW	0.0047	0.0047	$-2.128 \cdot 10^{-7}$	0.02235	0.02235	$-8.947 \cdot 10^{-8}$
cHWtil	$8.858 \cdot 10^{-13}$	$8.858 \cdot 10^{-13}$	$-1.016 \cdot 10^{-7}$	0.01731	0.01731	$-1.155 \cdot 10^{-7}$
cH13	0.1043	0.1043	$-9.59 \cdot 10^{-8}$	0.496	0.496	$-2.016 \cdot 10^{-8}$
$\mathtt{ceHIm}$	$4.087 \cdot 10^{-11}$	$4.087 \cdot 10^{-11}$	$-4.894 \cdot 10^{-8}$	$7.446 \cdot 10^{-9}$	$7.446 \cdot 10^{-9}$	0
ceHRe	$-1.385 \cdot 10^{-9}$	$-1.385 \cdot 10^{-9}$	$-7.22 \cdot 10^{-8}$	$7.446 \cdot 10^{-9}$	$7.446 \cdot 10^{-9}$	0
$\mathtt{ceWIm}$	$2.354 \cdot 10^{-11}$	$2.354 \cdot 10^{-11}$	$-1.274 \cdot 10^{-7}$	$3.897 \cdot 10^{-8}$	$3.897 \cdot 10^{-8}$	$-2.566 \cdot 10^{-8}$
ceWRe	$-9.13 \cdot 10^{-9}$	$-9.13 \cdot 10^{-9}$	$-1.643 \cdot 10^{-7}$	$3.145 \cdot 10^{-8}$	$3.145 \cdot 10^{-8}$	0
sm	0	0	0	0.00765	0.00765	$-2.222 \cdot 10^{-7}$

# 1.27 $H\gamma \rightarrow b\bar{b}$

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сНВ	$-2.469 \cdot 10^{-6}$	$-2.469 \cdot 10^{-6}$	$2.43 \cdot 10^{-7}$	0.006799	0.006799	$2.5\cdot 10^{-7}$	
cHBtil	$1.067 \cdot 10^{-9}$	$1.067 \cdot 10^{-9}$	$2.811 \cdot 10^{-7}$	0.005486	0.005486	$2.552 \cdot 10^{-7}$	
cHDD	$-7.67 \cdot 10^{-6}$	$-7.67 \cdot 10^{-6}$	$2.477 \cdot 10^{-7}$	$5.812 \cdot 10^{-8}$	$5.812 \cdot 10^{-8}$	$2.409 \cdot 10^{-7}$	
cHW	$-6.808 \cdot 10^{-6}$	$-6.808 \cdot 10^{-6}$	$2.497 \cdot 10^{-7}$	0.01205	0.01205	$2.49 \cdot 10^{-7}$	
cHWB	$1.937 \cdot 10^{-5}$	$1.937 \cdot 10^{-5}$	$-1.549 \cdot 10^{-7}$	0.01068	0.01068	$-2.808 \cdot 10^{-7}$	
cHWBtil	$1.623 \cdot 10^{-9}$	$1.623 \cdot 10^{-9}$	$-1.848 \cdot 10^{-7}$	0.008237	0.008237	$-2.671 \cdot 10^{-7}$	
cHWtil	$-1.067 \cdot 10^{-9}$	$-1.067 \cdot 10^{-9}$	$2.811 \cdot 10^{-7}$	0.0099	0.0099	$2.525 \cdot 10^{-7}$	
cbBIm	$-8.724 \cdot 10^{-20}$	$-8.738 \cdot 10^{-20}$	-0.001593	1.54	1.54	$-1.298 \cdot 10^{-7}$	
cbBRe	$-2.214 \cdot 10^{-6}$	$-2.214 \cdot 10^{-6}$	$4.517 \cdot 10^{-8}$	1.913	1.913	$-1.046 \cdot 10^{-7}$	
cbHIm	$2.711 \cdot 10^{-20}$	$-6.716 \cdot 10^{-26}$	1	0.0005306	0.0005306	$2.639 \cdot 10^{-7}$	
cbHRe	-0.0005904	-0.0005904	$2.541 \cdot 10^{-7}$	0.0007454	0.0007454	$2.415 \cdot 10^{-7}$	
cbWIm	$-6.006 \cdot 10^{-21}$	$-6.099 \cdot 10^{-21}$	-0.01542	0.4822	0.4822	$3.525 \cdot 10^{-7}$	
cbWRe	$1.477 \cdot 10^{-6}$	$1.477 \cdot 10^{-6}$	$2.708 \cdot 10^{-7}$	0.4822	0.4822	$3.525 \cdot 10^{-7}$	
sm	0	0	0	0.0001097	0.0001097	$1.823 \cdot 10^{-7}$	

## 1.28 $H\gamma \rightarrow c\bar{c}$

		ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	$-5.383 \cdot 10^{-7}$	$-5.383 \cdot 10^{-7}$	$2.415 \cdot 10^{-7}$	0.01881	0.01881	$2.658 \cdot 10^{-7}$
cHBtil	$3.022 \cdot 10^{-10}$	$3.022 \cdot 10^{-10}$	$2.647 \cdot 10^{-7}$	0.01992	0.01992	$2.51\cdot10^{-7}$
cHDD	$-1.455 \cdot 10^{-6}$	$-1.455 \cdot 10^{-6}$	$2.749 \cdot 10^{-7}$	$1.103 \cdot 10^{-8}$	$1.103 \cdot 10^{-8}$	$2.721 \cdot 10^{-7}$
cHW	$-4.268 \cdot 10^{-7}$	$-4.268 \cdot 10^{-7}$	$2.343 \cdot 10^{-7}$	0.01033	0.01033	$2.903 \cdot 10^{-7}$
cHWB	$4.167 \cdot 10^{-8}$	$4.167 \cdot 10^{-8}$	$-1.171 \cdot 10^{-5}$	0.01441	0.01441	0
cHWBtil	$6.14 \cdot 10^{-10}$	$6.14 \cdot 10^{-10}$	$-1.955 \cdot 10^{-7}$	0.01577	0.01577	$-6.342 \cdot 10^{-8}$
cHWtil	$-3.022 \cdot 10^{-10}$	$-3.022 \cdot 10^{-10}$	$2.647 \cdot 10^{-7}$	0.01065	0.01065	$2.816 \cdot 10^{-7}$
cuBIm	$7.845 \cdot 10^{-22}$	$7.84 \cdot 10^{-22}$	0.000692	$5.471 \cdot 10^{-5}$	$5.471 \cdot 10^{-5}$	$-1.097 \cdot 10^{-7}$
cuBRe	$9.178 \cdot 10^{-10}$	$9.178 \cdot 10^{-10}$	$7.627 \cdot 10^{-8}$	0.0001004	0.0001004	$-1.991 \cdot 10^{-7}$
cuHIm	$4.235 \cdot 10^{-22}$	$2.118 \cdot 10^{-22}$	0.5	$1.025 \cdot 10^{-7}$	$1.025 \cdot 10^{-7}$	$2.927 \cdot 10^{-7}$
cuHRe	$-3.811 \cdot 10^{-6}$	$-3.811 \cdot 10^{-6}$	$2.362 \cdot 10^{-7}$	$1.155 \cdot 10^{-7}$	$1.155 \cdot 10^{-7}$	$2.597 \cdot 10^{-7}$
cuWIm	$-4.524 \cdot 10^{-26}$	0	1	$3.193 \cdot 10^{-5}$	$3.193 \cdot 10^{-5}$	$3.759 \cdot 10^{-7}$
cuWRe	$5.067 \cdot 10^{-10}$	$5.067 \cdot 10^{-10}$	$2.961 \cdot 10^{-7}$	$3.061 \cdot 10^{-5}$	$3.061 \cdot 10^{-5}$	$3.594 \cdot 10^{-7}$
sm	0	0	0	$6.233 \cdot 10^{-5}$	$6.233 \cdot 10^{-5}$	$2.407 \cdot 10^{-7}$

# 1.29 $H\gamma \rightarrow d\bar{d}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
сНВ	$-1.709 \cdot 10^{-16}$	$-1.709 \cdot 10^{-16}$	$2.341 \cdot 10^{-7}$	0.00502	0.00502	$2.59 \cdot 10^{-7}$	
cHBtil	$-5.735 \cdot 10^{-15}$	$-5.735 \cdot 10^{-15}$	$2.441 \cdot 10^{-7}$	0.007568	0.007568	$2.379 \cdot 10^{-7}$	
cHDD	$-4.889 \cdot 10^{-12}$	$-4.889 \cdot 10^{-12}$	$2.455 \cdot 10^{-7}$	$3.705 \cdot 10^{-14}$	$3.705 \cdot 10^{-14}$	$2.429 \cdot 10^{-7}$	
cHW	$-4.946 \cdot 10^{-12}$	$-4.946 \cdot 10^{-12}$	$2.426 \cdot 10^{-7}$	0.01108	0.01108	$1.805 \cdot 10^{-7}$	
cHWB	$3.941 \cdot 10^{-12}$	$3.941 \cdot 10^{-12}$	$-6.091 \cdot 10^{-7}$	0.008889	0.008889	$-2.7\cdot10^{-7}$	
cHWBtil	$-2.706 \cdot 10^{-16}$	$-2.706 \cdot 10^{-16}$	$-1.847 \cdot 10^{-7}$	0.006351	0.006351	$-2.677 \cdot 10^{-7}$	

cHWtil	$5.735 \cdot 10^{-15}$	$5.735 \cdot 10^{-15}$	$2.441 \cdot 10^{-7}$	0.01366	0.01366	$2.197 \cdot 10^{-7}$
$\mathtt{cdBIm}$	$-1.987 \cdot 10^{-26}$	$-1.987 \cdot 10^{-26}$	$5.034 \cdot 10^{-8}$	$9.664 \cdot 10^{-10}$	$9.664 \cdot 10^{-10}$	$-1.035 \cdot 10^{-7}$
cdBRe	$-9.021 \cdot 10^{-20}$	$-9.021 \cdot 10^{-20}$	$7.76 \cdot 10^{-8}$	$1.285 \cdot 10^{-9}$	$1.285 \cdot 10^{-9}$	$-1.556 \cdot 10^{-7}$
$\mathtt{cdHIm}$	$4.039 \cdot 10^{-28}$	$-8.078 \cdot 10^{-28}$	3	$3.503 \cdot 10^{-13}$	$3.503 \cdot 10^{-13}$	$2.569 \cdot 10^{-7}$
cdHRe	$-1.142 \cdot 10^{-11}$	$-1.142 \cdot 10^{-11}$	$1.751 \cdot 10^{-7}$	$3.463 \cdot 10^{-13}$	$3.463 \cdot 10^{-13}$	$2.31 \cdot 10^{-7}$
$\mathtt{cdWIm}$	$-2.9 \cdot 10^{-27}$	$-2.9 \cdot 10^{-27}$	$3.103 \cdot 10^{-7}$	$2.483 \cdot 10^{-10}$	$2.483 \cdot 10^{-10}$	$3.625 \cdot 10^{-7}$
cdWRe	$4.98 \cdot 10^{-20}$	$4.98 \cdot 10^{-20}$	$3.012 \cdot 10^{-7}$	$3.917 \cdot 10^{-10}$	$3.917 \cdot 10^{-10}$	$3.574 \cdot 10^{-7}$
sm	0	0	0	$9.531 \cdot 10^{-11}$	$9.531 \cdot 10^{-11}$	$2.518 \cdot 10^{-7}$

# $1.30 \quad H\gamma \to e^+e^-$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНВ	$-1.077 \cdot 10^{-13}$	$-1.077 \cdot 10^{-13}$	$1.857 \cdot 10^{-7}$	0.01713	0.01713	$2.336 \cdot 10^{-7}$		
cHBtil	$8.06 \cdot 10^{-17}$	$8.06 \cdot 10^{-17}$	$2.481 \cdot 10^{-7}$	0.02324	0.02324	$2.581 \cdot 10^{-7}$		
cHDD	$-1.027 \cdot 10^{-13}$	$-1.027 \cdot 10^{-13}$	$1.947 \cdot 10^{-7}$	$7.786 \cdot 10^{-16}$	$7.786 \cdot 10^{-16}$	$2.44 \cdot 10^{-7}$		
cHW	$-1.798 \cdot 10^{-14}$	$-1.798 \cdot 10^{-14}$	$2.78 \cdot 10^{-7}$	0.003246	0.003246	$2.465 \cdot 10^{-7}$		
cHWB	$-1.733 \cdot 10^{-13}$	$-1.733 \cdot 10^{-13}$	$4.039 \cdot 10^{-7}$	0.005085	0.005085	$1.377 \cdot 10^{-7}$		
cHWBtil	$-2.915 \cdot 10^{-17}$	$-2.915 \cdot 10^{-17}$	$-1.715 \cdot 10^{-7}$	0.006972	0.006972	$1.147 \cdot 10^{-7}$		
cHWtil	$-8.06 \cdot 10^{-17}$	$-8.06 \cdot 10^{-17}$	$2.481 \cdot 10^{-7}$	0.004684	0.004684	$2.348 \cdot 10^{-7}$		
ceBIm	$-1.961 \cdot 10^{-28}$	$-1.961 \cdot 10^{-28}$	$5.1 \cdot 10^{-8}$	$6.592 \cdot 10^{-12}$	$6.592 \cdot 10^{-12}$	$-1.062 \cdot 10^{-7}$		
ceBRe	$4.843 \cdot 10^{-23}$	$4.843 \cdot 10^{-23}$	$8.259 \cdot 10^{-8}$	$6.592 \cdot 10^{-12}$	$6.592 \cdot 10^{-12}$	$-1.062 \cdot 10^{-7}$		
ceHIm	$1.515 \cdot 10^{-28}$	$1.262 \cdot 10^{-28}$	0.1667	$1.954 \cdot 10^{-14}$	$1.954 \cdot 10^{-14}$	$2.559 \cdot 10^{-7}$		
ceHRe	$-4.11 \cdot 10^{-13}$	$-4.11 \cdot 10^{-13}$	$2.433 \cdot 10^{-7}$	$1.246 \cdot 10^{-14}$	$1.246 \cdot 10^{-14}$	$2.408 \cdot 10^{-7}$		
ceWIm	$1.082 \cdot 10^{-28}$	$1.082 \cdot 10^{-28}$	$2.772 \cdot 10^{-7}$	$2.009 \cdot 10^{-12}$	$2.009 \cdot 10^{-12}$	$3.485 \cdot 10^{-7}$		
ceWRe	$-1.187 \cdot 10^{-23}$	$-1.187 \cdot 10^{-23}$	$2.528 \cdot 10^{-7}$	$1.281 \cdot 10^{-12}$	$1.281 \cdot 10^{-12}$	$3.904 \cdot 10^{-7}$		
sm	0	0	0	$5.401 \cdot 10^{-12}$	$5.401 \cdot 10^{-12}$	$2.407 \cdot 10^{-7}$		

# **1.31** $H\gamma \rightarrow t\bar{t}$

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHB	-0.0144	-0.0144	$2.084 \cdot 10^{-7}$	0.01876	0.01876	$2.665 \cdot 10^{-7}$
cHBtil	$-1.959 \cdot 10^{-5}$	$-1.959 \cdot 10^{-5}$	$2.552 \cdot 10^{-7}$	0.02055	0.02055	$2.433 \cdot 10^{-7}$
cHDD	-0.02018	-0.02018	$2.478 \cdot 10^{-7}$	0.0001529	0.0001529	$2.616 \cdot 10^{-7}$
cHW	-0.02823	-0.02823	$2.479 \cdot 10^{-7}$	0.01174	0.01174	$2.555 \cdot 10^{-7}$
cHWB	0.01657	0.01657	$-3.017 \cdot 10^{-7}$	0.01388	0.01388	0
cHWBtil	$-2.25 \cdot 10^{-6}$	$-2.25 \cdot 10^{-6}$	$-2.223 \cdot 10^{-7}$	0.01105	0.01105	$-9.048 \cdot 10^{-8}$
cHWtil	$1.959 \cdot 10^{-5}$	$1.959 \cdot 10^{-5}$	$2.552 \cdot 10^{-7}$	0.01049	0.01049	$2.861 \cdot 10^{-7}$
ctBIm	$-3.288 \cdot 10^{-17}$	$6.153 \cdot 10^{-18}$	1.187	1.862	1.862	$-1.074 \cdot 10^{-7}$
ctBRe	0.31	0.31	$6.452 \cdot 10^{-8}$	2.4	2.4	$-1.25 \cdot 10^{-7}$
$\mathtt{ctHIm}$	$1.306 \cdot 10^{-18}$	$-2.342 \cdot 10^{-19}$	1.179	0.002037	0.002037	$2.454 \cdot 10^{-7}$
ctHRe	-0.05036	-0.05036	$2.581 \cdot 10^{-7}$	0.001539	0.001539	$2.6 \cdot 10^{-7}$
$\mathtt{ctWIm}$	$3.109 \cdot 10^{-17}$	$-3.223 \cdot 10^{-17}$	2.037	0.5734	0.5734	$3.663 \cdot 10^{-7}$
ctWRe	0.1711	0.1711	$2.922 \cdot 10^{-7}$	0.7313	0.7313	$3.556 \cdot 10^{-7}$
sm	0	0	0	0.4122	0.4122	$2.426 \cdot 10^{-7}$

# **1.32** $Hz \to \mu^+ \mu^-$

	interference			square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
сНВ	0.0003052	0.0003052	$1.573 \cdot 10^{-6}$	$0.003181 \qquad 0.003181 \qquad 6.915 \cdot 10^{-7}$
cHBtil	$-4.122 \cdot 10^{-7}$	$-4.122 \cdot 10^{-7}$	$2.668 \cdot 10^{-7}$	$0.005055$ $0.005055$ $7.121 \cdot 10^{-7}$
cHDD	0.0003305	0.0003305	$-6.052 \cdot 10^{-8}$	$1.003 \cdot 10^{-5}$ $1.003 \cdot 10^{-5}$ 0
cHW	0.001262	0.001262	$-4.753 \cdot 10^{-7}$	$0.006571$ $0.006571$ $-2.283 \cdot 10^{-7}$
cHWB	0.001127	0.001127	$3.55\cdot10^{-7}$	$0.002498 \qquad 0.002498 \qquad 2.402 \cdot 10^{-7}$
cHWBtil	$2.749 \cdot 10^{-7}$	$2.749 \cdot 10^{-7}$	$-1.819 \cdot 10^{-7}$	$0.003502 \qquad 0.003502 \qquad 2.57 \cdot 10^{-7}$

cHWtil	$4.122 \cdot 10^{-7}$	$4.122 \cdot 10^{-7}$	$2.426 \cdot 10^{-7}$	0.01097	0.01097	$-2.735 \cdot 10^{-7}$
сНе	-0.01966	-0.01966	$3.561 \cdot 10^{-7}$	0.1534	0.1534	0
cHl1	0.04877	0.04877	$-3.076 \cdot 10^{-7}$	0.3336	0.3336	0
cHl3	0.05119	0.05119	$-3.125 \cdot 10^{-7}$	0.3502	0.3502	0
ceBIm	$-8.384 \cdot 10^{-12}$	$-8.384 \cdot 10^{-12}$	$1.789 \cdot 10^{-7}$	$4.832 \cdot 10^{-8}$	$4.832 \cdot 10^{-8}$	$3.518 \cdot 10^{-7}$
ceBRe	$-3.428 \cdot 10^{-10}$	$-3.428 \cdot 10^{-10}$	$-4.872 \cdot 10^{-6}$	$4.832 \cdot 10^{-8}$	$4.832 \cdot 10^{-8}$	$3.518 \cdot 10^{-7}$
ceHIm	$4.01 \cdot 10^{-15}$	$4.01 \cdot 10^{-15}$	$-5.063 \cdot 10^{-6}$	$7.63 \cdot 10^{-9}$	$7.63 \cdot 10^{-9}$	0
ceHRe	$1.174 \cdot 10^{-9}$	$1.174 \cdot 10^{-9}$	$2.555 \cdot 10^{-7}$	$7.472 \cdot 10^{-9}$	$7.472 \cdot 10^{-9}$	0
ceWIm	$-1.519 \cdot 10^{-11}$	$-1.519 \cdot 10^{-11}$	$-6.584 \cdot 10^{-8}$	$1.586 \cdot 10^{-7}$	$1.586 \cdot 10^{-7}$	$-1.261 \cdot 10^{-7}$
ceWRe	$-6.21 \cdot 10^{-10}$	$-6.21 \cdot 10^{-10}$	$-5.121 \cdot 10^{-6}$	$7.962 \cdot 10^{-8}$	$7.962 \cdot 10^{-8}$	$-1.13 \cdot 10^{-7}$
sm	0	0	0	0.0009842	0.0009842	$-5.08 \cdot 10^{-8}$

## 1.33 $Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	0.0008149	0.0008149	$3.559 \cdot 10^{-7}$	0.0006939	0.0006939	$7.062 \cdot 10^{-7}$	
cHBtil	$-1.446 \cdot 10^{-19}$	$-7.228 \cdot 10^{-20}$	0.5001	0.001183	0.001183	$6.761 \cdot 10^{-7}$	
cHDD	0.0002299	0.0002299	0	$6.968 \cdot 10^{-6}$	$6.968 \cdot 10^{-6}$	0	
cHW	0.002622	0.002622	$-1.144 \cdot 10^{-7}$	0.007325	0.007325	$-2.184 \cdot 10^{-7}$	
cHWB	0.002596	0.002596	$1.541 \cdot 10^{-7}$	0.003743	0.003743	$2.405 \cdot 10^{-7}$	
cHWBtil	$-2.823 \cdot 10^{-22}$	$-7.228 \cdot 10^{-20}$	-255	0.003653	0.003653	$2.464 \cdot 10^{-7}$	
cHWtil	$-2.892 \cdot 10^{-19}$	$1.412 \cdot 10^{-22}$	1	0.01274	0.01274	$-1.57 \cdot 10^{-7}$	
cHl1	-0.08455	-0.08455	0	0.3082	0.3082	0	
cHl3	0.08653	0.08653	0	0.3155	0.3155	0	
sm	0	0	0	0.001595	0.001595	0	

## 1.34 $Hz \rightarrow b\bar{b}$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
cHB	0.000887	0.000887	$4.059 \cdot 10^{-7}$	0.001087	0.001087	$7.359 \cdot 10^{-7}$		
cHBtil	$-2.834 \cdot 10^{-7}$	$-2.834 \cdot 10^{-7}$	$2.47 \cdot 10^{-7}$	0.001348	0.001348	$7.419 \cdot 10^{-7}$		
cHDD	0.0014	0.0014	$-7.14 \cdot 10^{-8}$	$9.759 \cdot 10^{-5}$	$9.759 \cdot 10^{-5}$	$-4.099 \cdot 10^{-8}$		
cHQ1	0.2284	0.2284	$-4.378 \cdot 10^{-8}$	0.9915	0.9915	0		
cHQ3	0.1933	0.1933	$-5.172 \cdot 10^{-8}$	0.8399	0.8399	0		
cHW	0.006325	0.006325	$-1.739 \cdot 10^{-7}$	0.02101	0.02101	$-2.38 \cdot 10^{-7}$		
cHWB	0.004492	0.004492	$8.904 \cdot 10^{-8}$	0.004383	0.004383	$2.51 \cdot 10^{-7}$		
cHWBtil	$-1.879 \cdot 10^{-7}$	$-1.879 \cdot 10^{-7}$	$-1.596 \cdot 10^{-7}$	0.004615	0.004615	$2.6 \cdot 10^{-7}$		
cHWtil	$2.936 \cdot 10^{-7}$	$2.936 \cdot 10^{-7}$	$2.384 \cdot 10^{-7}$	0.02619	0.02619	$-2.291 \cdot 10^{-7}$		
cHbq	-0.02812	-0.02812	$3.557 \cdot 10^{-7}$	0.6871	0.6871	0		
cbBIm	$-9.266 \cdot 10^{-7}$	$-9.266 \cdot 10^{-7}$	$1.727 \cdot 10^{-7}$	0.4545	0.4545	$3.74 \cdot 10^{-7}$		
cbBRe	-0.0006766	-0.0006766	$1.478 \cdot 10^{-8}$	0.02436	0.02436	$3.284 \cdot 10^{-7}$		
$\mathtt{cbHIm}$	$3.538 \cdot 10^{-9}$	$3.538 \cdot 10^{-9}$	$-1.413 \cdot 10^{-7}$	0.0618	0.0618	0		
cbHRe	$-4.445 \cdot 10^{-5}$	$-4.445 \cdot 10^{-5}$	$-2.947 \cdot 10^{-6}$	0.0612	0.0612	0		
${\tt cbWIm}$	$4.161 \cdot 10^{-6}$	$4.161 \cdot 10^{-6}$	$-7.209 \cdot 10^{-8}$	1.009	1.009	$-9.912 \cdot 10^{-8}$		
cbWRe	-0.001269	-0.001269	$-2.363 \cdot 10^{-7}$	1.009	1.009	$-9.912 \cdot 10^{-8}$		
sm	0	0	0	0.009572	0.009572	$-1.149 \cdot 10^{-7}$		

### **1.35** $Hz \rightarrow s\bar{s}$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНВ	0.001334	0.001334	$3.747 \cdot 10^{-7}$	0.001618	0.001618	$7.417 \cdot 10^{-7}$		
cHBtil	$-2.917 \cdot 10^{-7}$	$-2.917 \cdot 10^{-7}$	$2.4 \cdot 10^{-7}$	0.001362	0.001362	$6.61 \cdot 10^{-7}$		
cHDD	0.001718	0.001718	$-1.164 \cdot 10^{-7}$	$5.211 \cdot 10^{-5}$	$5.211 \cdot 10^{-5}$	$-9.595 \cdot 10^{-8}$		
cHW	0.006009	0.006009	$-1.831 \cdot 10^{-7}$	0.01985	0.01985	$-2.518 \cdot 10^{-7}$		
cHWB	0.004427	0.004427	$9.035 \cdot 10^{-8}$	0.003716	0.003716	$2.691 \cdot 10^{-7}$		

cHWBtil	$2.624 \cdot 10^{-7}$	$2.624 \cdot 10^{-7}$	$-1.905 \cdot 10^{-7}$	0.005675	0.005675	$2.643 \cdot 10^{-7}$
cHWtil	$2.917 \cdot 10^{-7}$	$2.917 \cdot 10^{-7}$	$2.743 \cdot 10^{-7}$	0.02646	0.02646	$-2.268 \cdot 10^{-7}$
cHd	-0.01615	-0.01615	$3.096 \cdot 10^{-7}$	0.3781	0.3781	0
cHj1	0.2367	0.2367	$-8.45 \cdot 10^{-8}$	1.022	1.022	0
сНј3	0.167	0.167	$-1.197 \cdot 10^{-7}$	0.7213	0.7213	0
cdBIm	$7.673 \cdot 10^{-12}$	$7.673 \cdot 10^{-12}$	$1.694 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$3.735 \cdot 10^{-7}$
cdBRe	$-8.345 \cdot 10^{-9}$	$-8.345 \cdot 10^{-9}$	$1.198 \cdot 10^{-8}$	$1.376 \cdot 10^{-7}$	$1.376 \cdot 10^{-7}$	$3.634 \cdot 10^{-7}$
$\mathtt{cdHIm}$	$-1.317 \cdot 10^{-13}$	$-1.317 \cdot 10^{-13}$	$-1.518 \cdot 10^{-7}$	$1.835 \cdot 10^{-8}$	$1.835 \cdot 10^{-8}$	$-5.449 \cdot 10^{-8}$
cdHRe	$-1.907 \cdot 10^{-8}$	$-1.907 \cdot 10^{-8}$	$-1.574 \cdot 10^{-7}$	$1.804 \cdot 10^{-8}$	$1.804 \cdot 10^{-8}$	0
cdWIm	$4.709 \cdot 10^{-11}$	$4.709 \cdot 10^{-11}$	$-6.371 \cdot 10^{-8}$	$3.032 \cdot 10^{-7}$	$3.032 \cdot 10^{-7}$	$-9.894 \cdot 10^{-8}$
cdWRe	$-1.512 \cdot 10^{-8}$	$-1.512 \cdot 10^{-8}$	$-1.985 \cdot 10^{-7}$	$4.514 \cdot 10^{-7}$	$4.514 \cdot 10^{-7}$	$-1.108 \cdot 10^{-7}$
$\mathtt{sm}$	0	0	0	0.005243	0.005243	$-9.537 \cdot 10^{-8}$

# **1.36** $Hz \rightarrow t\bar{t}$

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
сНВ	-0.01371	-0.01371	$5.105 \cdot 10^{-7}$	0.005496	0.005496	$7.096 \cdot 10^{-7}$
cHBtil	$-6.849 \cdot 10^{-7}$	$-6.849 \cdot 10^{-7}$	$-9.637 \cdot 10^{-7}$	0.004914	0.004914	$7.123 \cdot 10^{-7}$
cHDD	1.008	1.008	0	0.09983	0.09983	0
cHQ1	2.025	2.025	0	0.774	0.774	0
cHQ3	-1.582	-1.582	0	0.2893	0.2893	0
cHW	-0.0983	-0.0983	$-2.136 \cdot 10^{-7}$	0.03632	0.03632	$-2.203 \cdot 10^{-7}$
cHWB	1.256	1.256	$7.964 \cdot 10^{-8}$	0.08703	0.08703	$2.413 \cdot 10^{-7}$
cHWBtil	$5.449 \cdot 10^{-5}$	$5.449 \cdot 10^{-5}$	$-1.89 \cdot 10^{-6}$	0.007277	0.007277	$2.474 \cdot 10^{-7}$
cHWtil	$-6.732 \cdot 10^{-6}$	$-6.732 \cdot 10^{-6}$	$-5.496 \cdot 10^{-7}$	0.02713	0.02713	$-2.212 \cdot 10^{-7}$
cHt	-2.226	-2.226	0	1.351	1.351	0
$\mathtt{ctBIm}$	$4.453 \cdot 10^{-6}$	$4.453 \cdot 10^{-6}$	$1.797 \cdot 10^{-7}$	0.3779	0.3779	$3.705 \cdot 10^{-7}$
ctBRe	-0.02135	-0.02135	$-3.746 \cdot 10^{-7}$	0.8205	0.8205	$3.656 \cdot 10^{-7}$

$\mathtt{ctHIm}$	-0.0002125	-0.0002125	$-6.118 \cdot 10^{-7}$	0.06737	0.06737	0
ctHRe	-0.1656	-0.1656	$-1.812 \cdot 10^{-7}$	0.04417	0.04417	$-2.264 \cdot 10^{-8}$
$\mathtt{ctWIm}$	-0.002388	-0.002388	$-4.188 \cdot 10^{-8}$	0.8323	0.8323	$-1.081 \cdot 10^{-7}$
ctWRe	0.03868	0.03868	$-6.463 \cdot 10^{-7}$	2.693	2.693	$-1.114 \cdot 10^{-7}$
sm	0	0	0	11.31	11.31	$-8.841 \cdot 10^{-8}$

### 1.37 $Hz \rightarrow u\bar{u}$

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	0.0006823	0.0006823	$1.319 \cdot 10^{-6}$	0.005723	0.005723	$7.165 \cdot 10^{-7}$
cHBtil	$-9.866 \cdot 10^{-7}$	$-9.866 \cdot 10^{-7}$	$2.433 \cdot 10^{-7}$	0.006724	0.006724	$7.139 \cdot 10^{-7}$
cHDD	0.001364	0.001364	$-1.466 \cdot 10^{-7}$	$4.135 \cdot 10^{-5}$	$4.135 \cdot 10^{-5}$	$-1.451 \cdot 10^{-7}$
cHW	0.006308	0.006308	$-2.695 \cdot 10^{-7}$	0.0255	0.0255	$-2.353 \cdot 10^{-7}$
cHWB	0.003187	0.003187	$1.569 \cdot 10^{-7}$	0.003579	0.003579	$2.515 \cdot 10^{-7}$
cHWBtil	$4.187 \cdot 10^{-7}$	$4.187 \cdot 10^{-7}$	$-1.911 \cdot 10^{-7}$	0.004811	0.004811	$2.494 \cdot 10^{-7}$
cHWtil	$9.866 \cdot 10^{-7}$	$9.866 \cdot 10^{-7}$	$2.534 \cdot 10^{-7}$	0.03871	0.03871	$-2.067 \cdot 10^{-7}$
cHj1	-0.1978	-0.1978	$-2.022 \cdot 10^{-7}$	1.047	1.047	0
сНј3	0.02048	0.02048	$-1.465 \cdot 10^{-7}$	0.1084	0.1084	0
cHu	0.009261	0.009261	$3.563 \cdot 10^{-7}$	0.1084	0.1084	0
cuBIm	$1.598 \cdot 10^{-14}$	$1.598 \cdot 10^{-14}$	$1.877 \cdot 10^{-7}$	$4.252 \cdot 10^{-11}$	$4.252 \cdot 10^{-11}$	$3.528 \cdot 10^{-7}$
cuBRe	$2.466 \cdot 10^{-12}$	$2.466 \cdot 10^{-12}$	$-4.056 \cdot 10^{-7}$	$4.249 \cdot 10^{-12}$	$4.249 \cdot 10^{-12}$	$3.765 \cdot 10^{-7}$
cuHIm	$9.185 \cdot 10^{-18}$	$9.185 \cdot 10^{-18}$	$-5.879 \cdot 10^{-7}$	$9.406 \cdot 10^{-12}$	$9.406 \cdot 10^{-12}$	$-1.063 \cdot 10^{-8}$
cuHRe	$-9.573 \cdot 10^{-12}$	$-9.573 \cdot 10^{-12}$	$-2.612 \cdot 10^{-7}$	$9.708 \cdot 10^{-12}$	$9.708 \cdot 10^{-12}$	$-1.03 \cdot 10^{-8}$
cuWIm	$-2.364 \cdot 10^{-14}$	$-2.364 \cdot 10^{-14}$	$-8.461 \cdot 10^{-8}$	$1.743 \cdot 10^{-10}$	$1.743 \cdot 10^{-10}$	$-5.736 \cdot 10^{-8}$
cuWRe	$-4.467 \cdot 10^{-12}$	$-4.467 \cdot 10^{-12}$	$-6.269 \cdot 10^{-7}$	$1.394 \cdot 10^{-11}$	$1.394 \cdot 10^{-11}$	$-7.172 \cdot 10^{-8}$
sm	0	0	0	0.006691	0.006691	$-1.494 \cdot 10^{-7}$

### 1.38 $W^+W^- \rightarrow Hb\bar{b}$

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	0.009174	0.009174	$-7.63 \cdot 10^{-8}$	0.0005381	0.0005381	0
сНВ	$-2.292 \cdot 10^{-8}$	$-2.292 \cdot 10^{-8}$	$2.618 \cdot 10^{-7}$	$2.828 \cdot 10^{-10}$	$2.828 \cdot 10^{-10}$	$7.073 \cdot 10^{-7}$
cHBtil	$-2.638 \cdot 10^{-10}$	$-2.638 \cdot 10^{-10}$	$3.411 \cdot 10^{-7}$	$4.623 \cdot 10^{-12}$	$4.623 \cdot 10^{-12}$	$7.138 \cdot 10^{-7}$
cHDD	$-1.429 \cdot 10^{-7}$	$-1.429 \cdot 10^{-7}$	$-2.8 \cdot 10^{-7}$	$1.806 \cdot 10^{-9}$	$1.806 \cdot 10^{-9}$	$-5.537 \cdot 10^{-8}$
cHQ1	0.0005381	0.0005381	$-2.973 \cdot 10^{-7}$	$1.922 \cdot 10^{-5}$	$1.922 \cdot 10^{-5}$	$-2.602 \cdot 10^{-7}$
cHQ3	$-5.848 \cdot 10^{-6}$	$-5.848 \cdot 10^{-6}$	$-6.839 \cdot 10^{-8}$	$3.192 \cdot 10^{-6}$	$3.192 \cdot 10^{-6}$	$-9.399 \cdot 10^{-8}$
cHW	0.0007328	0.0007328	$-5.459 \cdot 10^{-8}$	0.008353	0.008353	$-1.197 \cdot 10^{-8}$
cHWB	$-5.442 \cdot 10^{-7}$	$-5.442 \cdot 10^{-7}$	0	$5.249 \cdot 10^{-8}$	$5.249 \cdot 10^{-8}$	$3.048 \cdot 10^{-7}$
cHWBtil	$1.131 \cdot 10^{-6}$	$1.131 \cdot 10^{-6}$	0	$6.827 \cdot 10^{-7}$	$6.827 \cdot 10^{-7}$	$3.076 \cdot 10^{-7}$
cHWtil	$-3.027 \cdot 10^{-8}$	$-3.027 \cdot 10^{-8}$	$-1.322 \cdot 10^{-7}$	$2.132 \cdot 10^{-8}$	$2.132 \cdot 10^{-8}$	$-9.382 \cdot 10^{-8}$
cHbq	$-2.91 \cdot 10^{-7}$	$-2.91 \cdot 10^{-7}$	$1.031 \cdot 10^{-7}$	$1.379 \cdot 10^{-7}$	$1.379 \cdot 10^{-7}$	$-2.901 \cdot 10^{-7}$
cHtbIm	$3.518 \cdot 10^{-5}$	$3.518 \cdot 10^{-5}$	$-2.842 \cdot 10^{-8}$	$2.888 \cdot 10^{-6}$	$2.888 \cdot 10^{-6}$	$3.462 \cdot 10^{-8}$
cHtbRe	$-1.383 \cdot 10^{-7}$	$-1.383 \cdot 10^{-7}$	$-7.232 \cdot 10^{-8}$	$8.616 \cdot 10^{-7}$	$8.616 \cdot 10^{-7}$	$1.161 \cdot 10^{-8}$
cW	-0.0001191	-0.0001191	$-2.52 \cdot 10^{-7}$	$4.264 \cdot 10^{-5}$	$4.264 \cdot 10^{-5}$	$-2.345 \cdot 10^{-7}$
cWtil	$8.183 \cdot 10^{-5}$	$8.183 \cdot 10^{-5}$	$-2.811 \cdot 10^{-7}$	$4.265 \cdot 10^{-5}$	$4.265 \cdot 10^{-5}$	$-2.345 \cdot 10^{-7}$
cbBIm	$-1.519 \cdot 10^{-6}$	$-1.519 \cdot 10^{-6}$	$6.585 \cdot 10^{-8}$	$5.326 \cdot 10^{-6}$	$5.326 \cdot 10^{-6}$	$2.065 \cdot 10^{-7}$
cbBRe	$1.283 \cdot 10^{-8}$	$1.283 \cdot 10^{-8}$	$7.791 \cdot 10^{-8}$	$1.074 \cdot 10^{-8}$	$1.074 \cdot 10^{-8}$	$3.723 \cdot 10^{-7}$
$\mathtt{cbHIm}$	$-5.908 \cdot 10^{-9}$	$-5.908 \cdot 10^{-9}$	$-6.77 \cdot 10^{-8}$	$1.44 \cdot 10^{-7}$	$1.44 \cdot 10^{-7}$	0
cbHRe	$-7.565 \cdot 10^{-9}$	$-7.565 \cdot 10^{-9}$	$-3.965 \cdot 10^{-8}$	$4.598 \cdot 10^{-8}$	$4.598 \cdot 10^{-8}$	$4.35 \cdot 10^{-8}$
$\mathtt{cbWIm}$	$-3.205 \cdot 10^{-7}$	$-3.205 \cdot 10^{-7}$	$-2.184 \cdot 10^{-7}$	$2.56 \cdot 10^{-6}$	$2.56 \cdot 10^{-6}$	$-1.563 \cdot 10^{-7}$
cbWRe	$-2.454 \cdot 10^{-7}$	$-2.454 \cdot 10^{-7}$	$-4.889 \cdot 10^{-7}$	$2.553 \cdot 10^{-6}$	$2.553 \cdot 10^{-6}$	$-1.567 \cdot 10^{-7}$
$\mathtt{ctHIm}$	$3.321 \cdot 10^{-7}$	$3.321 \cdot 10^{-7}$	$-9.034 \cdot 10^{-8}$	$1.331 \cdot 10^{-8}$	$1.331 \cdot 10^{-8}$	0
ctHRe	$9.427 \cdot 10^{-7}$	$9.427 \cdot 10^{-7}$	$-2.016 \cdot 10^{-7}$	$2.287 \cdot 10^{-8}$	$2.287 \cdot 10^{-8}$	$-4.372 \cdot 10^{-8}$
$\mathtt{ctWIm}$	$2.293 \cdot 10^{-6}$	$2.293 \cdot 10^{-6}$	$-1.308 \cdot 10^{-7}$	$9.262 \cdot 10^{-6}$	$9.262 \cdot 10^{-6}$	0
ctWRe	$9.109 \cdot 10^{-7}$	$9.109 \cdot 10^{-7}$	$3.293 \cdot 10^{-8}$	$1.82 \cdot 10^{-6}$	$1.82 \cdot 10^{-6}$	$5.494 \cdot 10^{-8}$
sm	0	0	0	$3.199 \cdot 10^{-5}$	$3.199 \cdot 10^{-5}$	$-3.126 \cdot 10^{-7}$

### 1.39 $W^+W^- \rightarrow Hc\bar{c}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$1.718 \cdot 10^{-11}$	$1.718 \cdot 10^{-11}$	$-2.329 \cdot 10^{-7}$	$4.444 \cdot 10^{-11}$	$4.444 \cdot 10^{-11}$	0	
сНВ	$8.942 \cdot 10^{-9}$	$8.942 \cdot 10^{-9}$	$2.125 \cdot 10^{-7}$	$6.957 \cdot 10^{-10}$	$6.957 \cdot 10^{-10}$	$7.044 \cdot 10^{-7}$	
cHBtil	$3.53 \cdot 10^{-12}$	$3.53 \cdot 10^{-12}$	$6.034 \cdot 10^{-6}$	$6.011 \cdot 10^{-12}$	$6.011 \cdot 10^{-12}$	$6.988 \cdot 10^{-7}$	
cHDD	$-1.217 \cdot 10^{-7}$	$-1.217 \cdot 10^{-7}$	$-2.465 \cdot 10^{-7}$	$3.99 \cdot 10^{-9}$	$3.99 \cdot 10^{-9}$	$-1.504 \cdot 10^{-7}$	
cHW	$-1.458 \cdot 10^{-7}$	$-1.458 \cdot 10^{-7}$	$-2.743 \cdot 10^{-7}$	$8.663 \cdot 10^{-8}$	$8.663 \cdot 10^{-8}$	$-2.078 \cdot 10^{-7}$	
cHWB	$-8.956 \cdot 10^{-8}$	$-8.956 \cdot 10^{-8}$	$-2.122 \cdot 10^{-7}$	$9.07 \cdot 10^{-8}$	$9.07 \cdot 10^{-8}$	$3.749 \cdot 10^{-7}$	
cHWBtil	$-4.212 \cdot 10^{-7}$	$-4.212 \cdot 10^{-7}$	$9.497 \cdot 10^{-8}$	$2.836 \cdot 10^{-7}$	$2.836 \cdot 10^{-7}$	$3.526 \cdot 10^{-7}$	
cHWtil	$-3.589 \cdot 10^{-9}$	$-3.589 \cdot 10^{-9}$	$-3.344 \cdot 10^{-7}$	$2.046 \cdot 10^{-9}$	$2.046 \cdot 10^{-9}$	$-1.466 \cdot 10^{-7}$	
cHj1	$-2.049 \cdot 10^{-7}$	$-2.049 \cdot 10^{-7}$	$-1.952 \cdot 10^{-7}$	$1.449 \cdot 10^{-7}$	$1.449 \cdot 10^{-7}$	$-6.901 \cdot 10^{-8}$	
cHj3	$-5.853 \cdot 10^{-7}$	$-5.853 \cdot 10^{-7}$	$-1.538 \cdot 10^{-7}$	$8.837 \cdot 10^{-7}$	$8.837 \cdot 10^{-7}$	$-6.79 \cdot 10^{-8}$	
cHu	$7.081 \cdot 10^{-8}$	$7.081 \cdot 10^{-8}$	$2.966 \cdot 10^{-7}$	$5.759 \cdot 10^{-7}$	$5.759 \cdot 10^{-7}$	$-6.945 \cdot 10^{-8}$	
$\mathtt{cHudIm}$	$2.049 \cdot 10^{-18}$	$2.049 \cdot 10^{-18}$	$-2.44 \cdot 10^{-7}$	$9.703 \cdot 10^{-24}$	$9.703 \cdot 10^{-24}$	$1.031 \cdot 10^{-8}$	
cHudRe	$3.77 \cdot 10^{-17}$	$3.77 \cdot 10^{-17}$	$-1.061 \cdot 10^{-7}$	$6.437 \cdot 10^{-24}$	$6.437 \cdot 10^{-24}$	0	
cW	$-2.125 \cdot 10^{-7}$	$-2.125 \cdot 10^{-7}$	$-3.294 \cdot 10^{-7}$	$6.083 \cdot 10^{-7}$	$6.083 \cdot 10^{-7}$	$-2.137 \cdot 10^{-7}$	
cWtil	$-2.523 \cdot 10^{-7}$	$-2.523 \cdot 10^{-7}$	$-2.774 \cdot 10^{-7}$	$6.097 \cdot 10^{-7}$	$6.097 \cdot 10^{-7}$	$-2.296 \cdot 10^{-7}$	
$\mathtt{cdHIm}$	$-3.375 \cdot 10^{-14}$	$-3.375 \cdot 10^{-14}$	$4.74 \cdot 10^{-7}$	$2.654 \cdot 10^{-20}$	$2.654 \cdot 10^{-20}$	$-7.536 \cdot 10^{-8}$	
cdHRe	$7.904 \cdot 10^{-14}$	$7.904 \cdot 10^{-14}$	$-1.265 \cdot 10^{-7}$	$2.45 \cdot 10^{-21}$	$2.45 \cdot 10^{-21}$	$-4.082 \cdot 10^{-8}$	
$\mathtt{cdWIm}$	$-5.919 \cdot 10^{-15}$	$-5.919 \cdot 10^{-15}$	$-2.703 \cdot 10^{-7}$	$2.95 \cdot 10^{-19}$	$2.95 \cdot 10^{-19}$	0	
cdWRe	$-1.487 \cdot 10^{-13}$	$-1.487 \cdot 10^{-13}$	$-1.345 \cdot 10^{-7}$	$4.957 \cdot 10^{-19}$	$4.957 \cdot 10^{-19}$	0	
cuBIm	$1.83 \cdot 10^{-10}$	$1.83 \cdot 10^{-10}$	$-5.465 \cdot 10^{-8}$	$8.9 \cdot 10^{-13}$	$8.9 \cdot 10^{-13}$	$1.461 \cdot 10^{-7}$	
cuBRe	$-8.618 \cdot 10^{-12}$	$-8.618 \cdot 10^{-12}$	$3.481 \cdot 10^{-8}$	$3.226 \cdot 10^{-13}$	$3.226 \cdot 10^{-13}$	$2.79 \cdot 10^{-7}$	
cuHIm	$-3.921 \cdot 10^{-12}$	$-3.921 \cdot 10^{-12}$	$-1.275 \cdot 10^{-7}$	$2.152 \cdot 10^{-12}$	$2.152 \cdot 10^{-12}$	$4.647 \cdot 10^{-8}$	
cuHRe	$-1.493 \cdot 10^{-11}$	$-1.493 \cdot 10^{-11}$	$-1.339 \cdot 10^{-7}$	$3.518 \cdot 10^{-12}$	$3.518 \cdot 10^{-12}$	$5.685 \cdot 10^{-8}$	
cuWIm	$1.106 \cdot 10^{-10}$	$1.106 \cdot 10^{-10}$	$-2.712 \cdot 10^{-7}$	$1.684 \cdot 10^{-10}$	$1.684 \cdot 10^{-10}$	$-1.187 \cdot 10^{-7}$	
cuWRe	$-1.042 \cdot 10^{-11}$	$-1.042 \cdot 10^{-11}$	$-1.919 \cdot 10^{-7}$	$2.071 \cdot 10^{-10}$	$2.071 \cdot 10^{-10}$	$-9.658 \cdot 10^{-8}$	
sm	0	0	0	$6.903 \cdot 10^{-5}$	$6.903 \cdot 10^{-5}$	$-2.897 \cdot 10^{-7}$	

### 1.40 $W^+W^- \rightarrow Hd\bar{d}$

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$-8.66 \cdot 10^{-15}$	$-8.66 \cdot 10^{-15}$	$-8.083 \cdot 10^{-8}$	$1.332 \cdot 10^{-15}$	$1.332 \cdot 10^{-15}$	0
сНВ	$-7.837 \cdot 10^{-9}$	$-7.837 \cdot 10^{-9}$	$1.659 \cdot 10^{-7}$	$8.559 \cdot 10^{-11}$	$8.559 \cdot 10^{-11}$	$6.893 \cdot 10^{-7}$
cHBtil	$9.083 \cdot 10^{-9}$	$9.083 \cdot 10^{-9}$	$4.294 \cdot 10^{-7}$	$2.063 \cdot 10^{-10}$	$2.063 \cdot 10^{-10}$	$6.786 \cdot 10^{-7}$
cHDD	$-1.29 \cdot 10^{-5}$	$-1.29 \cdot 10^{-5}$	$-7.749 \cdot 10^{-8}$	$3.4 \cdot 10^{-7}$	$3.4 \cdot 10^{-7}$	$-1.177 \cdot 10^{-7}$
cHW	$-1.289 \cdot 10^{-6}$	$-1.289 \cdot 10^{-6}$	$-2.328 \cdot 10^{-7}$	$8.709 \cdot 10^{-7}$	$8.709 \cdot 10^{-7}$	$-1.722 \cdot 10^{-7}$
cHWB	$-1.388 \cdot 10^{-6}$	$-1.388 \cdot 10^{-6}$	$-2.162 \cdot 10^{-6}$	$1.185 \cdot 10^{-6}$	$1.185 \cdot 10^{-6}$	$1.687 \cdot 10^{-7}$
cHWBtil	$-5.136 \cdot 10^{-8}$	$-5.136 \cdot 10^{-8}$	$1.168 \cdot 10^{-7}$	$3.931 \cdot 10^{-8}$	$3.931 \cdot 10^{-8}$	$3.561 \cdot 10^{-7}$
cHWtil	$-4.453 \cdot 10^{-7}$	$-4.453 \cdot 10^{-7}$	$-4.042 \cdot 10^{-7}$	$1.135 \cdot 10^{-5}$	$1.135 \cdot 10^{-5}$	$-1.763 \cdot 10^{-7}$
cHd	$-9.513 \cdot 10^{-8}$	$-9.513 \cdot 10^{-8}$	$2.102 \cdot 10^{-7}$	$3.952 \cdot 10^{-7}$	$3.952 \cdot 10^{-7}$	$-1.518 \cdot 10^{-7}$
cHj1	0.0001959	0.0001959	$-1.531 \cdot 10^{-7}$	$2.576 \cdot 10^{-5}$	$2.576 \cdot 10^{-5}$	$-1.165 \cdot 10^{-7}$
сНј3	$1.01\cdot 10^{-5}$	$1.01\cdot 10^{-5}$	$-3.96 \cdot 10^{-7}$	$2.956 \cdot 10^{-6}$	$2.956 \cdot 10^{-6}$	$-1.353 \cdot 10^{-7}$
cHudIm	$-1.726 \cdot 10^{-27}$	$-1.726 \cdot 10^{-27}$	$-1.159 \cdot 10^{-7}$	$5.479 \cdot 10^{-36}$	$5.479 \cdot 10^{-36}$	$1.825 \cdot 10^{-8}$
cHudRe	$-6.602 \cdot 10^{-24}$	$-6.602 \cdot 10^{-24}$	$1.969 \cdot 10^{-7}$	$1.246 \cdot 10^{-34}$	$1.246 \cdot 10^{-34}$	0
cW	$4.163 \cdot 10^{-6}$	$4.163 \cdot 10^{-6}$	$-2.162 \cdot 10^{-7}$	$2.548 \cdot 10^{-6}$	$2.548 \cdot 10^{-6}$	$-1.963 \cdot 10^{-7}$
cWtil	$-1.955 \cdot 10^{-6}$	$-1.955 \cdot 10^{-6}$	$-2.558 \cdot 10^{-7}$	$2.549 \cdot 10^{-6}$	$2.549 \cdot 10^{-6}$	$-1.961 \cdot 10^{-7}$
cdBIm	$5.078 \cdot 10^{-15}$	$5.078 \cdot 10^{-15}$	$-7.877 \cdot 10^{-8}$	$1.656 \cdot 10^{-15}$	$1.656 \cdot 10^{-15}$	$1.811 \cdot 10^{-7}$
cdBRe	$1.201 \cdot 10^{-16}$	$1.201 \cdot 10^{-16}$	0	$1.399 \cdot 10^{-18}$	$1.399 \cdot 10^{-18}$	$7.15 \cdot 10^{-8}$
$\mathtt{cdHIm}$	$3.076 \cdot 10^{-16}$	$3.076 \cdot 10^{-16}$	$-2.926 \cdot 10^{-7}$	$1.858 \cdot 10^{-17}$	$1.858 \cdot 10^{-17}$	$-2.691 \cdot 10^{-7}$
cdHRe	$1.182 \cdot 10^{-15}$	$1.182 \cdot 10^{-15}$	$-8.462 \cdot 10^{-8}$	$5.41 \cdot 10^{-16}$	$5.41 \cdot 10^{-16}$	$-1.109 \cdot 10^{-7}$
$\mathtt{cdWIm}$	$3.421 \cdot 10^{-14}$	$3.421 \cdot 10^{-14}$	$-1.462 \cdot 10^{-7}$	$4.037 \cdot 10^{-15}$	$4.037 \cdot 10^{-15}$	$-1.486 \cdot 10^{-7}$
cdWRe	$7.665 \cdot 10^{-15}$	$7.665 \cdot 10^{-15}$	$-1.827 \cdot 10^{-7}$	$1.554 \cdot 10^{-14}$	$1.554 \cdot 10^{-14}$	$-1.287 \cdot 10^{-7}$
cuHIm	$1.229 \cdot 10^{-18}$	$1.229 \cdot 10^{-18}$	$-8.134 \cdot 10^{-8}$	$1.767 \cdot 10^{-29}$	$1.767 \cdot 10^{-29}$	0
cuHRe	$1.677 \cdot 10^{-16}$	$1.677 \cdot 10^{-16}$	$-1.193 \cdot 10^{-7}$	$1.492 \cdot 10^{-25}$	$1.492 \cdot 10^{-25}$	0
cuWIm	$-4.016 \cdot 10^{-17}$	$-4.016 \cdot 10^{-17}$	$-9.462 \cdot 10^{-7}$	$1.577 \cdot 10^{-24}$	$1.577 \cdot 10^{-24}$	0
cuWRe	$-4.84 \cdot 10^{-16}$	$-4.84 \cdot 10^{-16}$	$-2.273 \cdot 10^{-7}$	$1.583 \cdot 10^{-25}$	$1.583 \cdot 10^{-25}$	$-6.315 \cdot 10^{-8}$
sm	0	0	0	$3.49 \cdot 10^{-6}$	$3.49 \cdot 10^{-6}$	$-2.292 \cdot 10^{-7}$

#### 1.41 $W^+W^- \rightarrow Ht\bar{t}$

		interfer	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сН	$2.731 \cdot 10^{-7}$	$2.731 \cdot 10^{-7}$	$-7.323 \cdot 10^{-8}$	$2.065 \cdot 10^{-7}$	$2.065 \cdot 10^{-7}$	0	
cHB	$6.87 \cdot 10^{-9}$	$6.87 \cdot 10^{-9}$	$-9.606 \cdot 10^{-7}$	$1.261 \cdot 10^{-9}$	$1.261 \cdot 10^{-9}$	$7.139 \cdot 10^{-7}$	
cHBtil	$1.474 \cdot 10^{-8}$	$1.474 \cdot 10^{-8}$	0	$3.456 \cdot 10^{-11}$	$3.456 \cdot 10^{-11}$	$6.945 \cdot 10^{-7}$	
cHDD	$2.843 \cdot 10^{-7}$	$2.843 \cdot 10^{-7}$	$-3.517 \cdot 10^{-8}$	$2.028 \cdot 10^{-7}$	$2.028 \cdot 10^{-7}$	0	
cHQ1	$-7.311 \cdot 10^{-7}$	$-7.311 \cdot 10^{-7}$	$2.052\cdot10^{-7}$	$2.619 \cdot 10^{-6}$	$2.619 \cdot 10^{-6}$	$-3.818 \cdot 10^{-8}$	
cHQ3	$3.815 \cdot 10^{-6}$	$3.815 \cdot 10^{-6}$	$-7.863 \cdot 10^{-8}$	$4.649 \cdot 10^{-6}$	$4.649 \cdot 10^{-6}$	$-2.151 \cdot 10^{-8}$	
cHW	$6.915 \cdot 10^{-6}$	$6.915 \cdot 10^{-6}$	$-1.157 \cdot 10^{-7}$	$1.099 \cdot 10^{-5}$	$1.099 \cdot 10^{-5}$	0	
cHWB	$-2.562 \cdot 10^{-7}$	$-2.562 \cdot 10^{-7}$	$1.951 \cdot 10^{-7}$	$2.03 \cdot 10^{-7}$	$2.03\cdot10^{-7}$	$3.94 \cdot 10^{-7}$	
cHWBtil	$1.956 \cdot 10^{-8}$	$1.956 \cdot 10^{-8}$	$1.022 \cdot 10^{-7}$	$2.369 \cdot 10^{-7}$	$2.369 \cdot 10^{-7}$	$3.377 \cdot 10^{-7}$	
cHWtil	$-1.232 \cdot 10^{-5}$	$-1.232 \cdot 10^{-5}$	$-8.117 \cdot 10^{-8}$	$2.714 \cdot 10^{-5}$	$2.714 \cdot 10^{-5}$	$-3.684 \cdot 10^{-8}$	
cHt	$7.498 \cdot 10^{-6}$	$7.498 \cdot 10^{-6}$	$-1.734 \cdot 10^{-7}$	$8.744 \cdot 10^{-7}$	$8.744 \cdot 10^{-7}$	$-4.575 \cdot 10^{-8}$	
$\mathtt{cHtbIm}$	$-5.892 \cdot 10^{-9}$	$-5.892 \cdot 10^{-9}$	$-6.958 \cdot 10^{-7}$	$2.556 \cdot 10^{-9}$	$2.556 \cdot 10^{-9}$	$-3.913 \cdot 10^{-8}$	
cHtbRe	$-3.507 \cdot 10^{-7}$	$-3.507 \cdot 10^{-7}$	$-1.426 \cdot 10^{-7}$	$5.137 \cdot 10^{-9}$	$5.137 \cdot 10^{-9}$	0	
cW	$-1.049 \cdot 10^{-6}$	$-1.049 \cdot 10^{-6}$	$-1.906 \cdot 10^{-7}$	$3.545 \cdot 10^{-6}$	$3.545 \cdot 10^{-6}$	$-8.463 \cdot 10^{-8}$	
cWtil	$-1.433 \cdot 10^{-7}$	$-1.433 \cdot 10^{-7}$	$-1.396 \cdot 10^{-7}$	$3.546 \cdot 10^{-6}$	$3.546 \cdot 10^{-6}$	$-8.461 \cdot 10^{-8}$	
$\mathtt{cbHIm}$	$1.055 \cdot 10^{-7}$	$1.055 \cdot 10^{-7}$	$-9.477 \cdot 10^{-7}$	$7.41 \cdot 10^{-9}$	$7.41 \cdot 10^{-9}$	$-4.049 \cdot 10^{-8}$	
cbHRe	$5.23 \cdot 10^{-8}$	$5.23 \cdot 10^{-8}$	$-9.559 \cdot 10^{-8}$	$5.757 \cdot 10^{-11}$	$5.757 \cdot 10^{-11}$	$-1.737 \cdot 10^{-8}$	
$\mathtt{cbWIm}$	$-4.945 \cdot 10^{-9}$	$-4.945 \cdot 10^{-9}$	$-8.089 \cdot 10^{-8}$	$2.044 \cdot 10^{-8}$	$2.044 \cdot 10^{-8}$	$4.893 \cdot 10^{-8}$	
cbWRe	$-1.484 \cdot 10^{-7}$	$-1.484 \cdot 10^{-7}$	$-6.737 \cdot 10^{-8}$	$2.018 \cdot 10^{-8}$	$2.018 \cdot 10^{-8}$	0	
$\mathtt{ctBIm}$	$1.647 \cdot 10^{-7}$	$1.647 \cdot 10^{-7}$	0	$1.545 \cdot 10^{-8}$	$1.545 \cdot 10^{-8}$	$3.884 \cdot 10^{-7}$	
ctBRe	$-6.03 \cdot 10^{-7}$	$-6.03 \cdot 10^{-7}$	$-1.327 \cdot 10^{-7}$	$3.923 \cdot 10^{-8}$	$3.923 \cdot 10^{-8}$	$4.079 \cdot 10^{-7}$	
$\mathtt{ctHIm}$	$-1.55 \cdot 10^{-7}$	$-1.55 \cdot 10^{-7}$	$-1.935 \cdot 10^{-7}$	$5.622 \cdot 10^{-7}$	$5.622 \cdot 10^{-7}$	$1.779 \cdot 10^{-8}$	
ctHRe	$-1.509 \cdot 10^{-6}$	$-1.509 \cdot 10^{-6}$	$-1.326 \cdot 10^{-7}$	$1.193 \cdot 10^{-6}$	$1.193 \cdot 10^{-6}$	0	
$\mathtt{ctWIm}$	$5.422 \cdot 10^{-7}$	$5.422 \cdot 10^{-7}$	$-1.476 \cdot 10^{-7}$	$3.157 \cdot 10^{-5}$	$3.157 \cdot 10^{-5}$	$3.168 \cdot 10^{-8}$	
ctWRe	$-5.613 \cdot 10^{-5}$	$-5.613 \cdot 10^{-5}$	$-1.781 \cdot 10^{-8}$	0.0001142	0.0001142	0	
sm	0	0	0	$1.073 \cdot 10^{-5}$	$1.073 \cdot 10^{-5}$	$-9.319 \cdot 10^{-8}$	

### **1.42** $W^+W^- \to W^+W^-$

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
cHW	0.2373	0.2373	0	2.582	2.582	0
cHWB	-12.12	-12.12	0	0.5085	0.5085	$2.556 \cdot 10^{-7}$
cHWBtil	$1.333 \cdot 10^{-16}$	$-6.153 \cdot 10^{-17}$	1.462	0.00439	0.00439	$3.417 \cdot 10^{-7}$
cHWtil	$1.284 \cdot 10^{-17}$	$6.588 \cdot 10^{-16}$	-50.32	1.999	1.999	0
cW	0.1152	0.1152	$1.736 \cdot 10^{-7}$	2.981	2.981	$-1.006 \cdot 10^{-7}$
cWtil	$-6.641 \cdot 10^{-13}$	$-1.722 \cdot 10^{-13}$	0.7407	2.982	2.982	$-1.006 \cdot 10^{-7}$
sm	0	0	0	5.417	5.417	$-3.508 \cdot 10^{-7}$

### 1.43 $W^+W^- \rightarrow \gamma\gamma$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
cHB	-0.0465	-0.0465	$1.505 \cdot 10^{-7}$	0.2695	0.2695	$-2.226 \cdot 10^{-7}$	
cHBtil	$-6.809 \cdot 10^{-18}$	$2.826 \cdot 10^{-19}$	1.041	0.2695	0.2695	$-2.226 \cdot 10^{-7}$	
cHW	-0.0143	-0.0143	$6.293 \cdot 10^{-7}$	0.02503	0.02503	$7.191 \cdot 10^{-7}$	
cHWB	-0.02084	-0.02084	$5.757 \cdot 10^{-7}$	0.07916	0.07916	$2.527 \cdot 10^{-7}$	
cHWBtil	$7.711 \cdot 10^{-17}$	$-1.19 \cdot 10^{-17}$	1.154	0.0772	0.0772	$2.461 \cdot 10^{-7}$	
cHWtil	$-1.929 \cdot 10^{-18}$	$-9.762 \cdot 10^{-19}$	0.4941	0.02503	0.02503	$7.191 \cdot 10^{-7}$	
cW	0.0005641	0.0005641	$4.432 \cdot 10^{-7}$	0.7204	0.7204	$6.108 \cdot 10^{-7}$	
cWtil	$-1.982 \cdot 10^{-17}$	$1.943 \cdot 10^{-17}$	1.98	0.7204	0.7204	$5.969 \cdot 10^{-7}$	
sm	0	0	0	0.09616	0.09616	$4.991 \cdot 10^{-7}$	

### 1.44 $W^+W^- \rightarrow \gamma\gamma\gamma$

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	$-1.738 \cdot 10^{-8}$	$-1.738 \cdot 10^{-8}$	$6.906 \cdot 10^{-7}$	$2.978 \cdot 10^{-7}$	$2.978 \cdot 10^{-7}$	$3.359 \cdot 10^{-8}$
cHBtil	$3.265 \cdot 10^{-8}$	$3.265 \cdot 10^{-8}$	$3.063 \cdot 10^{-7}$	$2.929 \cdot 10^{-7}$	$2.929 \cdot 10^{-7}$	0
cHW	$-4.082 \cdot 10^{-8}$	$-4.082 \cdot 10^{-8}$	$7.595 \cdot 10^{-7}$	$9.185 \cdot 10^{-7}$	$9.185 \cdot 10^{-7}$	$8.928 \cdot 10^{-7}$
cHWB	$-2.63 \cdot 10^{-8}$	$-2.63 \cdot 10^{-8}$	$1.255 \cdot 10^{-6}$	$9.245 \cdot 10^{-8}$	$9.245 \cdot 10^{-8}$	$4.976 \cdot 10^{-7}$
cHWBtil	$-1.522 \cdot 10^{-8}$	$-1.522 \cdot 10^{-8}$	$5.257 \cdot 10^{-7}$	$2.567 \cdot 10^{-7}$	$2.567 \cdot 10^{-7}$	$4.674 \cdot 10^{-7}$
cHWtil	$9.951 \cdot 10^{-9}$	$9.951 \cdot 10^{-9}$	$7.638 \cdot 10^{-7}$	$2.72 \cdot 10^{-8}$	$2.72 \cdot 10^{-8}$	$9.558 \cdot 10^{-7}$
cW	$3.005 \cdot 10^{-7}$	$3.005 \cdot 10^{-7}$	$7.986 \cdot 10^{-7}$	$1.841 \cdot 10^{-6}$	$1.841 \cdot 10^{-6}$	$8.689 \cdot 10^{-7}$
cWtil	$1.024 \cdot 10^{-7}$	$1.024 \cdot 10^{-7}$	$8.791 \cdot 10^{-7}$	$1.839 \cdot 10^{-6}$	$1.839 \cdot 10^{-6}$	$8.698 \cdot 10^{-7}$
sm	0	0	0	$8.333 \cdot 10^{-7}$	$8.333 \cdot 10^{-7}$	$7.68 \cdot 10^{-7}$

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

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHQ3	0.004084	0.004084	$-2.204 \cdot 10^{-7}$	0.0001238	0.0001238	$-1.616 \cdot 10^{-7}$
сНјЗ	0.001017	0.001017	$-1.966 \cdot 10^{-7}$	$3.083 \cdot 10^{-5}$	$3.083 \cdot 10^{-5}$	$-2.271 \cdot 10^{-7}$
cHtbIm	$6.744 \cdot 10^{-22}$	$2.011 \cdot 10^{-21}$	-1.983	$1.538 \cdot 10^{-5}$	$1.538 \cdot 10^{-5}$	$-2.6 \cdot 10^{-7}$
cHtbRe	$-1.96 \cdot 10^{-6}$	$-1.96 \cdot 10^{-6}$	$-2.551 \cdot 10^{-7}$	$7.709 \cdot 10^{-6}$	$7.709 \cdot 10^{-6}$	$-2.205 \cdot 10^{-7}$
$\mathtt{cHudIm}$	$-4.577 \cdot 10^{-37}$	$1.379 \cdot 10^{-39}$	1.003	$1.942 \cdot 10^{-24}$	$1.942 \cdot 10^{-24}$	$-2.06 \cdot 10^{-7}$
cHudRe	$3.298 \cdot 10^{-21}$	$3.298 \cdot 10^{-21}$	0	$9.846 \cdot 10^{-26}$	$9.846 \cdot 10^{-26}$	$-2.234 \cdot 10^{-7}$
cQj31	0.6367	0.6367	$-1.099 \cdot 10^{-7}$	3.009	3.009	0
cQj38	$1.602 \cdot 10^{-19}$	$1.602 \cdot 10^{-19}$	$-9.302 \cdot 10^{-6}$	0.1665	0.1665	0
cQtjd1Im	$5.991 \cdot 10^{-14}$	$5.991 \cdot 10^{-14}$	$-6.677 \cdot 10^{-8}$	$1.799 \cdot 10^{-10}$	$1.799 \cdot 10^{-10}$	0
cQtjd1Re	$-3.575 \cdot 10^{-10}$	$-3.575 \cdot 10^{-10}$	0	$1.799 \cdot 10^{-10}$	$1.799 \cdot 10^{-10}$	0
cQtjd8Im	$-7.18 \cdot 10^{-28}$	$1.096 \cdot 10^{-32}$	1	$3.997 \cdot 10^{-11}$	$3.997 \cdot 10^{-11}$	0
cQtjd8Re	$1.629 \cdot 10^{-40}$	$-5.744 \cdot 10^{-27}$	$3.527 \cdot 10^{13}$	$3.997 \cdot 10^{-11}$	$3.997 \cdot 10^{-11}$	0
cQujb1Im	$-6.883 \cdot 10^{-17}$	$-6.883 \cdot 10^{-17}$	$-5.811 \cdot 10^{-8}$	$1.64 \cdot 10^{-11}$	$1.64 \cdot 10^{-11}$	0
cQujb1Re	$-4.109 \cdot 10^{-13}$	$-4.109 \cdot 10^{-13}$	0	$1.64 \cdot 10^{-11}$	$1.64 \cdot 10^{-11}$	0
cQujb8Im	$-8.62 \cdot 10^{-17}$	$-8.62 \cdot 10^{-17}$	$-5.8 \cdot 10^{-8}$	$3.197 \cdot 10^{-12}$	$3.197 \cdot 10^{-12}$	0

cQujb8Re	$-5.146 \cdot 10^{-13}$	$-5.146 \cdot 10^{-13}$	$-1.943 \cdot 10^{-8}$	$3.197 \cdot 10^{-12}$	$3.197 \cdot 10^{-12}$	0
cbWIm	$-3.855 \cdot 10^{-21}$	$-2.599 \cdot 10^{-21}$	0.3259	0.002601	0.002601	$-1.154 \cdot 10^{-7}$
cbWRe	$-2.071 \cdot 10^{-5}$	$-2.071 \cdot 10^{-5}$	$-1.449 \cdot 10^{-7}$	0.002601	0.002601	$-1.154 \cdot 10^{-7}$
cdWIm	$8.656 \cdot 10^{-27}$	$3.82 \cdot 10^{-26}$	-3.413	$9.082 \cdot 10^{-12}$	$9.082 \cdot 10^{-12}$	$-1.101 \cdot 10^{-7}$
cdWRe	$-7.799 \cdot 10^{-12}$	$-7.799 \cdot 10^{-12}$	$-1.282 \cdot 10^{-7}$	$8.887 \cdot 10^{-12}$	$8.887 \cdot 10^{-12}$	$-1.013 \cdot 10^{-7}$
cjQbd1Im	$-9.977 \cdot 10^{-16}$	$-9.977 \cdot 10^{-16}$	$-6.014 \cdot 10^{-8}$	$7.195 \cdot 10^{-10}$	$7.195 \cdot 10^{-10}$	0
cjQbd1Re	$5.919 \cdot 10^{-12}$	$5.919 \cdot 10^{-12}$	0	$7.195 \cdot 10^{-10}$	$7.195 \cdot 10^{-10}$	0
cjQbd8Im	$-1.317 \cdot 10^{-15}$	$-1.317 \cdot 10^{-15}$	$-7.594 \cdot 10^{-8}$	$1.599 \cdot 10^{-10}$	$1.599 \cdot 10^{-10}$	0
cjQbd8Re	$7.861 \cdot 10^{-12}$	$7.861 \cdot 10^{-12}$	$1.272 \cdot 10^{-8}$	$1.599 \cdot 10^{-10}$	$1.599 \cdot 10^{-10}$	0
cjQtu1Im	$8.568 \cdot 10^{-15}$	$8.568 \cdot 10^{-15}$	$-5.835 \cdot 10^{-8}$	$1.539 \cdot 10^{-10}$	$1.539 \cdot 10^{-10}$	0
cjQtu1Re	$5.06 \cdot 10^{-11}$	$5.06 \cdot 10^{-11}$	0	$1.539 \cdot 10^{-10}$	$1.539 \cdot 10^{-10}$	0
cjQtu8Im	$1.13 \cdot 10^{-14}$	$1.13 \cdot 10^{-14}$	0	$3.42 \cdot 10^{-11}$	$3.42 \cdot 10^{-11}$	0
cjQtu8Re	$6.795 \cdot 10^{-11}$	$6.795 \cdot 10^{-11}$	0	$3.42 \cdot 10^{-11}$	$3.42 \cdot 10^{-11}$	0
cjtQd1Im	$2.923 \cdot 10^{-15}$	$2.923 \cdot 10^{-15}$	$-3.421 \cdot 10^{-8}$	$3.887 \cdot 10^{-12}$	$3.887 \cdot 10^{-12}$	0
cjtQd1Re	$-1.745 \cdot 10^{-11}$	$-1.745 \cdot 10^{-11}$	0	$3.887 \cdot 10^{-12}$	$3.887 \cdot 10^{-12}$	0
cjtQd8Im	$1.633 \cdot 10^{-14}$	$1.633 \cdot 10^{-14}$	$-6.123 \cdot 10^{-8}$	$1.495 \cdot 10^{-11}$	$1.495 \cdot 10^{-11}$	0
cjtQd8Re	$-1.041 \cdot 10^{-10}$	$-1.041 \cdot 10^{-10}$	0	$1.704 \cdot 10^{-11}$	$1.704 \cdot 10^{-11}$	0
cjuQb1Im	$-3.193 \cdot 10^{-16}$	$-3.193 \cdot 10^{-16}$	$-6.263 \cdot 10^{-8}$	$3.848 \cdot 10^{-11}$	$3.848 \cdot 10^{-11}$	0
cjuQb1Re	$-1.901 \cdot 10^{-12}$	$-1.901 \cdot 10^{-12}$	0	$3.848 \cdot 10^{-11}$	$3.848 \cdot 10^{-11}$	0
cjuQb8Im	$1.097 \cdot 10^{-29}$	$1.167 \cdot 10^{-29}$	-0.06395	$8.551 \cdot 10^{-12}$	$8.551 \cdot 10^{-12}$	0
cjuQb8Re	$-2.373 \cdot 10^{-29}$	$-2.373 \cdot 10^{-29}$	0	$8.551 \cdot 10^{-12}$	$8.551 \cdot 10^{-12}$	0
ctWIm	$-3.57 \cdot 10^{-19}$	$2.474 \cdot 10^{-18}$	7.928	0.007172	0.007172	$-1.116 \cdot 10^{-7}$
ctWRe	-0.00705	-0.00705	$-1.702 \cdot 10^{-7}$	0.01289	0.01289	$-1.551 \cdot 10^{-7}$
cuWIm	$-2.389 \cdot 10^{-26}$	$-1.578 \cdot 10^{-26}$	0.3395	$1.901 \cdot 10^{-12}$	$1.901 \cdot 10^{-12}$	$-1.052 \cdot 10^{-7}$
cuWRe	$-6.594 \cdot 10^{-13}$	$-6.594 \cdot 10^{-13}$	$-2.275 \cdot 10^{-7}$	$1.943 \cdot 10^{-12}$	$1.943 \cdot 10^{-12}$	$-1.029 \cdot 10^{-7}$
cutbd1Im	$8.759 \cdot 10^{-27}$	$8.759 \cdot 10^{-27}$	$-4.567 \cdot 10^{-8}$	$2.075 \cdot 10^{-20}$	$2.075 \cdot 10^{-20}$	0
cutbd1Re	$-5.229 \cdot 10^{-23}$	$-5.229 \cdot 10^{-23}$	0	$3.75 \cdot 10^{-20}$	$3.75 \cdot 10^{-20}$	0
cutbd8Im	$1.168 \cdot 10^{-26}$	$1.168 \cdot 10^{-26}$	$-8.563 \cdot 10^{-8}$	$1.851 \cdot 10^{-20}$	$1.851 \cdot 10^{-20}$	0
cutbd8Re	$-6.972 \cdot 10^{-23}$	$-6.972 \cdot 10^{-23}$	0	$8.333 \cdot 10^{-21}$	$8.333 \cdot 10^{-21}$	0

sm 0 0 5.154  $\cdot$  10<sup>-5</sup> 5.154  $\cdot$  10<sup>-5</sup>  $-2.134 \cdot$  10<sup>-7</sup>

### $1.46 \quad \gamma W^+ \to z W^+$

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
cHB	-0.00608	-0.00608	$1.151 \cdot 10^{-7}$	0.001491	0.001491	$2.011 \cdot 10^{-7}$
cHBtil	$-1.944 \cdot 10^{-16}$	$-1.584 \cdot 10^{-16}$	0.1853	0.06231	0.06231	$2.407 \cdot 10^{-7}$
cHW	0.04785	0.04785	$1.672 \cdot 10^{-7}$	0.06328	0.06328	$2.37 \cdot 10^{-7}$
cHWB	35.13	35.13	$-6.263 \cdot 10^{-7}$	1.567	1.567	$-3.829 \cdot 10^{-7}$
cHWBtil	$4.848 \cdot 10^{-16}$	$6.595 \cdot 10^{-16}$	-0.3605	0.7494	0.7494	$-2.402 \cdot 10^{-7}$
cHWtil	$6.295 \cdot 10^{-17}$	$1.931 \cdot 10^{-16}$	-2.067	0.06231	0.06231	$2.407 \cdot 10^{-7}$
cW	0.00423	0.00423	$7.565 \cdot 10^{-7}$	1.899	1.899	$1.58 \cdot 10^{-7}$
cWtil	$-3.116 \cdot 10^{-15}$	$-1.369 \cdot 10^{-15}$	0.5607	1.899	1.899	$1.58 \cdot 10^{-7}$
sm	0	0	0	0.2133	0.2133	$4.688 \cdot 10^{-8}$

### 1.47 $\mu^{+}\mu^{-} \rightarrow \tau^{+}\tau^{-}$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-6.096 \cdot 10^{-13}$	$-6.096 \cdot 10^{-13}$	$1.64 \cdot 10^{-8}$	$9.096 \cdot 10^{-15}$	$9.096 \cdot 10^{-15}$	0		
cHWB	-0.0014	-0.0014	$7.142 \cdot 10^{-8}$	$3.752 \cdot 10^{-5}$	$3.752 \cdot 10^{-5}$	$2.399 \cdot 10^{-7}$		
сНе	-0.0003617	-0.0003617	$1.161 \cdot 10^{-6}$	$2.649 \cdot 10^{-5}$	$2.649 \cdot 10^{-5}$	$3.019 \cdot 10^{-7}$		
cHl1	-0.0006056	-0.0006056	$8.422 \cdot 10^{-7}$	$2.333 \cdot 10^{-5}$	$2.333 \cdot 10^{-5}$	$5.571 \cdot 10^{-7}$		
cHl3	-0.0008837	-0.0008837	$7.242 \cdot 10^{-7}$	$2.761 \cdot 10^{-5}$	$2.761 \cdot 10^{-5}$	$6.881 \cdot 10^{-7}$		
ceBIm	$-7.659 \cdot 10^{-24}$	$-7.475 \cdot 10^{-24}$	0.02403	$5.534 \cdot 10^{-7}$	$5.534 \cdot 10^{-7}$	$3.434 \cdot 10^{-7}$		
ceBRe	$1.639 \cdot 10^{-6}$	$1.639 \cdot 10^{-6}$	$4.271 \cdot 10^{-7}$	$5.534 \cdot 10^{-7}$	$5.534 \cdot 10^{-7}$	$3.614 \cdot 10^{-7}$		
ceHIm	$-3.459 \cdot 10^{-29}$	$8.012 \cdot 10^{-30}$	1.232	$7.277 \cdot 10^{-14}$	$7.277 \cdot 10^{-14}$	0		
ceHRe	$-2.439 \cdot 10^{-12}$	$-2.439 \cdot 10^{-12}$	0	$1.455 \cdot 10^{-13}$	$1.455 \cdot 10^{-13}$	0		

ceWIm	$5.422 \cdot 10^{-24}$	$2.193 \cdot 10^{-24}$	0.5955	$3.659 \cdot 10^{-7}$	$3.659 \cdot 10^{-7}$	$-1.093 \cdot 10^{-7}$
ceWRe	$-8.551 \cdot 10^{-7}$	$-8.551 \cdot 10^{-7}$	$4.678 \cdot 10^{-8}$	$6.668 \cdot 10^{-7}$	$6.668 \cdot 10^{-7}$	$-1.05 \cdot 10^{-7}$
cee	0.1526	0.1526	$3.277 \cdot 10^{-7}$	1.188	1.188	0
cle	0.2276	0.2276	$3.516 \cdot 10^{-7}$	1.784	1.784	0
cll	0.3857	0.3857	0	2.806	2.806	0
cll1	0.0017	0.0017	0	0.01236	0.01236	0
sm	0	0	0	0.02469	0.02469	$3.24 \cdot 10^{-7}$

### 1.48 $\nu_{\tau}\bar{\nu}_{\tau} \rightarrow \nu_{\tau}\bar{\nu}_{\tau}$

		inte	erference	square			
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHWB	0.0004339	0.0004339	$1.152 \cdot 10^{-7}$	$1.113 \cdot 10^{-5}$	$1.113 \cdot 10^{-5}$	$2.695 \cdot 10^{-7}$	
cHl1	-0.04156	-0.04156	0	0.002519	0.002519	0	
cH13	0.004184	0.004184	0	0.0002537	0.0002537	0	
cll	-0.2592	-0.2592	0	3.971	3.971	0	
cll1	-0.649	-0.649	0	6.102	6.102	0	
sm	0	0	0	$5.178 \cdot 10^{-9}$	$5.178 \cdot 10^{-9}$	0	

# 1.49 $\nu_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$

		interf	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
cHWB	0.001513	0.001513	$1.322 \cdot 10^{-7}$	$3.88 \cdot 10^{-5}$	$3.88 \cdot 10^{-5}$	$2.577 \cdot 10^{-7}$		
cHl1	-0.002268	-0.002268	0	0.0001375	0.0001375	0		
cH13	$7.697 \cdot 10^{-7}$	$7.697 \cdot 10^{-7}$	0	$4.666 \cdot 10^{-8}$	$4.666 \cdot 10^{-8}$	0		
cll	0.4264	0.4264	0	3.083	3.083	0		
cll1	$9.18\cdot10^{-5}$	$9.18 \cdot 10^{-5}$	0	0.0006637	0.0006637	0		
sm	0	0	0	0.001653	0.001653	0		

# 1.50 $b\bar{b} \rightarrow \gamma \gamma$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
сНВ	$-7.646 \cdot 10^{-7}$	$-7.646 \cdot 10^{-7}$	$1.308 \cdot 10^{-7}$	$7.062 \cdot 10^{-6}$	$7.062 \cdot 10^{-6}$	$-2.266 \cdot 10^{-7}$		
cHBtil	$1.055 \cdot 10^{-24}$	$1.439 \cdot 10^{-24}$	-0.3643	$7.062 \cdot 10^{-6}$	$7.062 \cdot 10^{-6}$	$-2.124 \cdot 10^{-7}$		
cHW	$-1.349 \cdot 10^{-7}$	$-1.349 \cdot 10^{-7}$	$5.928 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	$7.014 \cdot 10^{-7}$		
cHWB	$-8.086 \cdot 10^{-6}$	$-8.086 \cdot 10^{-6}$	$6.307 \cdot 10^{-7}$	$2.354 \cdot 10^{-6}$	$2.354 \cdot 10^{-6}$	$2.974 \cdot 10^{-7}$		
cHWBtil	$-1.101 \cdot 10^{-22}$	$-1.433 \cdot 10^{-24}$	0.987	$2.152 \cdot 10^{-6}$	$2.152 \cdot 10^{-6}$	$2.323 \cdot 10^{-7}$		
cHWtil	$3.215 \cdot 10^{-25}$	$4.386 \cdot 10^{-25}$	-0.3643	$6.558 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	$7.014 \cdot 10^{-7}$		
cbBIm	$5.191 \cdot 10^{-24}$	$7.593 \cdot 10^{-23}$	-13.63	0.002028	0.002028	$9.861 \cdot 10^{-8}$		
cbBRe	$1.296 \cdot 10^{-5}$	$1.296 \cdot 10^{-5}$	$3.087 \cdot 10^{-7}$	0.002028	0.002028	$1.479 \cdot 10^{-7}$		
$\mathtt{cbWIm}$	$1.799 \cdot 10^{-21}$	$2.174 \cdot 10^{-21}$	-0.2088	0.0006179	0.0006179	$5.988 \cdot 10^{-7}$		
cbWRe	$-3.695 \cdot 10^{-5}$	$-3.695 \cdot 10^{-5}$	$5.684 \cdot 10^{-7}$	0.0006182	0.0006182	$6.147 \cdot 10^{-7}$		
sm	0	0	0	0.001292	0.001292	$5.416 \cdot 10^{-7}$		

# $1.51 \quad b\bar{b} \to \mu^+\mu^-$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-1.104 \cdot 10^{-12}$	$-1.104 \cdot 10^{-12}$	0	$1.678 \cdot 10^{-14}$	$1.678 \cdot 10^{-14}$	0		
cHQ1	0.0001379	0.0001379	$-4.35 \cdot 10^{-7}$	$3.623 \cdot 10^{-6}$	$3.623 \cdot 10^{-6}$	$-4.417 \cdot 10^{-7}$		
cHQ3	$5.794 \cdot 10^{-5}$	$5.794 \cdot 10^{-5}$	$3.452 \cdot 10^{-8}$	$2.989 \cdot 10^{-6}$	$2.989 \cdot 10^{-6}$	$3.68 \cdot 10^{-7}$		
cHWB	$1.247 \cdot 10^{-5}$	$1.247 \cdot 10^{-5}$	$1.203 \cdot 10^{-6}$	$8.213 \cdot 10^{-6}$	$8.213 \cdot 10^{-6}$	$2.557 \cdot 10^{-7}$		
cHbq	$2.355 \cdot 10^{-5}$	$2.355 \cdot 10^{-5}$	$-2.124 \cdot 10^{-7}$	$3.828 \cdot 10^{-6}$	$3.828 \cdot 10^{-6}$	$-4.964 \cdot 10^{-7}$		
сНе	$-2.913 \cdot 10^{-5}$	$-2.913 \cdot 10^{-5}$	$6.867 \cdot 10^{-7}$	$7.994 \cdot 10^{-7}$	$7.994 \cdot 10^{-7}$	$3.002 \cdot 10^{-7}$		
cHl1	0.0002677	0.0002677	$-2.241 \cdot 10^{-7}$	$1.004 \cdot 10^{-5}$	$1.004 \cdot 10^{-5}$	$-9.959 \cdot 10^{-8}$		
cH13	0.0002077	0.0002077	$-2.408 \cdot 10^{-7}$	$7.867 \cdot 10^{-6}$	$7.867 \cdot 10^{-6}$	$-1.271 \cdot 10^{-7}$		
cQe	-0.00261	-0.00261	$3.449 \cdot 10^{-7}$	0.05984	0.05984	0		

cQl1	0.005087	0.005087	$-1.573 \cdot 10^{-7}$	0.02678	0.02678	0
cQ13	0.005087	0.005087	$-1.573 \cdot 10^{-7}$	0.02678	0.02678	0
cbBIm	$-7.213 \cdot 10^{-21}$	$-3.047 \cdot 10^{-20}$	-3.224	0.002803	0.002803	$3.924 \cdot 10^{-7}$
cbBRe	$5.184 \cdot 10^{-5}$	$5.184 \cdot 10^{-5}$	$2.508 \cdot 10^{-7}$	0.001682	0.001682	$3.567 \cdot 10^{-7}$
$\mathtt{cbHIm}$	$1.473 \cdot 10^{-29}$	$-1.416 \cdot 10^{-28}$	10.62	$1.164 \cdot 10^{-10}$	$1.164 \cdot 10^{-10}$	0
cbHRe	$-9.262 \cdot 10^{-11}$	$-9.262 \cdot 10^{-11}$	0	$1.164 \cdot 10^{-10}$	$1.164 \cdot 10^{-10}$	0
$\mathtt{cbWIm}$	$-2.455 \cdot 10^{-20}$	$-1.229 \cdot 10^{-21}$	0.95	0.001741	0.001741	$-1.149 \cdot 10^{-7}$
cbWRe	$-2.665 \cdot 10^{-5}$	$-2.665 \cdot 10^{-5}$	$-3.752 \cdot 10^{-8}$	0.001742	0.001742	$-1.148 \cdot 10^{-7}$
cbe	0.0171	0.0171	$3.509 \cdot 10^{-7}$	0.1998	0.1998	0
cbl	0.000724	0.000724	$3.453 \cdot 10^{-7}$	0.017	0.017	0
ceBIm	$7.297 \cdot 10^{-27}$	$4.523 \cdot 10^{-27}$	0.3801	$1.209 \cdot 10^{-10}$	$1.209 \cdot 10^{-10}$	$3.309 \cdot 10^{-7}$
ceBRe	$6.872 \cdot 10^{-11}$	$6.872 \cdot 10^{-11}$	$9.749 \cdot 10^{-7}$	$1.209 \cdot 10^{-10}$	$1.209 \cdot 10^{-10}$	$3.309 \cdot 10^{-7}$
$\mathtt{ceHIm}$	$-5.018 \cdot 10^{-30}$	$-4.668 \cdot 10^{-30}$	0.06986	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	0
ceHRe	$-2.208 \cdot 10^{-12}$	$-2.208 \cdot 10^{-12}$	0	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	0
ceWIm	$6.897 \cdot 10^{-28}$	$-9.851 \cdot 10^{-27}$	15.28	$7.159 \cdot 10^{-10}$	$7.159 \cdot 10^{-10}$	$-1.118 \cdot 10^{-7}$
ceWRe	$-7.498 \cdot 10^{-10}$	$-7.498 \cdot 10^{-10}$	$-2.401 \cdot 10^{-7}$	$4.117 \cdot 10^{-10}$	$4.117 \cdot 10^{-10}$	$-1.214 \cdot 10^{-7}$
${\tt clebQIm}$	$-3.675 \cdot 10^{-25}$	$-5.053 \cdot 10^{-25}$	-0.3752	$6.138 \cdot 10^{-8}$	$6.138 \cdot 10^{-8}$	0
clebQRe	$-2.979 \cdot 10^{-9}$	$-2.979 \cdot 10^{-9}$	0	$6.138 \cdot 10^{-8}$	$6.138 \cdot 10^{-8}$	0
sm	0	0	0	0.0004494	0.0004494	$1.558 \cdot 10^{-7}$

# $1.52 \quad b\bar{b} \to \nu_e \bar{\nu}_e$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHQ1	0.0002034	0.0002034	$-4.916 \cdot 10^{-8}$	$7.303 \cdot 10^{-6}$	$7.303 \cdot 10^{-6}$	0		
cHQ3	0.0001579	0.0001579	$-6.331 \cdot 10^{-8}$	$5.671 \cdot 10^{-6}$	$5.671 \cdot 10^{-6}$	0		
cHWB	$9.787 \cdot 10^{-5}$	$9.787 \cdot 10^{-5}$	$9.196 \cdot 10^{-8}$	$2.286 \cdot 10^{-6}$	$2.286 \cdot 10^{-6}$	$2.187 \cdot 10^{-7}$		
cHbq	-0.0001023	-0.0001023	$3.909 \cdot 10^{-7}$	$1.992 \cdot 10^{-5}$	$1.992 \cdot 10^{-5}$	0		
cHl1	$-2.371 \cdot 10^{-5}$	$-2.371 \cdot 10^{-5}$	$3.795 \cdot 10^{-7}$	$7.188 \cdot 10^{-7}$	$7.188 \cdot 10^{-7}$	$3.617 \cdot 10^{-7}$		

cH13	0.0001754	0.0001754	$-1.14 \cdot 10^{-7}$	$5.317 \cdot 10^{-6}$	$5.317 \cdot 10^{-6}$	$-1.128 \cdot 10^{-7}$
cQl1	-0.000474	-0.000474	$-6.329 \cdot 10^{-8}$	0.002031	0.002031	0
cQ13	0.000474	0.000474	$-6.329 \cdot 10^{-8}$	0.002031	0.002031	0
${\tt cbBIm}$	$-3.976 \cdot 10^{-21}$	$9.338 \cdot 10^{-21}$	3.349	0.0006493	0.0006493	$3.542 \cdot 10^{-7}$
cbBRe	$-2.134 \cdot 10^{-5}$	$-2.134 \cdot 10^{-5}$	$4.687 \cdot 10^{-8}$	0.000634	0.000634	$3.47 \cdot 10^{-7}$
${\tt cbWIm}$	$1.767 \cdot 10^{-21}$	$1.723 \cdot 10^{-21}$	0.02481	0.0006216	0.0006216	$-1.126 \cdot 10^{-7}$
cbWRe	$6.816 \cdot 10^{-6}$	$6.816 \cdot 10^{-6}$	$6.603 \cdot 10^{-7}$	0.0006219	0.0006219	$-1.126 \cdot 10^{-7}$
cbl	0.01082	0.01082	$2.773 \cdot 10^{-7}$	0.2512	0.2512	0
sm	0	0	0	0.0001591	0.0001591	$5.658 \cdot 10^{-7}$

# 1.53 $b\bar{b} \rightarrow b\bar{b}$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
cHDD	$2.592 \cdot 10^{-5}$	$2.592 \cdot 10^{-5}$	0	$1.765 \cdot 10^{-10}$	$1.765 \cdot 10^{-10}$	0		
cHQ1	-0.004948	-0.004948	$-8.083 \cdot 10^{-8}$	$5.275 \cdot 10^{-5}$	$5.275 \cdot 10^{-5}$	0		
cHQ3	-0.008053	-0.008053	$-6.209 \cdot 10^{-8}$	$8.694 \cdot 10^{-5}$	$8.694 \cdot 10^{-5}$	$-3.451 \cdot 10^{-8}$		
cHWB	-0.001189	-0.001189	$8.413 \cdot 10^{-8}$	$3.536 \cdot 10^{-5}$	$3.536 \cdot 10^{-5}$	$2.262 \cdot 10^{-7}$		
cHbq	0.01723	0.01723	$3.482 \cdot 10^{-7}$	0.002555	0.002555	$-1.174 \cdot 10^{-7}$		
cQQ1	-0.04388	-0.04388	$-2.279 \cdot 10^{-8}$	0.5216	0.5216	0		
cQQ8	-0.01103	-0.01103	0	0.04883	0.04883	0		
cQb1	0.01785	0.01785	$3.361 \cdot 10^{-7}$	3.213	3.213	0		
cQb8	-6.803	-6.803	0	0.4608	0.4608	0		
$\mathtt{cbBIm}$	$-9.038 \cdot 10^{-19}$	$4 \cdot 10^{-18}$	5.425	0.007773	0.007773	$3.602 \cdot 10^{-7}$		
cbBRe	0.0004197	0.0004197	$1.43 \cdot 10^{-7}$	0.004745	0.004745	$3.582 \cdot 10^{-7}$		
cbGIm	$-1.574 \cdot 10^{-19}$	$-1.073 \cdot 10^{-19}$	0.3182	0.08977	0.08977	0		
cbGRe	-0.01606	-0.01606	0	0.1526	0.1526	0		
$\mathtt{cbHIm}$	$-1.261 \cdot 10^{-19}$	$-1.262 \cdot 10^{-19}$	-0.00068	$2.824 \cdot 10^{-6}$	$2.824 \cdot 10^{-6}$	0		
cbHRe	0.003948	0.003948	0	$4.926 \cdot 10^{-6}$	$4.926 \cdot 10^{-6}$	0		

cbWIm	$2.305 \cdot 10^{-18}$	$8.381 \cdot 10^{-19}$	0.6364	0.2343	0.2343	$-1.281 \cdot 10^{-7}$
cbWRe	0.01223	0.01223	$-8.18 \cdot 10^{-8}$	0.2343	0.2343	$-1.281 \cdot 10^{-7}$
cbb	-0.1326	-0.1326	0	1.103	1.103	0
$\mathtt{sm}$	0	0	0	45.63	45.63	0

# **1.54** $b\bar{b} \rightarrow d\bar{d}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-6.502 \cdot 10^{-15}$	$-6.502 \cdot 10^{-15}$	0	$9.831 \cdot 10^{-17}$	$9.831 \cdot 10^{-17}$	0	
cHQ1	0.0005198	0.0005198	$-1.539 \cdot 10^{-7}$	$1.7 \cdot 10^{-5}$	$1.7\cdot10^{-5}$	$-1.177 \cdot 10^{-7}$	
cHQ3	0.0007246	0.0007246	$-1.518 \cdot 10^{-7}$	$2.353 \cdot 10^{-5}$	$2.353 \cdot 10^{-5}$	$-1.275 \cdot 10^{-7}$	
cHWB	0.0002489	0.0002489	$8.036 \cdot 10^{-8}$	$3.739 \cdot 10^{-6}$	$3.739 \cdot 10^{-6}$	$2.674 \cdot 10^{-7}$	
cHbq	$-8.9 \cdot 10^{-5}$	$-8.9 \cdot 10^{-5}$	$2.809 \cdot 10^{-7}$	$4.326 \cdot 10^{-5}$	$4.326 \cdot 10^{-5}$	$-1.156 \cdot 10^{-7}$	
cHd	$-8.902 \cdot 10^{-5}$	$-8.902 \cdot 10^{-5}$	$2.921 \cdot 10^{-7}$	$4.326 \cdot 10^{-5}$	$4.326 \cdot 10^{-5}$	$-1.156 \cdot 10^{-7}$	
cHj1	0.0007246	0.0007246	$-1.518 \cdot 10^{-7}$	$2.353 \cdot 10^{-5}$	$2.353 \cdot 10^{-5}$	$-1.275 \cdot 10^{-7}$	
сНј3	0.000855	0.000855	$-1.521 \cdot 10^{-7}$	$2.771 \cdot 10^{-5}$	$2.771 \cdot 10^{-5}$	$-1.083 \cdot 10^{-7}$	
cQd1	-0.0009672	-0.0009672	$3.515 \cdot 10^{-7}$	0.06655	0.06655	0	
cQd8	0.3403	0.3403	0	0.1148	0.1148	0	
cQj11	0.001104	0.001104	$-9.056 \cdot 10^{-8}$	0.005043	0.005043	0	
cQj18	0.3069	0.3069	0	0.1036	0.1036	0	
cQj31	0.1021	0.1021	$-9.796 \cdot 10^{-8}$	0.4661	0.4661	0	
cQj38	0.3626	0.3626	0	0.1224	0.1224	0	
cbBIm	$1.606 \cdot 10^{-21}$	$1.57 \cdot 10^{-21}$	0.02246	0.001066	0.001066	$3.754 \cdot 10^{-7}$	
cbBRe	$-9.913 \cdot 10^{-6}$	$-9.913 \cdot 10^{-6}$	$4.035 \cdot 10^{-8}$	0.0008826	0.0008826	$3.626 \cdot 10^{-7}$	
cbGIm	$2.298 \cdot 10^{-25}$	$-2.068 \cdot 10^{-25}$	1.9	0.03227	0.03227	0	
cbGRe	-0.004666	-0.004666	0	0.03897	0.03897	0	
cbHIm	$-2.321 \cdot 10^{-29}$	$-2.301 \cdot 10^{-29}$	0.008498	$6.823 \cdot 10^{-13}$	$6.823 \cdot 10^{-13}$	0	
cbHRe	$-5.432 \cdot 10^{-13}$	$-5.432 \cdot 10^{-13}$	0	$6.822 \cdot 10^{-13}$	$6.822 \cdot 10^{-13}$	0	

$\mathtt{cbWIm}$	$3.342 \cdot 10^{-21}$	$3.312 \cdot 10^{-21}$	0.009185	0.001705	0.001705	$-5.864 \cdot 10^{-8}$
cbWRe	$-1.957 \cdot 10^{-6}$	$-1.957 \cdot 10^{-6}$	$-3.116 \cdot 10^{-6}$	0.001706	0.001706	$-1.172 \cdot 10^{-7}$
cbd1	0.009503	0.009503	$3.473 \cdot 10^{-7}$	0.3331	0.3331	0
cbd8	0.003332	0.003332	0	0.001121	0.001121	0
cbj1	-0.00146	-0.00146	$3.425 \cdot 10^{-7}$	0.1007	0.1007	0
cbj8	0.005523	0.005523	0	0.00186	0.00186	0
$\mathtt{cdBIm}$	$-1.588 \cdot 10^{-29}$	$-1.057 \cdot 10^{-31}$	0.9933	$6.805 \cdot 10^{-13}$	$6.805 \cdot 10^{-13}$	$3.527 \cdot 10^{-7}$
cdBRe	$-5.312 \cdot 10^{-13}$	$-5.312 \cdot 10^{-13}$	$-3.765 \cdot 10^{-8}$	$7.667 \cdot 10^{-13}$	$7.667 \cdot 10^{-13}$	$3.652 \cdot 10^{-7}$
$\mathtt{cdGIm}$	$-1.627 \cdot 10^{-27}$	$-1.931 \cdot 10^{-27}$	-0.1871	$2.804 \cdot 10^{-11}$	$2.804 \cdot 10^{-11}$	0
cdGRe	$-1.398 \cdot 10^{-10}$	$-1.398 \cdot 10^{-10}$	0	$2.322 \cdot 10^{-11}$	$2.322 \cdot 10^{-11}$	0
$\mathtt{cdHIm}$	$3.565 \cdot 10^{-30}$	$3.98 \cdot 10^{-30}$	-0.1164	$3.933 \cdot 10^{-16}$	$3.933 \cdot 10^{-16}$	0
cdHRe	$-1.304 \cdot 10^{-14}$	$-1.304 \cdot 10^{-14}$	0	$3.933 \cdot 10^{-16}$	$3.933 \cdot 10^{-16}$	0
$\mathtt{cdWIm}$	$2.495 \cdot 10^{-30}$	$-2.972 \cdot 10^{-29}$	12.91	$3.561 \cdot 10^{-12}$	$3.561 \cdot 10^{-12}$	$-1.123 \cdot 10^{-7}$
cdWRe	$-3.426 \cdot 10^{-12}$	$-3.426 \cdot 10^{-12}$	$-1.751 \cdot 10^{-7}$	$4.54 \cdot 10^{-12}$	$4.54 \cdot 10^{-12}$	$-8.811 \cdot 10^{-8}$
cjQbd1Im	$4.402 \cdot 10^{-29}$	$8.893 \cdot 10^{-29}$	-1.02	$1.439 \cdot 10^{-9}$	$1.439 \cdot 10^{-9}$	0
cjQbd1Re	$1.038 \cdot 10^{-11}$	$1.038 \cdot 10^{-11}$	0	$1.439 \cdot 10^{-9}$	$1.439 \cdot 10^{-9}$	0
cjQbd8Im	$-1.996 \cdot 10^{-27}$	$-1.255 \cdot 10^{-27}$	0.371	$3.198 \cdot 10^{-10}$	$3.198 \cdot 10^{-10}$	0
cjQbd8Re	$1.583 \cdot 10^{-11}$	$1.583 \cdot 10^{-11}$	0	$3.198 \cdot 10^{-10}$	$3.198 \cdot 10^{-10}$	0
sm	0	0	0	0.8471	0.8471	0

# $1.55 \quad b\bar{b} \to t\bar{t}$

		interfere	ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-5.193 \cdot 10^{-6}$	$-5.193 \cdot 10^{-6}$	0	$1.185 \cdot 10^{-7}$	$1.185 \cdot 10^{-7}$	0		
cHQ1	-0.0007303	-0.0007303	$3.15 \cdot 10^{-7}$	$6.32 \cdot 10^{-6}$	$6.32 \cdot 10^{-6}$	$7.12 \cdot 10^{-7}$		
cHQ3	-0.0153	-0.0153	$6.536 \cdot 10^{-8}$	0.003801	0.003801	$-2.631 \cdot 10^{-8}$		
cHWB	-0.001419	-0.001419	$7.047 \cdot 10^{-8}$	$2.389 \cdot 10^{-5}$	$2.389 \cdot 10^{-5}$	$2.511 \cdot 10^{-7}$		
cHbq	-0.0001203	-0.0001203	$7.483 \cdot 10^{-7}$	$5.446 \cdot 10^{-6}$	$5.446 \cdot 10^{-6}$	$6.611 \cdot 10^{-7}$		

cHt	-0.001289	-0.001289	$-7.755 \cdot 10^{-8}$	$1.461 \cdot 10^{-5}$	$1.461 \cdot 10^{-5}$	$-6.843 \cdot 10^{-8}$
cHtbIm	$3.987 \cdot 10^{-20}$	$-6.693 \cdot 10^{-21}$	1.168	0.0006009	0.0006009	$-4.992 \cdot 10^{-8}$
cHtbRe	0.001433	0.001433	0	0.006565	0.006565	$-1.675 \cdot 10^{-7}$
cQQ1	-2.142	-2.142	$-1.4\cdot10^{-7}$	2.923	2.923	0
cQQ8	0.03212	0.03212	$6.227 \cdot 10^{-8}$	0.02635	0.02635	0
cQb1	-0.002037	-0.002037	$3.437 \cdot 10^{-7}$	0.02106	0.02106	0
cQb8	0.02703	0.02703	0	0.002499	0.002499	0
cQt1	-0.0967	-0.0967	$-5.17 \cdot 10^{-8}$	0.02106	0.02106	0
cQt8	-0.1001	-0.1001	$-9.991 \cdot 10^{-8}$	0.002499	0.002499	0
cQtQb1Im	$7.878 \cdot 10^{-19}$	$3.698 \cdot 10^{-18}$	-3.695	1.079	1.079	0
cQtQb1Re	-0.004711	-0.004711	$-2.123 \cdot 10^{-8}$	0.7713	0.7713	0
cQtQb8Im	$-5.136 \cdot 10^{-19}$	$-1.321 \cdot 10^{-18}$	-1.571	0.09828	0.09828	0
cQtQb8Re	0.001545	0.001545	0	0.1233	0.1233	0
cbBIm	$-3.095 \cdot 10^{-20}$	$2.069 \cdot 10^{-20}$	1.668	0.001815	0.001815	$3.306 \cdot 10^{-7}$
cbBRe	0.0003862	0.0003862	$1.554 \cdot 10^{-7}$	0.001977	0.001977	$3.54 \cdot 10^{-7}$
$\mathtt{cbGIm}$	$-6.723 \cdot 10^{-20}$	$-3.834 \cdot 10^{-19}$	-4.703	0.02276	0.02276	0
cbGRe	-0.004738	-0.004738	0	0.021	0.021	0
$\mathtt{cbHIm}$	$-2.612 \cdot 10^{-21}$	$-2.306 \cdot 10^{-21}$	0.1171	0.0008223	0.0008223	0
cbHRe	-0.0004167	-0.0004167	0	0.0008222	0.0008222	0
$\mathtt{cbWIm}$	$7.055 \cdot 10^{-18}$	$1.392 \cdot 10^{-18}$	0.8027	0.9812	0.9812	$-9.173 \cdot 10^{-8}$
cbWRe	-0.01781	-0.01781	0	0.9811	0.9811	$-9.173 \cdot 10^{-8}$
ctBIm	$-1.461 \cdot 10^{-18}$	$-1.961 \cdot 10^{-18}$	-0.3426	0.000492	0.000492	$3.659 \cdot 10^{-7}$
ctBRe	0.003605	0.003605	$5.547 \cdot 10^{-8}$	0.00122	0.00122	$4.1 \cdot 10^{-7}$
$\mathtt{ctGIm}$	$7.856 \cdot 10^{-18}$	$8.561 \cdot 10^{-18}$	-0.08971	0.01504	0.01504	0
ctGRe	-0.1246	-0.1246	0	0.01662	0.01662	0
$\mathtt{ctHIm}$	$1.372 \cdot 10^{-21}$	$9.662 \cdot 10^{-22}$	0.2958	$5.466 \cdot 10^{-7}$	$5.466 \cdot 10^{-7}$	0
ctHRe	$-9.971 \cdot 10^{-6}$	$-9.971 \cdot 10^{-6}$	0	$4.813 \cdot 10^{-7}$	$4.813 \cdot 10^{-7}$	0
$\mathtt{ctWIm}$	$-4.017 \cdot 10^{-17}$	$-5.064 \cdot 10^{-17}$	-0.2607	0.005091	0.005091	$-1.179 \cdot 10^{-7}$
ctWRe	-0.001029	-0.001029	$2.236 \cdot 10^{-6}$	0.07719	0.07719	$-1.166 \cdot 10^{-7}$

ctb1	-0.04211	-0.04211	$3.562 \cdot 10^{-7}$	0.7308	0.7308	0
ctb8	0.1695	0.1695	0	0.05058	0.05058	0
sm	0	0	0	4.395	4.395	$-2.048 \cdot 10^{-7}$

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

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		interference				square		
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		mod1		$1-\mathtt{mod}2/\mathtt{mod}1$	mod1		$1-{\tt mod2/mod1}$	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	cHDD	$-1.38 \cdot 10^{-15}$	$-1.38 \cdot 10^{-15}$	0	$2.103 \cdot 10^{-17}$	$2.103 \cdot 10^{-17}$	0	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	cHQ1	0.001173	0.001173	$-2.558 \cdot 10^{-7}$	$3.311 \cdot 10^{-5}$	$3.311 \cdot 10^{-5}$	$-3.322 \cdot 10^{-7}$	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	cHQ3	0.0009514	0.0009514	$-2.838 \cdot 10^{-7}$	$2.691 \cdot 10^{-5}$	$2.691 \cdot 10^{-5}$	$-3.344 \cdot 10^{-7}$	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	cHWB	$3.064 \cdot 10^{-6}$	$3.064 \cdot 10^{-6}$	$4.243 \cdot 10^{-7}$	$2.936 \cdot 10^{-7}$	$2.936 \cdot 10^{-7}$	$2.384 \cdot 10^{-7}$	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	cHbq	$-3.831 \cdot 10^{-5}$	$-3.831 \cdot 10^{-5}$	$8.874 \cdot 10^{-7}$	$7.974 \cdot 10^{-6}$	$7.974 \cdot 10^{-6}$	$-1.254 \cdot 10^{-8}$	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	cHj1	-0.001165	-0.001165	$-1.716 \cdot 10^{-7}$	$4.037 \cdot 10^{-5}$	$4.037 \cdot 10^{-5}$	$-1.486 \cdot 10^{-7}$	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	сНј3	$7.532 \cdot 10^{-5}$	$7.532 \cdot 10^{-5}$	$-3.187 \cdot 10^{-7}$	$3.945 \cdot 10^{-6}$	$3.945 \cdot 10^{-6}$	$7.604 \cdot 10^{-8}$	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	сНи	0.0001223	0.0001223	$3.272 \cdot 10^{-7}$	$2.879 \cdot 10^{-5}$	$2.879 \cdot 10^{-5}$	$-1.389 \cdot 10^{-7}$	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	cQj11	-0.07122	-0.07122	$-1.264 \cdot 10^{-7}$	0.3483	0.3483	0	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cQj18	0.5302	0.5302	0	0.1789	0.1789	0	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cQj31	0.1646	0.1646	$-1.215 \cdot 10^{-7}$	0.8052	0.8052	0	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cQj38	-0.03903	-0.03903	0	0.01317	0.01317	0	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cQu1	0.01665	0.01665	$3.605 \cdot 10^{-7}$	0.5724	0.5724	0	
$\begin{array}{llllllllllllllllllllllllllllllllllll$	cQu8	0.006955	0.006955	0	0.002343	0.002343	0	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	cQujb1Im	$-5.936 \cdot 10^{-30}$		7.065	$1.777 \cdot 10^{-11}$	$1.777 \cdot 10^{-11}$	0	
cQujb8Re $-6.783 \cdot 10^{-14}$ $-6.783 \cdot 10^{-14}$ 0 $1.905 \cdot 10^{-16}$ $1.905 \cdot 10^{-16}$ 0 cbBIm $2.261 \cdot 10^{-22}$ $-1.339 \cdot 10^{-22}$ $1.592$ $4.863 \cdot 10^{-5}$ $4.863 \cdot 10^{-5}$ $3.496 \cdot 10^{-7}$ cbBRe $3.018 \cdot 10^{-5}$ $3.018 \cdot 10^{-5}$ $2.651 \cdot 10^{-7}$ 0.003669 0.003669 $3.543 \cdot 10^{-7}$	cQujb1Re	$-1.668 \cdot 10^{-13}$	$-1.668 \cdot 10^{-13}$	0	$1.777 \cdot 10^{-11}$	$1.777 \cdot 10^{-11}$	0	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	cQujb8Im	$1.988 \cdot 10^{-30}$	$1.9 \cdot 10^{-30}$	0.04408	$1.905 \cdot 10^{-16}$	$1.905 \cdot 10^{-16}$	0	
cbBRe $3.018 \cdot 10^{-5}$ $3.018 \cdot 10^{-5}$ $2.651 \cdot 10^{-7}$ $0.003669$ $0.003669$ $3.543 \cdot 10^{-7}$	cQujb8Re	$-6.783 \cdot 10^{-14}$	$-6.783 \cdot 10^{-14}$	0	$1.905 \cdot 10^{-16}$	$1.905 \cdot 10^{-16}$	0	
	cbBIm	$2.261 \cdot 10^{-22}$	$-1.339 \cdot 10^{-22}$	1.592	$4.863 \cdot 10^{-5}$	$4.863 \cdot 10^{-5}$	$3.496 \cdot 10^{-7}$	
	cbBRe	$3.018 \cdot 10^{-5}$	$3.018 \cdot 10^{-5}$	$2.651 \cdot 10^{-7}$	0.003669	0.003669	$3.543 \cdot 10^{-7}$	
$ \text{cbGIm} \qquad -9.191 \cdot 10^{-26}  -9.191 \cdot 10^{-26}  -1.447 \cdot 10^{-6} \qquad \qquad 0.03986 \qquad \qquad 0.03986 \qquad \qquad 0 $	cbGIm	$-9.191 \cdot 10^{-26}$	$-9.191 \cdot 10^{-26}$	$-1.447 \cdot 10^{-6}$	0.03986	0.03986	0	

cbGRe	-0.004666	-0.004666	0	0.0005339	0.0005339	0
$\mathtt{cbHIm}$	$-3.232 \cdot 10^{-31}$	$6.93 \cdot 10^{-31}$	3.144	$1.46 \cdot 10^{-13}$	$1.46 \cdot 10^{-13}$	0
cbHRe	$-1.15 \cdot 10^{-13}$	$-1.15 \cdot 10^{-13}$	0	$1.46 \cdot 10^{-13}$	$1.46 \cdot 10^{-13}$	0
cbWIm	$1.755 \cdot 10^{-19}$	$3.731 \cdot 10^{-19}$	-1.126	0.006237	0.006237	$-1.122 \cdot 10^{-7}$
cbWRe	-0.0001199	-0.0001199	$-1.667 \cdot 10^{-7}$	0.006238	0.006238	$-1.122 \cdot 10^{-7}$
cbj1	-0.0001511	-0.0001511	$3.309 \cdot 10^{-7}$	0.01054	0.01054	0
cbj8	0.01369	0.01369	0	0.004617	0.004617	0
cbu1	-0.04595	-0.04595	$3.482 \cdot 10^{-7}$	0.8052	0.8052	0
cbu8	0.03903	0.03903	0	0.01317	0.01317	0
cjuQb1Im	$-3.599 \cdot 10^{-28}$	$-4.577 \cdot 10^{-29}$	0.8728	$7.696 \cdot 10^{-11}$	$7.696 \cdot 10^{-11}$	0
cjuQb1Re	$-3.715 \cdot 10^{-12}$	$-3.715 \cdot 10^{-12}$	0	$7.696 \cdot 10^{-11}$	$7.696 \cdot 10^{-11}$	0
cjuQb8Im	$1.052 \cdot 10^{-29}$	$4.908 \cdot 10^{-30}$	0.5333	$1.71 \cdot 10^{-11}$	$1.71 \cdot 10^{-11}$	0
cjuQb8Re	$-2.661 \cdot 10^{-14}$	$-2.661 \cdot 10^{-14}$	0	$1.71 \cdot 10^{-11}$	$1.71 \cdot 10^{-11}$	0
cuBIm	$1.195 \cdot 10^{-30}$	$9.838 \cdot 10^{-30}$	-7.233	$1.625 \cdot 10^{-13}$	$1.625 \cdot 10^{-13}$	$3.691 \cdot 10^{-7}$
cuBRe	$-2.321 \cdot 10^{-14}$	$-2.321 \cdot 10^{-14}$	$1.723 \cdot 10^{-6}$	$1.238 \cdot 10^{-13}$	$1.238 \cdot 10^{-13}$	$3.232 \cdot 10^{-7}$
cuGIm	$-8.835 \cdot 10^{-29}$	$-7.818 \cdot 10^{-29}$	0.1151	$4.527 \cdot 10^{-12}$	$4.527 \cdot 10^{-12}$	0
cuGRe	$-2.992 \cdot 10^{-11}$	$-2.992 \cdot 10^{-11}$	0	$4.527 \cdot 10^{-12}$	$4.527 \cdot 10^{-12}$	0
cuHIm	$2.526 \cdot 10^{-32}$	$4.163 \cdot 10^{-31}$	-15.48	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
cuHRe	$-2.761 \cdot 10^{-15}$	$-2.761 \cdot 10^{-15}$	0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
cuWIm	$-2.68 \cdot 10^{-30}$	$-1.339 \cdot 10^{-29}$	-3.997	$1.32 \cdot 10^{-14}$	$1.32 \cdot 10^{-14}$	$-1.515 \cdot 10^{-7}$
cuWRe	$-1.7 \cdot 10^{-13}$	$-1.7 \cdot 10^{-13}$	$-5.296 \cdot 10^{-7}$	$7.329 \cdot 10^{-13}$	$7.329 \cdot 10^{-13}$	$-1.092 \cdot 10^{-7}$
sm	0	0	0	0.5077	0.5077	0

### 1.57 $b\bar{t} \rightarrow e^-\bar{\nu}_e$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
cHQ3	$6.304 \cdot 10^{-6}$	$6.304 \cdot 10^{-6}$	$-2.221 \cdot 10^{-7}$	$1.911 \cdot 10^{-7}$	$1.911 \cdot 10^{-7}$	$-2.093 \cdot 10^{-7}$	
cH13	0.0004277	0.0004277	$-2.104 \cdot 10^{-7}$	$1.296 \cdot 10^{-5}$	$1.296 \cdot 10^{-5}$	$-2.314 \cdot 10^{-7}$	

$\mathtt{cHtbIm}$	$-1.515 \cdot 10^{-21}$	$-1.861 \cdot 10^{-22}$	0.8771	$3.833 \cdot 10^{-6}$	$3.833 \cdot 10^{-6}$	$-2.087 \cdot 10^{-7}$
cHtbRe	$-6.534 \cdot 10^{-7}$	$-6.534 \cdot 10^{-7}$	$-2.143 \cdot 10^{-7}$	$1.171 \cdot 10^{-5}$	$1.171 \cdot 10^{-5}$	$-2.563 \cdot 10^{-7}$
cQ13	0.02717	0.02717	$-7.362 \cdot 10^{-8}$	0.1284	0.1284	0
cbWIm	$5.606 \cdot 10^{-20}$	$5.255 \cdot 10^{-20}$	0.06262	0.003867	0.003867	$-1.293 \cdot 10^{-7}$
cbWRe	$-4.3 \cdot 10^{-5}$	$-4.3 \cdot 10^{-5}$	$-1.628 \cdot 10^{-7}$	0.003867	0.003867	$-1.293 \cdot 10^{-7}$
ceWIm	$4.953 \cdot 10^{-29}$	$1.403 \cdot 10^{-28}$	-1.833	$7.482 \cdot 10^{-15}$	$7.482 \cdot 10^{-15}$	$-1.069 \cdot 10^{-7}$
ceWRe	$4.001 \cdot 10^{-15}$	$4.001 \cdot 10^{-15}$	$1.2 \cdot 10^{-6}$	$8.494 \cdot 10^{-15}$	$8.494 \cdot 10^{-15}$	$-1.177 \cdot 10^{-7}$
cleQt1Im	$2.373 \cdot 10^{-16}$	$2.373 \cdot 10^{-16}$	$-4.214 \cdot 10^{-8}$	$7.179 \cdot 10^{-13}$	$7.179 \cdot 10^{-13}$	0
cleQt1Re	$1.434 \cdot 10^{-12}$	$1.434 \cdot 10^{-12}$	0	$7.179 \cdot 10^{-13}$	$7.179 \cdot 10^{-13}$	0
cleQt3Im	$-8.216 \cdot 10^{-16}$	$-8.216 \cdot 10^{-16}$	$-4.868 \cdot 10^{-8}$	$9.197 \cdot 10^{-12}$	$9.197 \cdot 10^{-12}$	0
cleQt3Re	$-4.905 \cdot 10^{-12}$	$-4.905 \cdot 10^{-12}$	0	$9.197 \cdot 10^{-12}$	$9.197 \cdot 10^{-12}$	0
${\tt clebQIm}$	$-5.916 \cdot 10^{-18}$	$-5.916 \cdot 10^{-18}$	$-5.071 \cdot 10^{-8}$	$7.179 \cdot 10^{-13}$	$7.179 \cdot 10^{-13}$	0
clebQRe	$-3.569 \cdot 10^{-14}$	$-3.569 \cdot 10^{-14}$	0	$7.179 \cdot 10^{-13}$	$7.179 \cdot 10^{-13}$	0
ctWIm	$6.607 \cdot 10^{-19}$	$9.016 \cdot 10^{-20}$	0.8635	0.0007642	0.0007642	$-1.047 \cdot 10^{-7}$
ctWRe	$-1.084 \cdot 10^{-5}$	$-1.084 \cdot 10^{-5}$	$-9.224 \cdot 10^{-8}$	$3.363 \cdot 10^{-5}$	$3.363 \cdot 10^{-5}$	$-1.189 \cdot 10^{-7}$
sm	0	0	0	0.001437	0.001437	$-2.088 \cdot 10^{-7}$

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-1.035 \cdot 10^{-13}$	$-1.035 \cdot 10^{-13}$	0	$1.549 \cdot 10^{-15}$	$1.549 \cdot 10^{-15}$	0	
cHWB	-0.0001991	-0.0001991	$5.022 \cdot 10^{-7}$	$2.041 \cdot 10^{-5}$	$2.041 \cdot 10^{-5}$	$2.45 \cdot 10^{-7}$	
сНе	-0.0001186	-0.0001186	$7.59 \cdot 10^{-7}$	$1.944 \cdot 10^{-6}$	$1.944 \cdot 10^{-6}$	$6.688 \cdot 10^{-7}$	
cHj1	$4.429 \cdot 10^{-5}$	$4.429 \cdot 10^{-5}$	$7.676 \cdot 10^{-7}$	$4.378 \cdot 10^{-6}$	$4.378 \cdot 10^{-6}$	$6.853 \cdot 10^{-7}$	
сНј3	0.0003274	0.0003274	$-3.666 \cdot 10^{-7}$	$6.297 \cdot 10^{-6}$	$6.297 \cdot 10^{-6}$	$-6.193 \cdot 10^{-7}$	
cHl1	0.0003413	0.0003413	$-2.344 \cdot 10^{-7}$	$8.542 \cdot 10^{-6}$	$8.542 \cdot 10^{-6}$	$-3.161 \cdot 10^{-7}$	
cH13	0.0001043	0.0001043	$-3.836 \cdot 10^{-7}$	$3.535 \cdot 10^{-6}$	$3.535 \cdot 10^{-6}$	$-1.697 \cdot 10^{-7}$	
cHu	0.0002113	0.0002113	$7.099 \cdot 10^{-7}$	$4.841 \cdot 10^{-6}$	$4.841 \cdot 10^{-6}$	$7.023 \cdot 10^{-7}$	

ceBIm	$-5.204 \cdot 10^{-27}$	$8.076 \cdot 10^{-28}$	1.155	$1.316 \cdot 10^{-10}$	$1.316 \cdot 10^{-10}$	$3.04 \cdot 10^{-7}$
ceBRe	$3.769 \cdot 10^{-10}$	$3.769 \cdot 10^{-10}$	$5.041 \cdot 10^{-7}$	$1.316 \cdot 10^{-10}$	$1.316 \cdot 10^{-10}$	$3.04 \cdot 10^{-7}$
ceHIm	$-1.798 \cdot 10^{-29}$	$-1.33 \cdot 10^{-29}$	0.2604	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
ceHRe	$-2.071 \cdot 10^{-13}$	$-2.071 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
ceWIm	$-2.89 \cdot 10^{-27}$	$-3.267 \cdot 10^{-27}$	-0.1302	$2.309 \cdot 10^{-10}$	$2.309 \cdot 10^{-10}$	$-1.299 \cdot 10^{-7}$
ceWRe	$-1.029 \cdot 10^{-9}$	$-1.029 \cdot 10^{-9}$	$-9.714 \cdot 10^{-8}$	$2.965 \cdot 10^{-10}$	$2.965 \cdot 10^{-10}$	$-1.012 \cdot 10^{-7}$
ceu	-0.04369	-0.04369	$3.662 \cdot 10^{-7}$	0.2552	0.2552	0
cje	-0.0001532	-0.0001532	$3.263 \cdot 10^{-7}$	0.003648	0.003648	0
cleju1Im	$-3.596 \cdot 10^{-28}$	$-8.084 \cdot 10^{-28}$	-1.248	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	0
cleju1Re	$6.596 \cdot 10^{-12}$	$6.596 \cdot 10^{-12}$	0	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	0
cleju3Im	$8.394 \cdot 10^{-28}$	$1.521 \cdot 10^{-27}$	-0.8119	$3.268 \cdot 10^{-11}$	$3.268 \cdot 10^{-11}$	0
cleju3Re	$-2.405 \cdot 10^{-11}$	$-2.405 \cdot 10^{-11}$	0	$4.667 \cdot 10^{-11}$	$4.667 \cdot 10^{-11}$	0
clj1	-0.01203	-0.01203	$-8.313 \cdot 10^{-8}$	0.05175	0.05175	0
clj3	0.02101	0.02101	$-4.76 \cdot 10^{-8}$	0.09038	0.09038	0
clu	-0.0004433	-0.0004433	$3.61 \cdot 10^{-7}$	0.00521	0.00521	0
cuBIm	$6.835 \cdot 10^{-23}$	$1.129 \cdot 10^{-22}$	-0.6522	$1.647 \cdot 10^{-7}$	$1.647 \cdot 10^{-7}$	$3.643 \cdot 10^{-7}$
cuBRe	$-2.168 \cdot 10^{-7}$	$-2.168 \cdot 10^{-7}$	$3.69 \cdot 10^{-7}$	$1.846 \cdot 10^{-8}$	$1.846 \cdot 10^{-8}$	$3.793 \cdot 10^{-7}$
cuHIm	$-7.294 \cdot 10^{-30}$	$1.047 \cdot 10^{-29}$	2.435	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
cuHRe	$-2.019 \cdot 10^{-13}$	$-2.019 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
cuWIm	$-1.758 \cdot 10^{-23}$	$-6.46 \cdot 10^{-23}$	-2.674	$1.139 \cdot 10^{-7}$	$1.139 \cdot 10^{-7}$	$-8.783 \cdot 10^{-8}$
cuWRe	$-1.595 \cdot 10^{-7}$	$-1.595 \cdot 10^{-7}$	$-1.254 \cdot 10^{-7}$	$1.22 \cdot 10^{-8}$	$1.22\cdot 10^{-8}$	$-8.194 \cdot 10^{-8}$
sm	0	0	0	0.001354	0.001354	$2.955 \cdot 10^{-7}$

### $1.59 \quad c\bar{s} \to \tau^+ \nu_{\tau}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНј3	$2.297 \cdot 10^{-5}$	$2.297 \cdot 10^{-5}$	$-2.177 \cdot 10^{-7}$	$6.962 \cdot 10^{-7}$	$6.962 \cdot 10^{-7}$	$-2.155 \cdot 10^{-7}$	
cH13	0.0009518	0.0009518	$-2.206 \cdot 10^{-7}$	$2.885 \cdot 10^{-5}$	$2.885 \cdot 10^{-5}$	$-2.426 \cdot 10^{-7}$	

cHudIm	$3.877 \cdot 10^{-33}$	$4.434 \cdot 10^{-32}$	-10.44	$2.002 \cdot 10^{-16}$	$2.002 \cdot 10^{-16}$	$-1.998 \cdot 10^{-7}$
cHudRe	$-4.004 \cdot 10^{-16}$	$-4.004 \cdot 10^{-16}$	$-2.248 \cdot 10^{-7}$	$2.019 \cdot 10^{-16}$	$2.019 \cdot 10^{-16}$	$-1.981 \cdot 10^{-7}$
$\mathtt{cdWIm}$	$5.993 \cdot 10^{-25}$	$1.376 \cdot 10^{-24}$	-1.296	$4.91 \cdot 10^{-10}$	$4.91 \cdot 10^{-10}$	$-1.018 \cdot 10^{-7}$
cdWRe	$-1.155 \cdot 10^{-9}$	$-1.155 \cdot 10^{-9}$	$-1.732 \cdot 10^{-7}$	$9.787 \cdot 10^{-10}$	$9.787 \cdot 10^{-10}$	$-1.124 \cdot 10^{-7}$
ceWIm	$-8.11 \cdot 10^{-26}$	$-2.457 \cdot 10^{-25}$	-2.03	$2.68 \cdot 10^{-8}$	$2.68 \cdot 10^{-8}$	$-1.12 \cdot 10^{-7}$
ceWRe	$-1.124 \cdot 10^{-8}$	$-1.124 \cdot 10^{-8}$	$-1.779 \cdot 10^{-7}$	$3.391 \cdot 10^{-8}$	$3.391 \cdot 10^{-8}$	$-1.18 \cdot 10^{-7}$
${\tt cledjIm}$	$8.253 \cdot 10^{-16}$	$8.253 \cdot 10^{-16}$	$-6.058 \cdot 10^{-8}$	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	0
cledjRe	$-4.929 \cdot 10^{-12}$	$-4.929 \cdot 10^{-12}$	0	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	0
cleju1Im	$-1.556 \cdot 10^{-13}$	$-1.556 \cdot 10^{-13}$	$-6.426 \cdot 10^{-8}$	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	0
cleju1Re	$9.275 \cdot 10^{-10}$	$9.275 \cdot 10^{-10}$	0	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	0
cleju3Im	$-5.994 \cdot 10^{-13}$	$-5.994 \cdot 10^{-13}$	$-6.673 \cdot 10^{-8}$	$6.832 \cdot 10^{-9}$	$6.832 \cdot 10^{-9}$	0
cleju3Re	$2.897 \cdot 10^{-9}$	$2.897 \cdot 10^{-9}$	0	$4.435 \cdot 10^{-9}$	$4.435 \cdot 10^{-9}$	0
clj3	0.1484	0.1484	$-1.348 \cdot 10^{-7}$	0.7013	0.7013	0
cuWIm	$-3.141 \cdot 10^{-23}$	$2.131 \cdot 10^{-23}$	1.678	$1.825 \cdot 10^{-7}$	$1.825 \cdot 10^{-7}$	$-1.096 \cdot 10^{-7}$
cuWRe	$-3.348 \cdot 10^{-8}$	$-3.348 \cdot 10^{-8}$	$-1.792 \cdot 10^{-7}$	$9.156 \cdot 10^{-8}$	$9.156 \cdot 10^{-8}$	$-1.092 \cdot 10^{-7}$
sm	0	0	0	0.0005661	0.0005661	$-2.297 \cdot 10^{-7}$

### **1.60** $d\bar{d} \rightarrow c\bar{c}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-5.989 \cdot 10^{-16}$	$-5.989 \cdot 10^{-16}$	0	$9.076 \cdot 10^{-18}$	$9.076 \cdot 10^{-18}$	0	
cHWB	$2.792 \cdot 10^{-5}$	$2.792 \cdot 10^{-5}$	$4.656 \cdot 10^{-7}$	$7.294 \cdot 10^{-6}$	$7.294 \cdot 10^{-6}$	$2.468 \cdot 10^{-7}$	
cHd	$1.37 \cdot 10^{-5}$	$1.37 \cdot 10^{-5}$	$-5.838 \cdot 10^{-7}$	$1.452 \cdot 10^{-5}$	$1.452 \cdot 10^{-5}$	$-2.754 \cdot 10^{-7}$	
cHj1	$-3.891 \cdot 10^{-5}$	$-3.891 \cdot 10^{-5}$	$-7.71 \cdot 10^{-8}$	$2.64 \cdot 10^{-6}$	$2.64 \cdot 10^{-6}$	$7.198 \cdot 10^{-7}$	
сНј3	0.0007034	0.0007034	$-2.132 \cdot 10^{-7}$	$4.538 \cdot 10^{-5}$	$4.538 \cdot 10^{-5}$	$-1.763 \cdot 10^{-7}$	
сHu	$6.852 \cdot 10^{-5}$	$6.852 \cdot 10^{-5}$	$4.086 \cdot 10^{-7}$	$1.237 \cdot 10^{-5}$	$1.237 \cdot 10^{-5}$	$-8.085 \cdot 10^{-8}$	
cdBIm	$-5.872 \cdot 10^{-27}$	$-4.202 \cdot 10^{-27}$	0.2845	$2.642 \cdot 10^{-12}$	$2.642 \cdot 10^{-12}$	$3.785 \cdot 10^{-7}$	
cdBRe	$1.075 \cdot 10^{-12}$	$1.075 \cdot 10^{-12}$	$2.791 \cdot 10^{-7}$	$2.574 \cdot 10^{-12}$	$2.574 \cdot 10^{-12}$	$3.496 \cdot 10^{-7}$	

cdGIm	$1.123 \cdot 10^{-34}$	$8.132 \cdot 10^{-34}$	-6.238	$2.797 \cdot 10^{-11}$	$2.797 \cdot 10^{-11}$	0
cdGRe	$-1.398 \cdot 10^{-10}$	$-1.398 \cdot 10^{-10}$	0	$2.001 \cdot 10^{-11}$	$2.001 \cdot 10^{-11}$	0
cdHIm	$8.097 \cdot 10^{-32}$	$2.979 \cdot 10^{-32}$	0.6321	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
cdHRe	$-1.19 \cdot 10^{-15}$	$-1.19 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
cdWIm	$-1.125 \cdot 10^{-26}$	$-8.619 \cdot 10^{-27}$	0.234	$4.636 \cdot 10^{-12}$	$4.636 \cdot 10^{-12}$	$-1.294 \cdot 10^{-7}$
cdWRe	$-3.544 \cdot 10^{-12}$	$-3.544 \cdot 10^{-12}$	$-1.693 \cdot 10^{-7}$	$4.517 \cdot 10^{-12}$	$4.517 \cdot 10^{-12}$	$-1.107 \cdot 10^{-7}$
cjd1	-0.003328	-0.003328	$3.606 \cdot 10^{-7}$	0.2379	0.2379	0
cjd8	0.2694	0.2694	0	0.09092	0.09092	0
cjj11	-0.0531	-0.0531	$-1.318 \cdot 10^{-7}$	0.5194	0.5194	0
cjj18	0.3137	0.3137	0	0.2118	0.2118	0
cjj31	0.1073	0.1073	$-1.864 \cdot 10^{-7}$	1.05	1.05	0
cjj38	-0.7917	-0.7917	0	0.5344	0.5344	0
cju1	0.00762	0.00762	$3.543 \cdot 10^{-7}$	0.262	0.262	0
cju8	0.1726	0.1726	0	0.05823	0.05823	0
cjujd11Im	$7.014 \cdot 10^{-31}$	$9.932 \cdot 10^{-31}$	-0.416	$7.016 \cdot 10^{-15}$	$7.016 \cdot 10^{-15}$	0
cjujd11Re	$2.561 \cdot 10^{-15}$	$2.561 \cdot 10^{-15}$	0	$3.132 \cdot 10^{-17}$	$3.132 \cdot 10^{-17}$	0
cjujd1Im	$-2.771 \cdot 10^{-30}$	$-6.669 \cdot 10^{-31}$	0.7593	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0
cjujd1Re	$-3.863 \cdot 10^{-14}$	$-3.863 \cdot 10^{-14}$	0	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0
cjujd81Im	$-2.604 \cdot 10^{-31}$	$-3.933 \cdot 10^{-31}$	-0.5103	$1.74 \cdot 10^{-15}$	$1.74 \cdot 10^{-15}$	0
cjujd81Re	$-8.011 \cdot 10^{-15}$	$-8.011 \cdot 10^{-15}$	0	$7.468 \cdot 10^{-16}$	$7.468 \cdot 10^{-16}$	0
cjujd8Im	$-2.466 \cdot 10^{-31}$	$-4.219 \cdot 10^{-31}$	-0.7109	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0
cjujd8Re	$-1.405 \cdot 10^{-15}$	$-1.405 \cdot 10^{-15}$	0	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0
cuBIm	$-3.848 \cdot 10^{-24}$	$8.733 \cdot 10^{-24}$	3.27	$5.355 \cdot 10^{-8}$	$5.355 \cdot 10^{-8}$	$3.548 \cdot 10^{-7}$
cuBRe	$7.787 \cdot 10^{-9}$	$7.787 \cdot 10^{-9}$	$-2.029 \cdot 10^{-6}$	$5.805 \cdot 10^{-8}$	$5.805 \cdot 10^{-8}$	$3.618 \cdot 10^{-7}$
cuGIm	$6.015 \cdot 10^{-22}$	$6.081 \cdot 10^{-22}$	-0.011	$2.123 \cdot 10^{-6}$	$2.123 \cdot 10^{-6}$	0
cuGRe	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$2.123 \cdot 10^{-6}$	$2.123 \cdot 10^{-6}$	0
cuHIm	$4.488 \cdot 10^{-32}$	$5.823 \cdot 10^{-32}$	-0.2975	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
cuHRe	$-1.19 \cdot 10^{-15}$	$-1.19 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
cuWIm	$6.781 \cdot 10^{-25}$	$2.006 \cdot 10^{-23}$	-28.58	$3.349 \cdot 10^{-7}$	$3.349 \cdot 10^{-7}$	$-1.194 \cdot 10^{-7}$

cuWRe	$-1.907 \cdot 10^{-7}$	$-1.907 \cdot 10^{-7}$	$-2.622 \cdot 10^{-7}$	$3.437 \cdot 10^{-7}$	$3.437 \cdot 10^{-7}$	$-1.164 \cdot 10^{-7}$
cud1	-0.03431	-0.03431	$3.498 \cdot 10^{-7}$	0.6012	0.6012	0
cud8	0.6063	0.6063	0	0.2046	0.2046	0
sm	0	0	0	0.5274	0.5274	0

# $1.61 \quad d\bar{d} \rightarrow e^+e^-$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-3.243 \cdot 10^{-23}$	$-3.243 \cdot 10^{-23}$	0	$4.898 \cdot 10^{-25}$	$4.898 \cdot 10^{-25}$	0		
cHWB	$-7.061 \cdot 10^{-5}$	$-7.061 \cdot 10^{-5}$	$-8.498 \cdot 10^{-8}$	$2.437 \cdot 10^{-6}$	$2.437 \cdot 10^{-6}$	$2.462 \cdot 10^{-7}$		
cHd	$-4.145 \cdot 10^{-5}$	$-4.145 \cdot 10^{-5}$	$8.443 \cdot 10^{-7}$	$2.998 \cdot 10^{-6}$	$2.998 \cdot 10^{-6}$	$4.003 \cdot 10^{-7}$		
сНе	$-3.806 \cdot 10^{-5}$	$-3.806 \cdot 10^{-5}$	$3.679 \cdot 10^{-7}$	$5.027 \cdot 10^{-6}$	$5.027 \cdot 10^{-6}$	$-1.193 \cdot 10^{-7}$		
cHj1	0.0001498	0.0001498	$-4.673 \cdot 10^{-7}$	$3.827 \cdot 10^{-6}$	$3.827 \cdot 10^{-6}$	$-4.964 \cdot 10^{-7}$		
сНј3	$5.323 \cdot 10^{-5}$	$5.323 \cdot 10^{-5}$	$7.139 \cdot 10^{-7}$	$4.754 \cdot 10^{-6}$	$4.754 \cdot 10^{-6}$	$6.941 \cdot 10^{-7}$		
cHl1	$1.995 \cdot 10^{-5}$	$1.995 \cdot 10^{-5}$	$-7.018 \cdot 10^{-7}$	$1.434 \cdot 10^{-6}$	$1.434 \cdot 10^{-6}$	$6.974 \cdot 10^{-8}$		
cH13	0.0002351	0.0002351	$-2.127 \cdot 10^{-7}$	$8.856 \cdot 10^{-6}$	$8.856 \cdot 10^{-6}$	$-1.242 \cdot 10^{-7}$		
cdBIm	$-2.579 \cdot 10^{-27}$	$-2.727 \cdot 10^{-27}$	-0.0574	$1.895 \cdot 10^{-12}$	$1.895 \cdot 10^{-12}$	$3.694 \cdot 10^{-7}$		
cdBRe	$1.299 \cdot 10^{-12}$	$1.299 \cdot 10^{-12}$	$2.309 \cdot 10^{-7}$	$1.854 \cdot 10^{-12}$	$1.854 \cdot 10^{-12}$	$3.236 \cdot 10^{-7}$		
cdHIm	$7.756 \cdot 10^{-40}$	$8.062 \cdot 10^{-40}$	-0.03947	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0		
cdHRe	$-6.438 \cdot 10^{-23}$	$-6.438 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0		
cdWIm	$3.235 \cdot 10^{-27}$	$3.234 \cdot 10^{-27}$	0.000187	$2.182 \cdot 10^{-13}$	$2.182 \cdot 10^{-13}$	$-9.166 \cdot 10^{-8}$		
cdWRe	$-1.415 \cdot 10^{-12}$	$-1.415 \cdot 10^{-12}$	$-2.12 \cdot 10^{-7}$	$1.226 \cdot 10^{-12}$	$1.226 \cdot 10^{-12}$	$-1.631 \cdot 10^{-7}$		
ceBIm	$2.844 \cdot 10^{-30}$	$2.851 \cdot 10^{-30}$	-0.002351	$2.547 \cdot 10^{-15}$	$2.547 \cdot 10^{-15}$	$3.926 \cdot 10^{-7}$		
ceBRe	$4.303 \cdot 10^{-16}$	$4.303 \cdot 10^{-16}$	$4.021 \cdot 10^{-6}$	$2.547 \cdot 10^{-15}$	$2.547 \cdot 10^{-15}$	$3.926 \cdot 10^{-7}$		
ceHIm	$-2.898 \cdot 10^{-39}$	$-1.02 \cdot 10^{-39}$	0.6479	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0		
ceHRe	$-6.486 \cdot 10^{-23}$	$-6.486 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0		
$\mathtt{ceWIm}$	$4.787 \cdot 10^{-30}$	$4.743 \cdot 10^{-30}$	0.00929	$1.508 \cdot 10^{-14}$	$1.508 \cdot 10^{-14}$	$-6.631 \cdot 10^{-8}$		
ceWRe	$-7.191 \cdot 10^{-15}$	$-7.191 \cdot 10^{-15}$	$-4.172 \cdot 10^{-7}$	$1.843 \cdot 10^{-14}$	$1.843 \cdot 10^{-14}$	$-1.085 \cdot 10^{-7}$		

ced	0.01505	0.01505	$3.321 \cdot 10^{-7}$	0.1759	0.1759	0
cje	-0.004272	-0.004272	$3.511 \cdot 10^{-7}$	0.09794	0.09794	0
cld	0.001061	0.001061	$3.769 \cdot 10^{-7}$	0.02496	0.02496	0
${\tt cledjIm}$	$2.971 \cdot 10^{-44}$	$-1.045 \cdot 10^{-38}$	$3.516\cdot 10^5$	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	0
cledjRe	$-2.074 \cdot 10^{-21}$	$-2.074 \cdot 10^{-21}$	0	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	0
clj1	0.02762	0.02762	$-1.448 \cdot 10^{-7}$	0.1454	0.1454	0
clj3	0.0334	0.0334	$-1.497 \cdot 10^{-7}$	0.1759	0.1759	0
sm	0	0	0	0.001613	0.001613	$-1.24 \cdot 10^{-7}$

## **1.62** $d\bar{d} \rightarrow s\bar{s}$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-3.204 \cdot 10^{-18}$	$-3.204 \cdot 10^{-18}$	0	$4.867 \cdot 10^{-20}$	$4.867 \cdot 10^{-20}$	0		
cHWB	$8.73 \cdot 10^{-5}$	$8.73 \cdot 10^{-5}$	$1.947 \cdot 10^{-7}$	$5.616 \cdot 10^{-6}$	$5.616 \cdot 10^{-6}$	$2.493 \cdot 10^{-7}$		
cHd	$-7.171 \cdot 10^{-5}$	$-7.171 \cdot 10^{-5}$	$7.112 \cdot 10^{-7}$	$6.594 \cdot 10^{-6}$	$6.594 \cdot 10^{-6}$	$7.128 \cdot 10^{-7}$		
cHj1	0.0003544	0.0003544	$-1.129 \cdot 10^{-7}$	$2.334 \cdot 10^{-5}$	$2.334 \cdot 10^{-5}$	$-8.57 \cdot 10^{-8}$		
сНјЗ	0.002659	0.002659	$-1.504 \cdot 10^{-7}$	0.0001719	0.0001719	$-1.163 \cdot 10^{-7}$		
cdBIm	$-3.264 \cdot 10^{-26}$	$-1.569 \cdot 10^{-26}$	0.5191	$2.761 \cdot 10^{-10}$	$2.761 \cdot 10^{-10}$	$3.622 \cdot 10^{-7}$		
cdBRe	$-1.879 \cdot 10^{-10}$	$-1.879 \cdot 10^{-10}$	0	$3.122 \cdot 10^{-10}$	$3.122 \cdot 10^{-10}$	$3.523 \cdot 10^{-7}$		
$\mathtt{cdGIm}$	$-9.54 \cdot 10^{-25}$	$-1.027 \cdot 10^{-24}$	-0.0763	$1.142 \cdot 10^{-8}$	$1.142 \cdot 10^{-8}$	0		
cdGRe	$-5.56 \cdot 10^{-8}$	$-5.56 \cdot 10^{-8}$	0	$6.353 \cdot 10^{-9}$	$6.353 \cdot 10^{-9}$	0		
$\mathtt{cdHIm}$	$-2.408 \cdot 10^{-34}$	$-1.485 \cdot 10^{-34}$	0.3832	$3.893 \cdot 10^{-19}$	$3.893 \cdot 10^{-19}$	0		
cdHRe	$-1.286 \cdot 10^{-17}$	$-1.286 \cdot 10^{-17}$	0	$7.787 \cdot 10^{-19}$	$7.787 \cdot 10^{-19}$	0		
$\mathtt{cdWIm}$	$-2.152 \cdot 10^{-26}$	$-1.938 \cdot 10^{-26}$	0.09915	$5.064 \cdot 10^{-10}$	$5.064 \cdot 10^{-10}$	$-1.185 \cdot 10^{-7}$		
cdWRe	$-1.165 \cdot 10^{-9}$	$-1.165 \cdot 10^{-9}$	$-1.716 \cdot 10^{-7}$	$1.849 \cdot 10^{-9}$	$1.849 \cdot 10^{-9}$	$-1.082 \cdot 10^{-7}$		
cdd1	0.04894	0.04894	$3.474 \cdot 10^{-7}$	3.43	3.43	0		
cdd8	0.3331	0.3331	0	0.2248	0.2248	0		
cjd1	-0.000159	-0.000159	$3.145 \cdot 10^{-7}$	0.01094	0.01094	0		

cjd8	0.0004975	0.0004975	0	0.0001679	0.0001679	0
cjj11	0.4212	0.4212	$-9.498 \cdot 10^{-8}$	3.846	3.846	0
cjj18	0.1433	0.1433	0	0.0967	0.0967	0
cjj31	0.3756	0.3756	$-1.065 \cdot 10^{-7}$	3.43	3.43	0
cjj38	0.03671	0.03671	0	0.02478	0.02478	0
sm	0	0	0	0.9501	0.9501	0

# **1.63** $e^+\nu_{\mu} \to e^+\nu_{\mu}$

		interfe	erence		square			
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHWB	0.01887	0.01887	$4.77 \cdot 10^{-7}$	0.001036	0.001036	$2.896 \cdot 10^{-7}$		
сНе	-0.003182	-0.003182	$3.457 \cdot 10^{-7}$	0.0002065	0.0002065	0		
cHl1	-0.0009487	-0.0009487	$8.116 \cdot 10^{-7}$	$3.645 \cdot 10^{-5}$	$3.645 \cdot 10^{-5}$	$7.134 \cdot 10^{-7}$		
cH13	0.009829	0.009829	$2.035 \cdot 10^{-8}$	0.0006395	0.0006395	$-4.691 \cdot 10^{-8}$		
ceBIm	$2.577 \cdot 10^{-28}$	$2.825 \cdot 10^{-29}$	0.8904	$2.326 \cdot 10^{-13}$	$2.326 \cdot 10^{-13}$	$3.87 \cdot 10^{-7}$		
ceBRe	$2.004 \cdot 10^{-13}$	$2.004 \cdot 10^{-13}$	$2.495 \cdot 10^{-7}$	$2.326 \cdot 10^{-13}$	$2.326 \cdot 10^{-13}$	$3.87 \cdot 10^{-7}$		
ceWIm	$4.688 \cdot 10^{-28}$	$6.918 \cdot 10^{-29}$	0.8524	$7.631 \cdot 10^{-13}$	$7.631 \cdot 10^{-13}$	$-1.048 \cdot 10^{-7}$		
ceWRe	$1.101 \cdot 10^{-13}$	$1.101 \cdot 10^{-13}$	0	$1.607 \cdot 10^{-13}$	$1.607 \cdot 10^{-13}$	$-1.244 \cdot 10^{-7}$		
cle	-0.3552	-0.3552	$3.66 \cdot 10^{-7}$	1	1	0		
cll	0.834	0.834	$-3.117 \cdot 10^{-7}$	2.495	2.495	0		
sm	0	0	0	0.00509	0.00509	$6.876 \cdot 10^{-7}$		

# **1.64** $e^+\nu_e \to \mu^+\nu_\mu$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
cHl3	0.003227	0.003227	$-2.479 \cdot 10^{-7}$	0.0001956	0.0001956	$-2.044 \cdot 10^{-7}$		
ceWIm	$-1.131 \cdot 10^{-25}$	$-3.38 \cdot 10^{-27}$	0.9701	$1.758 \cdot 10^{-9}$	$1.758 \cdot 10^{-9}$	$-1.138 \cdot 10^{-7}$		

ceWRe cll1 sm	$-2.908 \cdot 10^{-9} \\ 0.2516 \\ 0$	$-2.908 \cdot 10^{-9} \\ 0.2516 \\ 0$	$-1.72 \cdot 10^{-7} \\ -1.192 \cdot 10^{-7} \\ 0$		$1.74 \cdot 10^{-9}$ $1.189$ $1.73 \cdot 10^{-6}$	1.189	$-1.266 \cdot 10^{-7}$ 0 $-2.313 \cdot 10^{-7}$
1.65	$e^+\nu_e \to e^+\nu_e$						
			square				
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHWB	0.002548	0.002548	$5.103 \cdot 10^{-7}$		0.0001399	0.0001399	$2.859 \cdot 10^{-7}$
сНе	-0.00251	-0.00251	$3.586 \cdot 10^{-7}$		0.0001628	0.0001628	0
cHl1	-0.0006626	-0.0006626	$8.451 \cdot 10^{-7}$		$2.664 \cdot 10^{-5}$	$2.664 \cdot 10^{-5}$	$7.131 \cdot 10^{-7}$
cH13	0.001061	0.001061	$2.828 \cdot 10^{-7}$		$4.777 \cdot 10^{-5}$	$4.777 \cdot 10^{-5}$	$1.675 \cdot 10^{-7}$
ceBIm	$-3.476 \cdot 10^{-27}$	$-3.282 \cdot 10^{-27}$	0.05567	4	$4.586 \cdot 10^{-14}$	$4.586 \cdot 10^{-14}$	$3.707 \cdot 10^{-7}$
ceBRe	$9.068 \cdot 10^{-14}$	$9.068 \cdot 10^{-14}$	$2.316 \cdot 10^{-7}$	4	$4.586 \cdot 10^{-14}$	$4.586 \cdot 10^{-14}$	$3.707 \cdot 10^{-7}$
ceWIm	$-6.49 \cdot 10^{-27}$	$-6.815 \cdot 10^{-27}$	-0.05012	ļ	$5.866 \cdot 10^{-15}$	$5.866 \cdot 10^{-15}$	$-1.023 \cdot 10^{-7}$
ceWRe	$-3.368 \cdot 10^{-14}$	$-3.368 \cdot 10^{-14}$	$-9.797 \cdot 10^{-7}$		$1.152 \cdot 10^{-14}$	$1.152 \cdot 10^{-14}$	$-1.736 \cdot 10^{-7}$
cle	-0.1462	-0.1462	$4.103 \cdot 10^{-7}$		1	1	0
cll	0.2286	0.2286	$-1.749 \cdot 10^{-7}$		0.6836	0.6836	0
cll1	0.02054	0.02054	$-1.947 \cdot 10^{-7}$		0.06963	0.06963	0
sm	0	0	0		0.01062	0.01062	$2.826 \cdot 10^{-7}$
1.66	$e^+\tau^- \to e^+\tau^-$						
		interfere	ence			square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD		$-2.187 \cdot 10^{-17}$	$9.145 \cdot 10^{-8}$		$1.81 \cdot 10^{-19}$	$1.81 \cdot 10^{-19}$	0

 $3.474 \cdot 10^{-7}$ 

 $-4.928 \cdot 10^{-6}$ 

 $8.132 \cdot 10^{-7}$ 

0.002323

0.0008244

 $4.729 \cdot 10^{-5}$ 

0.002323

0.0008244

 $4.729 \cdot 10^{-5}$ 

 $2.583 \cdot 10^{-7}$ 

 $-3.639 \cdot 10^{-8}$ 

 $6.132 \cdot 10^{-7}$ 

-0.05469

0.001664

-0.001353

cHWB

сНе

cHl1

-0.05469

0.001664

-0.001353

cH13	70.57	70.57	$-3.84 \cdot 10^{-6}$	1.415	1.415	$-2.827 \cdot 10^{-7}$
ceBIm	$3.426 \cdot 10^{-16}$	$3.426 \cdot 10^{-16}$	$5.05\cdot10^{-6}$	$1.328 \cdot 10^{-5}$	$1.328\cdot10^{-5}$	$3.013 \cdot 10^{-7}$
ceBRe	$-2.017 \cdot 10^{-6}$	$-2.017 \cdot 10^{-6}$	$1.983 \cdot 10^{-7}$	$1.328 \cdot 10^{-5}$	$1.328 \cdot 10^{-5}$	$3.766 \cdot 10^{-7}$
$\mathtt{ceHIm}$	$-1.254 \cdot 10^{-26}$	$-1.254 \cdot 10^{-26}$	$-5.105 \cdot 10^{-6}$	$1.481 \cdot 10^{-18}$	$1.481 \cdot 10^{-18}$	0
ceHRe	$-8.748 \cdot 10^{-17}$	$-8.748 \cdot 10^{-17}$	$1.029 \cdot 10^{-7}$	$2.896 \cdot 10^{-18}$	$2.896 \cdot 10^{-18}$	0
ceWIm	$1.322 \cdot 10^{-15}$	$1.322 \cdot 10^{-15}$	$-3.782 \cdot 10^{-7}$	$8.444 \cdot 10^{-6}$	$8.444 \cdot 10^{-6}$	$-9.474 \cdot 10^{-8}$
ceWRe	$9.324 \cdot 10^{-7}$	$9.324 \cdot 10^{-7}$	$-7.293 \cdot 10^{-7}$	$6.508 \cdot 10^{-6}$	$6.508 \cdot 10^{-6}$	$-9.219 \cdot 10^{-8}$
cee	-0.9216	-0.9216	$3.581 \cdot 10^{-7}$	2.053	2.053	0
cle	-867.6	-867.6	$2.536 \cdot 10^{-7}$	2	2	0
cll	-1.375	-1.375	0	2.356	2.356	0
cll1	-900.1	-900.1	$2.333 \cdot 10^{-7}$	3.996	3.996	0
sm	0	0	0	0.008985	0.008985	$7.123 \cdot 10^{-7}$

## **1.67** $e^+e^- \to \mu^+\mu^-$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-4.869 \cdot 10^{-20}$	$-4.869 \cdot 10^{-20}$	0	$7.521 \cdot 10^{-22}$	$7.521 \cdot 10^{-22}$	0		
cHWB	-0.001478	-0.001478	$4.738 \cdot 10^{-7}$	$8.112 \cdot 10^{-5}$	$8.112 \cdot 10^{-5}$	$2.465 \cdot 10^{-7}$		
сНе	0.0009309	0.0009309	$4.297 \cdot 10^{-8}$	$3.364 \cdot 10^{-5}$	$3.364 \cdot 10^{-5}$	$-6.242 \cdot 10^{-7}$		
cHl1	0.001527	0.001527	$-3.929 \cdot 10^{-7}$	$5.218 \cdot 10^{-5}$	$5.218 \cdot 10^{-5}$	$-5.941 \cdot 10^{-7}$		
cH13	-0.0003807	-0.0003807	$1.156 \cdot 10^{-6}$	$2.22 \cdot 10^{-5}$	$2.22 \cdot 10^{-5}$	$4.054 \cdot 10^{-7}$		
ceBIm	$2.836 \cdot 10^{-26}$	$5.223 \cdot 10^{-26}$	-0.8415	$1.287 \cdot 10^{-9}$	$1.287 \cdot 10^{-9}$	$3.886 \cdot 10^{-7}$		
ceBRe	$3.382 \cdot 10^{-9}$	$3.382 \cdot 10^{-9}$	$5.027 \cdot 10^{-7}$	$1.287 \cdot 10^{-9}$	$1.287 \cdot 10^{-9}$	$3.886 \cdot 10^{-7}$		
ceHIm	$-9.596 \cdot 10^{-37}$	$2.12 \cdot 10^{-36}$	3.209	$6.017 \cdot 10^{-21}$	$6.017 \cdot 10^{-21}$	0		
ceHRe	$-1.948 \cdot 10^{-19}$	$-1.948 \cdot 10^{-19}$	0	$1.203 \cdot 10^{-20}$	$1.203 \cdot 10^{-20}$	0		
ceWIm	$-2.869 \cdot 10^{-26}$	$1.366 \cdot 10^{-26}$	1.476	$8.509 \cdot 10^{-10}$	$8.509 \cdot 10^{-10}$	$-1.058 \cdot 10^{-7}$		
ceWRe	$-2.038 \cdot 10^{-9}$	$-2.038 \cdot 10^{-9}$	$2.454 \cdot 10^{-7}$	$7.656 \cdot 10^{-10}$	$7.656 \cdot 10^{-10}$	$-1.045 \cdot 10^{-7}$		
cee	0.004039	0.004039	$3.467 \cdot 10^{-7}$	0.03145	0.03145	0		

cle	0.1397	0.1397	$3.58 \cdot 10^{-7}$	1.095	1.095	0
cll	0.005474	0.005474	0	0.03982	0.03982	0
cll1	0.03722	0.03722	0	0.2707	0.2707	0
sm	0	0	0	0.00687	0.006869	$5.823 \cdot 10^{-7}$

### **1.68** $e^+e^- \to e^+e^-$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$3.552 \cdot 10^{-14}$	$3.552 \cdot 10^{-14}$	$3.66 \cdot 10^{-7}$	$5.087 \cdot 10^{-26}$	$5.087 \cdot 10^{-26}$	0	
cHWB	-0.00446	-0.00446	$4.708 \cdot 10^{-7}$	0.0002427	0.0002427	$2.472 \cdot 10^{-7}$	
сНе	0.002542	0.002542	$7.867 \cdot 10^{-8}$	$8.762 \cdot 10^{-5}$	$8.762 \cdot 10^{-5}$	$-6.277 \cdot 10^{-7}$	
cHl1	0.03817	0.03817	$-2.515 \cdot 10^{-6}$	0.006035	0.006035	$-1.16 \cdot 10^{-7}$	
cH13	-0.003241	-0.003241	$8.023 \cdot 10^{-7}$	0.0001147	0.0001147	$6.103 \cdot 10^{-7}$	
ceBIm	$7.369 \cdot 10^{-30}$	$4.265 \cdot 10^{-29}$	-4.787	$7.756 \cdot 10^{-13}$	$7.756 \cdot 10^{-13}$	$3.481 \cdot 10^{-7}$	
ceBRe	$3.756 \cdot 10^{-13}$	$3.756 \cdot 10^{-13}$	$5.591 \cdot 10^{-7}$	$7.756 \cdot 10^{-13}$	$7.756 \cdot 10^{-13}$	$3.481 \cdot 10^{-7}$	
ceHIm	$6.116 \cdot 10^{-31}$	$6.116 \cdot 10^{-31}$	$3.597 \cdot 10^{-7}$	$5.434 \cdot 10^{-25}$	$5.434 \cdot 10^{-25}$	0	
ceHRe	$1.421 \cdot 10^{-13}$	$1.421 \cdot 10^{-13}$	$3.519 \cdot 10^{-7}$	$8.139 \cdot 10^{-25}$	$8.139 \cdot 10^{-25}$	0	
ceWIm	$4.163 \cdot 10^{-30}$	$1.415 \cdot 10^{-29}$	-2.399	$5.076 \cdot 10^{-13}$	$5.076 \cdot 10^{-13}$	$-9.85 \cdot 10^{-8}$	
ceWRe	$-2.408 \cdot 10^{-13}$	$-2.408 \cdot 10^{-13}$	$3.322 \cdot 10^{-7}$	$3.905 \cdot 10^{-13}$	$3.905 \cdot 10^{-13}$	$-1.28 \cdot 10^{-7}$	
cee	-0.01363	-0.01363	$3.67 \cdot 10^{-7}$	0.7705	0.7705	0	
cle	-0.3895	-0.3895	$3.594 \cdot 10^{-7}$	2.611	2.611	0	
cll	-0.0337	-0.0337	$2.967 \cdot 10^{-8}$	1.273	1.273	0	
cll1	-0.1756	-0.1756	$5.694 \cdot 10^{-8}$	3.202	3.202	0	
$\mathtt{sm}$	0	0	0	0.01672	0.01672	$7.177 \cdot 10^{-7}$	

**1.69**  $gg \rightarrow gg$ 

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cG	$-3.166 \cdot 10^{-9}$	$-3.166 \cdot 10^{-9}$	0	112.4	112.4	0
cGtil	$-1.595 \cdot 10^{-14}$	$-1.595 \cdot 10^{-14}$	0	112.4	112.4	0
cHGtil	$6.198 \cdot 10^{-15}$	$6.198 \cdot 10^{-15}$	0	$3.006 \cdot 10^{-32}$	$3.006 \cdot 10^{-32}$	0
sm	0	0	0	49.25	49.25	0

### $\textbf{1.70} \quad gg \rightarrow ggg$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сG	-0.001438	-0.001438	0	0.02132	0.02132	0
cGtil	0.001434	0.001434	0	0.02132	0.02132	0
cHGtil	$-8.026 \cdot 10^{-15}$	$-8.026 \cdot 10^{-15}$	0	$1.979 \cdot 10^{-26}$	$1.979 \cdot 10^{-26}$	0
sm	0	0	0	0.0299	0.0299	0

## 1.71 $gg \rightarrow t\bar{t}$

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сG	-0.04114	-0.04114	0	2.137	2.137	0
cGtil	$-1.55 \cdot 10^{-17}$	$-1.55 \cdot 10^{-17}$	0	2.137	2.137	0
cHG	-0.1694	-0.1694	0	0.04069	0.04069	0
cHGtil	$2.368 \cdot 10^{-18}$	$2.368 \cdot 10^{-18}$	0	0.04069	0.04069	0
$\mathtt{ctGIm}$	$-8.296 \cdot 10^{-18}$	$-8.296 \cdot 10^{-18}$	0	0.08644	0.08644	0
ctGRe	-1.187	-1.187	0	0.1384	0.1384	0
sm	0	0	0	1.089	1.089	0

### 1.72 $gg \rightarrow u\bar{u}$

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
сG	$-1.475 \cdot 10^{-10}$	$-1.475 \cdot 10^{-10}$	0	0.4935	0.4935	0	
cGtil	$-5.139 \cdot 10^{-18}$	$-5.139 \cdot 10^{-18}$	0	0.4935	0.4935	0	
сНG	$-7.323 \cdot 10^{-12}$	$-7.323 \cdot 10^{-12}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0	
cHGtil	$2.529 \cdot 10^{-27}$	$2.529 \cdot 10^{-27}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0	
$\mathtt{cuGIm}$	$-1.732 \cdot 10^{-27}$	$-1.732 \cdot 10^{-27}$	0	$1.398 \cdot 10^{-11}$	$1.398 \cdot 10^{-11}$	0	
cuGRe	$-4.528 \cdot 10^{-11}$	$-4.528 \cdot 10^{-11}$	0	$1.398 \cdot 10^{-11}$	$1.398 \cdot 10^{-11}$	0	
sm	0	0	0	0.5304	0.5304	0	

### 1.73 $s\bar{s} \rightarrow \nu_{\tau}\bar{\nu}_{\tau}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHWB	$3.319 \cdot 10^{-5}$	$3.319 \cdot 10^{-5}$	$4.821 \cdot 10^{-7}$	$1.821 \cdot 10^{-6}$	$1.821 \cdot 10^{-6}$	$2.197 \cdot 10^{-7}$	
cHd	$-5.098 \cdot 10^{-6}$	$-5.098 \cdot 10^{-6}$	$3.727 \cdot 10^{-7}$	$9.924 \cdot 10^{-7}$	$9.924 \cdot 10^{-7}$	0	
cHj1	$9.626 \cdot 10^{-8}$	$9.626 \cdot 10^{-8}$	$-6.233 \cdot 10^{-8}$	$3.456 \cdot 10^{-9}$	$3.456 \cdot 10^{-9}$	0	
сНј3	$2.397 \cdot 10^{-5}$	$2.397 \cdot 10^{-5}$	$-8.343 \cdot 10^{-8}$	$8.607 \cdot 10^{-7}$	$8.607 \cdot 10^{-7}$	0	
cHl1	-0.0003057	-0.0003057	$-1.309 \cdot 10^{-7}$	$9.266 \cdot 10^{-6}$	$9.266 \cdot 10^{-6}$	$-1.295 \cdot 10^{-7}$	
cH13	$9.586 \cdot 10^{-5}$	$9.586 \cdot 10^{-5}$	$-7.303 \cdot 10^{-8}$	$2.906 \cdot 10^{-6}$	$2.906 \cdot 10^{-6}$	$-6.883 \cdot 10^{-8}$	
$\mathtt{cdBIm}$	$-4.089 \cdot 10^{-26}$	$-1.631 \cdot 10^{-26}$	0.6011	$9.013 \cdot 10^{-12}$	$9.013 \cdot 10^{-12}$	$3.55 \cdot 10^{-7}$	
cdBRe	$-1.419 \cdot 10^{-10}$	$-1.419 \cdot 10^{-10}$	$-7.046 \cdot 10^{-8}$	$1.806 \cdot 10^{-10}$	$1.806 \cdot 10^{-10}$	$3.875 \cdot 10^{-7}$	
cdWIm	$8.189 \cdot 10^{-25}$	$1.776 \cdot 10^{-25}$	0.7831	$3.819 \cdot 10^{-10}$	$3.819 \cdot 10^{-10}$	$-1.047 \cdot 10^{-7}$	
cdWRe	$-2.571 \cdot 10^{-10}$	$-2.571 \cdot 10^{-10}$	$-2.723 \cdot 10^{-7}$	$5.928 \cdot 10^{-10}$	$5.928 \cdot 10^{-10}$	$-1.012 \cdot 10^{-7}$	
cld	0.005131	0.005131	$3.508 \cdot 10^{-7}$	0.1191	0.1191	0	
clj1	-0.04911	-0.04911	$-6.109 \cdot 10^{-8}$	0.2103	0.2103	0	
clj3	0.01259	0.01259	0	0.05393	0.05393	0	
sm	0	0	0	0.002874	0.002874	$-1.392 \cdot 10^{-7}$	

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

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	$1.167 \cdot 10^{-8}$	$1.167 \cdot 10^{-8}$	0	$4.35 \cdot 10^{-17}$	$4.35 \cdot 10^{-17}$	0
cHWB	-0.0001357	-0.0001357	$-2.211 \cdot 10^{-7}$	$2.45 \cdot 10^{-5}$	$2.45\cdot10^{-5}$	$2.449 \cdot 10^{-7}$
cHd	0.001377	0.001377	$3.632 \cdot 10^{-7}$	0.0003202	0.0003202	$-1.249 \cdot 10^{-7}$
cHj1	-0.001602	-0.001602	$-6.244 \cdot 10^{-8}$	$2.123 \cdot 10^{-5}$	$2.123 \cdot 10^{-5}$	$1.413 \cdot 10^{-7}$
cHj3	-0.003789	-0.003789	$-7.917 \cdot 10^{-8}$	$4.193 \cdot 10^{-5}$	$4.193 \cdot 10^{-5}$	$2.385 \cdot 10^{-8}$
$\mathtt{cdBIm}$	$-6.407 \cdot 10^{-24}$	$5.805 \cdot 10^{-25}$	1.091	$1.35 \cdot 10^{-9}$	$1.35 \cdot 10^{-9}$	$2.963 \cdot 10^{-7}$
cdBRe	$3.392 \cdot 10^{-9}$	$3.392 \cdot 10^{-9}$	$1.474 \cdot 10^{-7}$	$2.961 \cdot 10^{-9}$	$2.961 \cdot 10^{-9}$	$3.377 \cdot 10^{-7}$
$\mathtt{cdGIm}$	$-8.815 \cdot 10^{-25}$	$-4.765 \cdot 10^{-24}$	-4.406	$6.068 \cdot 10^{-8}$	$6.068 \cdot 10^{-8}$	0
cdGRe	$-2.248 \cdot 10^{-7}$	$-2.248 \cdot 10^{-7}$	0	$1.195 \cdot 10^{-7}$	$1.195 \cdot 10^{-7}$	0
$\mathtt{cdHIm}$	$-5.481 \cdot 10^{-25}$	$-5.481 \cdot 10^{-25}$	$9.853 \cdot 10^{-7}$	$3.95 \cdot 10^{-16}$	$3.95 \cdot 10^{-16}$	0
cdHRe	$4.778 \cdot 10^{-8}$	$4.778 \cdot 10^{-8}$	0	$6.948 \cdot 10^{-16}$	$6.948 \cdot 10^{-16}$	0
$\mathtt{cdWIm}$	$-1.1 \cdot 10^{-23}$	$3.233 \cdot 10^{-23}$	3.938	$1.17 \cdot 10^{-8}$	$1.17\cdot 10^{-8}$	$-8.546 \cdot 10^{-8}$
cdWRe	$-1.387 \cdot 10^{-8}$	$-1.387 \cdot 10^{-8}$	0	$1.745 \cdot 10^{-8}$	$1.745 \cdot 10^{-8}$	$-1.146 \cdot 10^{-7}$
cdd1	-0.09387	-0.09387	$1.065 \cdot 10^{-8}$	0.9017	0.9017	0
cdd8	-0.1065	-0.1065	0	0.2002	0.2002	0
cjd1	0.02434	0.02434	$3.286 \cdot 10^{-7}$	3.006	3.006	0
cjd8	-1.817	-1.817	0	0.5949	0.5949	0
cjj11	-0.4008	-0.4008	$-2.495 \cdot 10^{-8}$	1.865	1.865	0
cjj18	-0.01098	-0.01098	$-9.11 \cdot 10^{-8}$	0.04853	0.04853	0
cjj31	-0.1103	-0.1103	0	0.9017	0.9017	0
cjj38	-0.552	-0.552	$-1.812 \cdot 10^{-8}$	0.419	0.419	0
sm	0	0	0	3.991	3.991	0

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

		interfer	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHQ1	-0.0001312	-0.0001312	$-1.524 \cdot 10^{-7}$	$6.093 \cdot 10^{-6}$	$6.093 \cdot 10^{-6}$	0	
cHQ3	$6.227 \cdot 10^{-6}$	$6.227 \cdot 10^{-6}$	$-7.548 \cdot 10^{-7}$	$5.905 \cdot 10^{-7}$	$5.905 \cdot 10^{-7}$	0	
cHWB	$9.586 \cdot 10^{-5}$	$9.586 \cdot 10^{-5}$	$5.111 \cdot 10^{-7}$	$5.484 \cdot 10^{-6}$	$5.484 \cdot 10^{-6}$	$2.553 \cdot 10^{-7}$	
cHl1	$-6.266 \cdot 10^{-5}$	$-6.266 \cdot 10^{-5}$	$7.661 \cdot 10^{-7}$	$1.899 \cdot 10^{-6}$	$1.899 \cdot 10^{-6}$	$7.371 \cdot 10^{-7}$	
cH13	0.0001057	0.0001057	$-1.892 \cdot 10^{-7}$	$3.204 \cdot 10^{-6}$	$3.204 \cdot 10^{-6}$	$-1.561 \cdot 10^{-7}$	
cHt	0.0001539	0.0001539	$3.898 \cdot 10^{-7}$	$1.653 \cdot 10^{-5}$	$1.653 \cdot 10^{-5}$	0	
cQl1	0.05813	0.05813	$-1.72 \cdot 10^{-7}$	0.3097	0.3097	0	
cQ13	0.05813	0.05813	$-1.72 \cdot 10^{-7}$	0.3097	0.3097	0	
$\mathtt{ctBIm}$	$2.096 \cdot 10^{-19}$	$-2.06 \cdot 10^{-19}$	1.983	0.000619	0.000619	$3.554 \cdot 10^{-7}$	
ctBRe	-0.0002618	-0.0002618	$1.031 \cdot 10^{-6}$	0.0004987	0.0004987	$3.609 \cdot 10^{-7}$	
$\mathtt{ctWIm}$	$1.939 \cdot 10^{-19}$	$-8.352 \cdot 10^{-19}$	5.308	0.0009369	0.0009369	$-1.067 \cdot 10^{-7}$	
ctWRe	0.0004742	0.0004742	$8.225 \cdot 10^{-7}$	0.001637	0.001637	$-1.222 \cdot 10^{-7}$	
ctl	0.00177	0.00177	$-2.26 \cdot 10^{-7}$	0.001452	0.001452	0	
sm	0	0	0	0.00273	0.00273	$-3.297 \cdot 10^{-7}$	

### 1.76 $t\bar{t} \rightarrow \tau^+\tau^-$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-5.037 \cdot 10^{-7}$	$-5.037 \cdot 10^{-7}$	0	$7.629 \cdot 10^{-9}$	$7.629 \cdot 10^{-9}$	0	
cHQ1	$-2.31 \cdot 10^{-5}$	$-2.31 \cdot 10^{-5}$	$-1.732 \cdot 10^{-6}$	$3.161 \cdot 10^{-6}$	$3.161 \cdot 10^{-6}$	$3.163 \cdot 10^{-7}$	
cHQ3	$6.612 \cdot 10^{-5}$	$6.612 \cdot 10^{-5}$	$-7.259 \cdot 10^{-7}$	$3.122 \cdot 10^{-6}$	$3.122 \cdot 10^{-6}$	$3.203 \cdot 10^{-8}$	
cHWB	-0.000181	-0.000181	$2.21 \cdot 10^{-7}$	$9.189 \cdot 10^{-6}$	$9.189 \cdot 10^{-6}$	$2.394 \cdot 10^{-7}$	
сНе	$6.094 \cdot 10^{-5}$	$6.094 \cdot 10^{-5}$	$1.641 \cdot 10^{-7}$	$7.803 \cdot 10^{-6}$	$7.803 \cdot 10^{-6}$	$-3.332 \cdot 10^{-7}$	
cHl1	0.0003751	0.0003751	$-2.399 \cdot 10^{-7}$	$9.104 \cdot 10^{-6}$	$9.104 \cdot 10^{-6}$	$-3.295 \cdot 10^{-7}$	
cH13	$3.075 \cdot 10^{-5}$	$3.075 \cdot 10^{-5}$	$-1.236 \cdot 10^{-6}$	$2.265 \cdot 10^{-6}$	$2.265 \cdot 10^{-6}$	$4.415 \cdot 10^{-8}$	
cHt	$-5.085 \cdot 10^{-5}$	$-5.085 \cdot 10^{-5}$	$-3.54 \cdot 10^{-7}$	$3.952 \cdot 10^{-6}$	$3.952 \cdot 10^{-6}$	$-4.555 \cdot 10^{-7}$	
cQe	-0.008895	-0.008895	$3.598 \cdot 10^{-7}$	0.1713	0.1713	0	

cQl1	-0.04574	-0.04574	$-6.558 \cdot 10^{-8}$	0.1932	0.1932	0
cQ13	0.04574	0.04574	$-6.558 \cdot 10^{-8}$	0.1932	0.1932	0
ceBIm	$1.801 \cdot 10^{-21}$	$-1.512 \cdot 10^{-21}$	1.84	$1.31 \cdot 10^{-7}$	$1.31 \cdot 10^{-7}$	$3.818 \cdot 10^{-7}$
ceBRe	$2.086 \cdot 10^{-7}$	$2.086 \cdot 10^{-7}$	$4.315 \cdot 10^{-7}$	$1.31 \cdot 10^{-7}$	$1.31\cdot 10^{-7}$	$3.818 \cdot 10^{-7}$
$\mathtt{ceHIm}$	$6.336 \cdot 10^{-23}$	$3.57 \cdot 10^{-23}$	0.4366	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	0
ceHRe	$-1.007 \cdot 10^{-6}$	$-1.007 \cdot 10^{-6}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	0
ceWIm	$3.251 \cdot 10^{-21}$	$-2.775 \cdot 10^{-21}$	1.854	$2.235 \cdot 10^{-7}$	$2.235 \cdot 10^{-7}$	$-1.342 \cdot 10^{-7}$
ceWRe	$-5.765 \cdot 10^{-7}$	$-5.765 \cdot 10^{-7}$	$-1.735 \cdot 10^{-8}$	$1.244 \cdot 10^{-7}$	$1.244 \cdot 10^{-7}$	$-1.607 \cdot 10^{-7}$
cleQt1Im	$1.119 \cdot 10^{-21}$	$1.139 \cdot 10^{-21}$	-0.01764	$1.738 \cdot 10^{-5}$	$1.738 \cdot 10^{-5}$	0
cleQt1Re	$3.433 \cdot 10^{-5}$	$3.433 \cdot 10^{-5}$	0	$1.738 \cdot 10^{-5}$	$1.738 \cdot 10^{-5}$	0
cleQt3Im	$-7.027 \cdot 10^{-21}$	$-3.535 \cdot 10^{-21}$	0.4969	0.0001401	0.0001401	0
cleQt3Re	$9.669 \cdot 10^{-5}$	$9.669 \cdot 10^{-5}$	$1.034 \cdot 10^{-8}$	0.0001401	0.0001401	0
ctBIm	$-6.81 \cdot 10^{-19}$	$-1.404 \cdot 10^{-18}$	-1.061	0.001609	0.001609	$3.728 \cdot 10^{-7}$
ctBRe	-0.00216	-0.00216	$4.167 \cdot 10^{-7}$	0.003296	0.003296	$3.641 \cdot 10^{-7}$
$\mathtt{ctHIm}$	$4.172 \cdot 10^{-23}$	$1.175 \cdot 10^{-22}$	-1.815	$3.492 \cdot 10^{-8}$	$3.492 \cdot 10^{-8}$	0
ctHRe	$-1.006 \cdot 10^{-6}$	$-1.006 \cdot 10^{-6}$	0	$3.099 \cdot 10^{-8}$	$3.099 \cdot 10^{-8}$	0
$\mathtt{ctWIm}$	$3.994 \cdot 10^{-18}$	$7.757 \cdot 10^{-19}$	0.8058	0.002013	0.002013	$-1.49 \cdot 10^{-7}$
ctWRe	-0.001743	-0.001743	$5.739 \cdot 10^{-8}$	0.00218	0.00218	$-9.176 \cdot 10^{-8}$
cte	-0.0484	-0.0484	$3.513 \cdot 10^{-7}$	0.2803	0.2803	0
ctl	-0.004359	-0.004359	$1.377 \cdot 10^{-7}$	0.02405	0.02405	0
sm	0	0	0	0.004229	0.004229	$1.892 \cdot 10^{-7}$

## 1.77 $t\bar{t} \rightarrow c\bar{c}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
cHDD	$-7.713 \cdot 10^{-7}$	$-7.713 \cdot 10^{-7}$	0	$1.169 \cdot 10^{-8}$	$1.169 \cdot 10^{-8}$	0	
cHQ1	$-1.463 \cdot 10^{-5}$	$-1.463 \cdot 10^{-5}$	$-3.827 \cdot 10^{-6}$	$6.156 \cdot 10^{-6}$	$6.156 \cdot 10^{-6}$	$4.223 \cdot 10^{-7}$	
cHQ3	0.0003121	0.0003121	$-3.204 \cdot 10^{-7}$	$1.068 \cdot 10^{-5}$	$1.068 \cdot 10^{-5}$	$-1.872 \cdot 10^{-7}$	

cHWB	-0.0002525	-0.0002525	$1.584 \cdot 10^{-7}$	$1.393 \cdot 10^{-5}$	$1.393 \cdot 10^{-5}$	$2.153 \cdot 10^{-7}$
cHj1	-0.0002929	-0.0003039	$-3.619 \cdot 10^{-7}$	$9.785 \cdot 10^{-6}$	$9.785 \cdot 10^{-6}$	$-1.84 \cdot 10^{-7}$
cHj3	$-7.877 \cdot 10^{-5}$	$-7.877 \cdot 10^{-5}$	$6.982 \cdot 10^{-7}$	$5.822 \cdot 10^{-6}$	$5.822 \cdot 10^{-6}$	$7.729 \cdot 10^{-7}$
cHt	-0.0001898	-0.0001898	$1.054 \cdot 10^{-7}$	$3.235 \cdot 10^{-5}$	$3.235 \cdot 10^{-5}$	$-3.4 \cdot 10^{-7}$
сНи	-0.0001718	-0.0001718	$2.329 \cdot 10^{-7}$	$3.145 \cdot 10^{-5}$	$3.145 \cdot 10^{-5}$	$-3.179 \cdot 10^{-7}$
cQj11	0.007658	0.007658	$-3.918 \cdot 10^{-8}$	0.03124	0.03124	0
cQj18	0.194	0.194	0	0.05884	0.05884	0
cQj31	0.05868	0.05868	$-8.521 \cdot 10^{-8}$	0.2648	0.2648	0
cQj38	0.02103	0.02103	0	0.0004629	0.0004629	0
cQu1	0.03051	0.03051	$3.605 \cdot 10^{-7}$	0.9687	0.9687	0
cQu8	0.1945	0.1945	0	0.059	0.059	0
cjQtu1Im	$-1.251 \cdot 10^{-23}$	$-6.377 \cdot 10^{-24}$	0.4903	0.0001065	0.0001065	0
cjQtu1Re	$2.911 \cdot 10^{-5}$	$2.911 \cdot 10^{-5}$	0	0.0001065	0.0001065	0
cjQtu8Im	$-1.156 \cdot 10^{-21}$	$1.833 \cdot 10^{-22}$	1.159	$2.367 \cdot 10^{-5}$	$2.367 \cdot 10^{-5}$	0
cjQtu8Re	$4.612 \cdot 10^{-5}$	$4.612 \cdot 10^{-5}$	0	$2.367 \cdot 10^{-5}$	$2.367 \cdot 10^{-5}$	0
ctBIm	$-7.74 \cdot 10^{-19}$	$1.389 \cdot 10^{-19}$	1.179	0.00178	0.00178	$3.933 \cdot 10^{-7}$
ctBRe	-0.001206	-0.001206	$4.976 \cdot 10^{-7}$	0.001099	0.001099	$3.64 \cdot 10^{-7}$
$\mathtt{ctGIm}$	$2.616 \cdot 10^{-23}$	$1.536 \cdot 10^{-23}$	0.4128	0.03013	0.03013	0
ctGRe	-0.1986	-0.1986	0	0.0471	0.0471	0
$\mathtt{ctHIm}$	$-1.336 \cdot 10^{-22}$	$-1.305 \cdot 10^{-22}$	0.02338	$5.351 \cdot 10^{-8}$	$5.351 \cdot 10^{-8}$	0
ctHRe	$-1.542 \cdot 10^{-6}$	$-1.542 \cdot 10^{-6}$	0	$4.749 \cdot 10^{-8}$	$4.749 \cdot 10^{-8}$	0
ctWIm	$2.582 \cdot 10^{-20}$	$3.908 \cdot 10^{-20}$	-0.5134	0.006068	0.006068	$-1.154 \cdot 10^{-7}$
ctWRe	-0.001467	-0.001467	$2.044 \cdot 10^{-7}$	0.001928	0.001928	$-1.037 \cdot 10^{-7}$
ctj1	0.01395	0.01395	$1.434 \cdot 10^{-7}$	0.2655	0.2655	0
ctj8	0.6575	0.6575	0	0.2153	0.2153	0
ctu1	0.06179	0.06179	$3.56 \cdot 10^{-7}$	0.5341	0.5341	0
ctu8	0.194	0.194	0	0.05884	0.05884	0
cuBIm	$4.595 \cdot 10^{-22}$	$-2.369 \cdot 10^{-22}$	1.515	$1.117 \cdot 10^{-7}$	$1.117 \cdot 10^{-7}$	$3.582 \cdot 10^{-7}$
cuBRe	$8.203 \cdot 10^{-7}$	$8.203 \cdot 10^{-7}$	$1.585 \cdot 10^{-7}$	$2.886 \cdot 10^{-8}$	$2.886 \cdot 10^{-8}$	$3.465 \cdot 10^{-7}$

cuGIm	$4.676 \cdot 10^{-23}$	$2.448 \cdot 10^{-23}$	0.4766	$3.816 \cdot 10^{-7}$	$3.816 \cdot 10^{-7}$	0
cuGRe	$-1.159 \cdot 10^{-5}$	$-1.159 \cdot 10^{-5}$	0	$3.817 \cdot 10^{-7}$	$3.817 \cdot 10^{-7}$	0
$\mathtt{cuHIm}$	$-3.768 \cdot 10^{-23}$	$-2.989 \cdot 10^{-23}$	0.2067	$4.676 \cdot 10^{-8}$	$4.676 \cdot 10^{-8}$	0
cuHRe	$-1.551 \cdot 10^{-6}$	$-1.551 \cdot 10^{-6}$	0	$4.676 \cdot 10^{-8}$	$4.676 \cdot 10^{-8}$	0
cuWIm	$8.905 \cdot 10^{-24}$	$-1.502 \cdot 10^{-23}$	2.687	$2.286 \cdot 10^{-7}$	$2.286 \cdot 10^{-7}$	$-1.312 \cdot 10^{-7}$
cuWRe	$8.983 \cdot 10^{-7}$	$8.983 \cdot 10^{-7}$	$-8.905 \cdot 10^{-8}$	$4.105 \cdot 10^{-8}$	$4.105 \cdot 10^{-8}$	$-9.743 \cdot 10^{-8}$
sm	0	0	0	0.7996	0.7996	0

### 1.78 $t\bar{t} \rightarrow d\bar{d}$

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
cHDD	$-1.044 \cdot 10^{-11}$	$-1.044 \cdot 10^{-11}$	0	$1.581 \cdot 10^{-13}$	$1.581 \cdot 10^{-13}$	0
cHQ1	-0.0007367	-0.0007367	$-1.9 \cdot 10^{-7}$	$2.602 \cdot 10^{-5}$	$2.602 \cdot 10^{-5}$	$-1.153 \cdot 10^{-7}$
cHQ3	0.0003177	0.0003177	$-2.203 \cdot 10^{-7}$	$1.2 \cdot 10^{-5}$	$1.2 \cdot 10^{-5}$	$-8.334 \cdot 10^{-8}$
cHWB	$-5.658 \cdot 10^{-7}$	$-5.658 \cdot 10^{-7}$	$-2.381 \cdot 10^{-5}$	$8.453 \cdot 10^{-6}$	$8.453 \cdot 10^{-6}$	$2.484 \cdot 10^{-7}$
cHd	$5.531 \cdot 10^{-5}$	$5.531 \cdot 10^{-5}$	$1.266 \cdot 10^{-7}$	$2.15 \cdot 10^{-5}$	$2.15\cdot 10^{-5}$	$-3.256 \cdot 10^{-7}$
cHj1	0.0002726	0.0002726	$-2.568 \cdot 10^{-7}$	$8.809 \cdot 10^{-6}$	$8.809 \cdot 10^{-6}$	$-1.249 \cdot 10^{-7}$
сНј3	0.001067	0.001067	$-2.813 \cdot 10^{-7}$	$2.983 \cdot 10^{-5}$	$2.983 \cdot 10^{-5}$	$-3.352 \cdot 10^{-7}$
cHt	$2.697 \cdot 10^{-5}$	$2.697 \cdot 10^{-5}$	$2.151 \cdot 10^{-6}$	$1.817 \cdot 10^{-6}$	$1.817 \cdot 10^{-6}$	$6.054 \cdot 10^{-7}$
cQd1	-0.001772	-0.001772	$3.386 \cdot 10^{-7}$	0.004931	0.004931	0
cQd8	0.1484	0.1484	0	0.04344	0.04344	0
cQj11	-0.008667	-0.008667	$-1.731 \cdot 10^{-7}$	0.04663	0.04663	0
cQj18	0.1705	0.1705	0	0.05091	0.05091	0
cQj31	0.04598	0.04598	$-1.305 \cdot 10^{-7}$	0.2291	0.2291	0
cQj38	-0.626	-0.626	0	0.2046	0.2046	0
cQtjd1Im	$-5.848 \cdot 10^{-26}$	$-1.042 \cdot 10^{-25}$	-0.7819	$3.601 \cdot 10^{-10}$	$3.601 \cdot 10^{-10}$	0
cQtjd1Re	$-7.078 \cdot 10^{-10}$	$-7.078 \cdot 10^{-10}$	0	$3.601 \cdot 10^{-10}$	$3.601 \cdot 10^{-10}$	0
cQtjd8Im	$-7.472 \cdot 10^{-30}$	$2.865 \cdot 10^{-27}$	384.4	$8.001 \cdot 10^{-11}$	$8.001 \cdot 10^{-11}$	0

#### 1.79 $t\bar{t} \rightarrow s\bar{s}$

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	$-4.152 \cdot 10^{-9}$	$-4.152 \cdot 10^{-9}$	0	$6.269 \cdot 10^{-11}$	$6.269 \cdot 10^{-11}$	0	
cHQ1	$-5.373 \cdot 10^{-5}$	$-5.373 \cdot 10^{-5}$	$-4.839 \cdot 10^{-7}$	$3.66 \cdot 10^{-6}$	$3.66 \cdot 10^{-6}$	$1.093 \cdot 10^{-7}$	
cHQ3	$9.11 \cdot 10^{-5}$	$9.11 \cdot 10^{-5}$	$-3.513 \cdot 10^{-7}$	$4.774 \cdot 10^{-6}$	$4.774 \cdot 10^{-6}$	$2.095 \cdot 10^{-8}$	
cHWB	$2.674 \cdot 10^{-5}$	$2.674 \cdot 10^{-5}$	$1.01\cdot 10^{-6}$	$1.584 \cdot 10^{-5}$	$1.584 \cdot 10^{-5}$	$2.526 \cdot 10^{-7}$	
cHd	$8.147 \cdot 10^{-5}$	$8.147 \cdot 10^{-5}$	$1.841 \cdot 10^{-7}$	$2.95 \cdot 10^{-5}$	$2.95\cdot 10^{-5}$	$-3.389 \cdot 10^{-7}$	
cHj1	0.0001119	0.0001119	0	$5.51 \cdot 10^{-6}$	$5.51\cdot10^{-6}$	$3.267 \cdot 10^{-7}$	
сНјЗ	0.0001402	0.0001402	$-7.134 \cdot 10^{-8}$	$5.985 \cdot 10^{-6}$	$5.985 \cdot 10^{-6}$	$1.838 \cdot 10^{-7}$	
cHt	$6.798 \cdot 10^{-5}$	$6.798 \cdot 10^{-5}$	$6.472 \cdot 10^{-7}$	$2.522 \cdot 10^{-5}$	$2.522 \cdot 10^{-5}$	$-1.19 \cdot 10^{-7}$	
cQd1	-0.008694	-0.008694	$3.566 \cdot 10^{-7}$	0.4996	0.4996	0	
cQd8	0.09708	0.09708	0	0.02613	0.02613	0	
cQj11	-0.0002956	-0.0002956	$-1.556 \cdot 10^{-6}$	0.005691	0.005691	0	
cQj18	0.06963	0.06963	0	0.01687	0.01687	0	
cQj31	0.01465	0.01465	$-2.048 \cdot 10^{-7}$	0.07589	0.07589	0	
cQj38	-0.08835	-0.08835	0	0.02319	0.02319	0	
cQtjd1Im	$-6.25 \cdot 10^{-24}$	$-4.252 \cdot 10^{-25}$	0.932	$1.428 \cdot 10^{-7}$	$1.428 \cdot 10^{-7}$	0	
cQtjd1Re	$-2.818 \cdot 10^{-7}$	$-2.818 \cdot 10^{-7}$	0	$1.428 \cdot 10^{-7}$	$1.428 \cdot 10^{-7}$	0	
cQtjd8Im	$-6.399 \cdot 10^{-25}$	$-1.378 \cdot 10^{-24}$	-1.154	$3.173 \cdot 10^{-8}$	$3.173 \cdot 10^{-8}$	0	
cQtjd8Re	$5.412 \cdot 10^{-9}$	$5.412 \cdot 10^{-9}$	0	$3.173 \cdot 10^{-8}$	$3.173 \cdot 10^{-8}$	0	
$\mathtt{cdBIm}$	$-2.927 \cdot 10^{-25}$	$5.393 \cdot 10^{-24}$	19.42	$8.379 \cdot 10^{-10}$	$8.379 \cdot 10^{-10}$	$3.58\cdot10^{-7}$	
cdBRe	$3.082 \cdot 10^{-9}$	$3.082 \cdot 10^{-9}$	$1.623 \cdot 10^{-7}$	$7.281 \cdot 10^{-10}$	$7.281 \cdot 10^{-10}$	$3.571 \cdot 10^{-7}$	
$\mathtt{cdGIm}$	$-7.432 \cdot 10^{-26}$	$-1.133 \cdot 10^{-25}$	-0.5241	$8.276 \cdot 10^{-9}$	$8.276 \cdot 10^{-9}$	0	
cdGRe	$-6.213 \cdot 10^{-8}$	$-6.213 \cdot 10^{-8}$	0	$1.073 \cdot 10^{-8}$	$1.073 \cdot 10^{-8}$	0	
$\mathtt{cdHIm}$	$4.897 \cdot 10^{-25}$	$6.8 \cdot 10^{-25}$	-0.3886	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0	
cdHRe	$-8.284 \cdot 10^{-9}$	$-8.284 \cdot 10^{-9}$	0	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0	
$\mathtt{cdWIm}$	$9.574 \cdot 10^{-24}$	$1.425 \cdot 10^{-23}$	-0.4883	$1.57 \cdot 10^{-9}$	$1.57\cdot 10^{-9}$	$-1.274 \cdot 10^{-7}$	
cdWRe	$-3.897 \cdot 10^{-9}$	$-3.897 \cdot 10^{-9}$	$-7.697 \cdot 10^{-8}$	$1.226 \cdot 10^{-9}$	$1.226 \cdot 10^{-9}$	$-8.156 \cdot 10^{-8}$	
cjtQd1Im	$2.969 \cdot 10^{-24}$	$6.079 \cdot 10^{-24}$	-1.048	$8.118 \cdot 10^{-8}$	$8.118 \cdot 10^{-8}$	0	

cjtQd1Re	$-3.009 \cdot 10^{-8}$	$-3.009 \cdot 10^{-8}$	0	$8.118 \cdot 10^{-8}$	$8.118 \cdot 10^{-8}$	0
cjtQd8Im	$-2.994 \cdot 10^{-24}$	$-1.296 \cdot 10^{-24}$	0.5672	$2.049 \cdot 10^{-8}$	$2.049 \cdot 10^{-8}$	0
cjtQd8Re	$-4.633 \cdot 10^{-8}$	$-4.633 \cdot 10^{-8}$	0	$3.728 \cdot 10^{-9}$	$3.728 \cdot 10^{-9}$	0
ctBIm	$1.452 \cdot 10^{-18}$	$5.421 \cdot 10^{-19}$	0.6266	0.0008982	0.0008982	$3.563 \cdot 10^{-7}$
ctBRe	$-7.393 \cdot 10^{-5}$	$-7.393 \cdot 10^{-5}$	$3.706 \cdot 10^{-6}$	0.001127	0.001127	$3.548 \cdot 10^{-7}$
$\mathtt{ctGIm}$	$7.864 \cdot 10^{-25}$	$5.933 \cdot 10^{-24}$	-6.544	0.03614	0.03614	0
ctGRe	-0.1986	-0.1986	0	0.03795	0.03795	0
$\mathtt{ctHIm}$	$1.066 \cdot 10^{-25}$	$4.132 \cdot 10^{-25}$	-2.875	$2.87 \cdot 10^{-10}$	$2.87 \cdot 10^{-10}$	0
ctHRe	$-8.394 \cdot 10^{-9}$	$-8.394 \cdot 10^{-9}$	0	$2.547 \cdot 10^{-10}$	$2.547 \cdot 10^{-10}$	0
ctWIm	$-9.046 \cdot 10^{-18}$	$-5.725 \cdot 10^{-18}$	0.3672	0.004601	0.004601	$-1.087 \cdot 10^{-7}$
ctWRe	-0.001786	-0.001786	$-3.92 \cdot 10^{-7}$	0.006675	0.006675	$-1.199 \cdot 10^{-7}$
ctd1	-0.0007423	-0.0007423	$3.637 \cdot 10^{-7}$	0.005691	0.005691	0
ctd8	0.0234	0.0234	0	0.001265	0.001265	0
ctj1	0.01045	0.01045	$6.701 \cdot 10^{-7}$	0.5691	0.5691	0
ctj8	0.3486	0.3486	0	0.111	0.111	0
sm	0	0	0	0.9527	0.9527	0

# 1.80 $t\bar{t} \rightarrow t\bar{t}$

		rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	0.01039	0.01039	0	0.0005226	0.0005226	0	
cHQ1	0.1835	0.1835	$-5.449 \cdot 10^{-8}$	0.009449	0.009449	$1.058 \cdot 10^{-8}$	
cHQ3	-0.03926	-0.03926	$-2.547 \cdot 10^{-8}$	0.008558	0.008558	$1.169 \cdot 10^{-8}$	
cHWB	-0.01199	-0.01199	$1.668 \cdot 10^{-7}$	0.001739	0.001739	$2.301 \cdot 10^{-7}$	
cHt	-0.03476	-0.03476	$2.877 \cdot 10^{-8}$	0.008909	0.008909	$-1.122 \cdot 10^{-8}$	
cQQ1	-0.309	-0.309	$-3.237 \cdot 10^{-8}$	3.911	3.911	0	
cQQ8	-0.02693	-0.02693	$-7.428 \cdot 10^{-8}$	0.2022	0.2022	0	
cQt1	-0.144	-0.144	$2.778 \cdot 10^{-7}$	10.62	10.62	0	

cQt8	-18.37	-18.37	0	1.572	1.572	0
$\mathtt{ctBIm}$	$-1.07 \cdot 10^{-17}$	$-5.154 \cdot 10^{-18}$	0.5183	0.0301	0.0301	$3.323 \cdot 10^{-7}$
ctBRe	0.02078	0.02078	$9.627 \cdot 10^{-8}$	0.01916	0.01916	$3.653 \cdot 10^{-7}$
$\mathtt{ctGIm}$	$-6.316 \cdot 10^{-17}$	$-4.78 \cdot 10^{-17}$	0.2432	0.2744	0.2744	0
ctGRe	-0.1374	-0.1374	0	0.1517	0.1517	0
$\mathtt{ctHIm}$	$-7.14 \cdot 10^{-20}$	$1.194 \cdot 10^{-18}$	17.72	0.004852	0.004852	0
ctHRe	0.4769	0.4769	$-2.097 \cdot 10^{-8}$	0.01115	0.01115	0
$\mathtt{ctWIm}$	$-3.026 \cdot 10^{-17}$	$-3.622 \cdot 10^{-18}$	0.8803	0.02391	0.02391	$-1.255 \cdot 10^{-7}$
ctWRe	0.02268	0.02268	$-1.323 \cdot 10^{-7}$	0.02778	0.02778	$-1.08 \cdot 10^{-7}$
ctt	-5.684	-5.684	$3.518 \cdot 10^{-8}$	17.53	17.53	0
sm	0	0	0	108.9	108.9	0

# 1.81 $u\bar{d} \rightarrow \mu^+ \nu_\mu$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНј3	$4.793 \cdot 10^{-5}$	$4.793 \cdot 10^{-5}$	$-2.087 \cdot 10^{-7}$	$1.453 \cdot 10^{-6}$	$1.453 \cdot 10^{-6}$	$-2.065 \cdot 10^{-7}$		
cH13	$2.483 \cdot 10^{-7}$	$2.483 \cdot 10^{-7}$	$-2.416 \cdot 10^{-7}$	$7.526 \cdot 10^{-9}$	$7.526 \cdot 10^{-9}$	$-2.126 \cdot 10^{-7}$		
$\mathtt{cHudIm}$	$1.658 \cdot 10^{-39}$	$1.614 \cdot 10^{-38}$	-8.729	$4.286 \cdot 10^{-25}$	$4.286 \cdot 10^{-25}$	$-2.333 \cdot 10^{-7}$		
cHudRe	$-3.037 \cdot 10^{-24}$	$-3.037 \cdot 10^{-24}$	$-2.305 \cdot 10^{-7}$	$2.448 \cdot 10^{-25}$	$2.448 \cdot 10^{-25}$	$-2.043 \cdot 10^{-7}$		
cdWIm	$4.034 \cdot 10^{-28}$	$1.966 \cdot 10^{-28}$	0.5128	$1.688 \cdot 10^{-12}$	$1.688 \cdot 10^{-12}$	$-5.926 \cdot 10^{-8}$		
cdWRe	$-4.704 \cdot 10^{-14}$	$-4.704 \cdot 10^{-14}$	$-1.701 \cdot 10^{-7}$	$1.434 \cdot 10^{-13}$	$1.434 \cdot 10^{-13}$	$-1.395 \cdot 10^{-7}$		
ceWIm	$5.441 \cdot 10^{-28}$	$3.31 \cdot 10^{-28}$	0.3918	$1.523 \cdot 10^{-9}$	$1.523 \cdot 10^{-9}$	$-6.564 \cdot 10^{-8}$		
ceWRe	$-9.635 \cdot 10^{-10}$	$-9.635 \cdot 10^{-10}$	$-1.661 \cdot 10^{-7}$	$1.579 \cdot 10^{-9}$	$1.579 \cdot 10^{-9}$	$-1.267 \cdot 10^{-7}$		
${\tt cledjIm}$	$7.358 \cdot 10^{-21}$	$7.358 \cdot 10^{-21}$	$-5.436 \cdot 10^{-8}$	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	0		
cledjRe	$-4.397 \cdot 10^{-17}$	$-4.397 \cdot 10^{-17}$	0	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	0		
cleju1Im	$-1.591 \cdot 10^{-21}$	$-1.591 \cdot 10^{-21}$	0	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	0		
cleju1Re	$9.475 \cdot 10^{-18}$	$9.475 \cdot 10^{-18}$	0	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	0		
cleju3Im	$-5.127 \cdot 10^{-22}$	$-5.127 \cdot 10^{-22}$	$-7.802 \cdot 10^{-8}$	$2.957 \cdot 10^{-19}$	$2.957 \cdot 10^{-19}$	0		

cleju3Re	$2.589 \cdot 10^{-17}$	$2.589 \cdot 10^{-17}$	0	$3.439 \cdot 10^{-17}$	$3.439 \cdot 10^{-17}$	0
clj3	$3.871 \cdot 10^{-5}$	$3.871 \cdot 10^{-5}$	$-1.033 \cdot 10^{-7}$	0.000183	0.000183	0
cuWIm	$1.247 \cdot 10^{-29}$	$1.028 \cdot 10^{-29}$	0.1751	$3.067 \cdot 10^{-14}$	$3.067 \cdot 10^{-14}$	$-1.304 \cdot 10^{-7}$
cuWRe	$-1.398 \cdot 10^{-13}$	$-1.398 \cdot 10^{-13}$	$-2.146 \cdot 10^{-7}$	$3.61 \cdot 10^{-13}$	$3.61 \cdot 10^{-13}$	$-1.108 \cdot 10^{-7}$
sm	0	0	0	0.001173	0.001173	$-1.705 \cdot 10^{-7}$

### 1.82 $u\bar{d} \rightarrow c\bar{s}$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНј3	0.0006727	0.0006727	$-2.23 \cdot 10^{-7}$	$4.078 \cdot 10^{-5}$	$4.078 \cdot 10^{-5}$	$-1.962 \cdot 10^{-7}$		
cHudIm	$-7.538 \cdot 10^{-33}$	$-2.728 \cdot 10^{-33}$	0.638	$1.409 \cdot 10^{-16}$	$1.409 \cdot 10^{-16}$	$-2.129 \cdot 10^{-7}$		
cHudRe	$-1.249 \cdot 10^{-15}$	$-1.249 \cdot 10^{-15}$	$-2.402 \cdot 10^{-7}$	$4.967 \cdot 10^{-16}$	$4.967 \cdot 10^{-16}$	$-2.215 \cdot 10^{-7}$		
cdWIm	$-1.107 \cdot 10^{-26}$	$-3.814 \cdot 10^{-26}$	-2.444	$2.762 \cdot 10^{-9}$	$2.762 \cdot 10^{-9}$	$-1.086 \cdot 10^{-7}$		
cdWRe	$-3.241 \cdot 10^{-9}$	$-3.241 \cdot 10^{-9}$	$-1.851 \cdot 10^{-7}$	$3.232 \cdot 10^{-9}$	$3.232 \cdot 10^{-9}$	$-9.283 \cdot 10^{-8}$		
cjj31	0.1049	0.1049	$-1.907 \cdot 10^{-7}$	0.9914	0.9914	0		
cjj38	$1.165 \cdot 10^{-17}$	$5.485 \cdot 10^{-18}$	0.5293	0.9802	0.9802	0		
cjujd11Im	$-2.487 \cdot 10^{-19}$	$-2.487 \cdot 10^{-19}$	$-4.021 \cdot 10^{-8}$	$4.703 \cdot 10^{-16}$	$4.703 \cdot 10^{-16}$	0		
cjujd11Re	$-2.647 \cdot 10^{-15}$	$-2.647 \cdot 10^{-15}$	0	$1.565 \cdot 10^{-15}$	$1.565 \cdot 10^{-15}$	0		
cjujd1Im	$-3.213 \cdot 10^{-18}$	$-3.213 \cdot 10^{-18}$	$-6.224 \cdot 10^{-8}$	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0		
cjujd1Re	$-1.908 \cdot 10^{-14}$	$-1.908 \cdot 10^{-14}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0		
cjujd81Im	$-2.339 \cdot 10^{-19}$	$-2.339 \cdot 10^{-19}$	$-8.55 \cdot 10^{-8}$	$4.951 \cdot 10^{-17}$	$4.951 \cdot 10^{-17}$	0		
cjujd81Re	$-2.845 \cdot 10^{-15}$	$-2.845 \cdot 10^{-15}$	0	$2.226 \cdot 10^{-16}$	$2.226 \cdot 10^{-16}$	0		
cjujd8Im	$-8.765 \cdot 10^{-32}$	$2.63 \cdot 10^{-31}$	4	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0		
cjujd8Re	$-9.161 \cdot 10^{-32}$	$-9.195 \cdot 10^{-32}$	-0.003737	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0		
cuWIm	$-1.47 \cdot 10^{-23}$	$2.353 \cdot 10^{-23}$	2.6	$6.012 \cdot 10^{-7}$	$6.012 \cdot 10^{-7}$	$-1.164 \cdot 10^{-7}$		
cuWRe	$-2.218 \cdot 10^{-7}$	$-2.218 \cdot 10^{-7}$	$-1.353 \cdot 10^{-7}$	$5.137 \cdot 10^{-7}$	$5.137 \cdot 10^{-7}$	$-1.168 \cdot 10^{-7}$		
sm	0	0	0	0.03216	0.03216	$-2.177 \cdot 10^{-7}$		

## **1.83** $u\bar{d} \rightarrow u\bar{d}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-6.13 \cdot 10^{-22}$	$-6.13 \cdot 10^{-22}$	$1.631 \cdot 10^{-8}$	$2.262 \cdot 10^{-23}$	$2.262 \cdot 10^{-23}$	0	
cHWB	0.001186	0.001186	$5.059 \cdot 10^{-7}$	0.0003918	0.0003918	$2.297 \cdot 10^{-7}$	
cHd	0.0001966	0.0001966	$-5.085 \cdot 10^{-7}$	0.0001865	0.0001865	$-2.681 \cdot 10^{-7}$	
cHj1	-0.001144	-0.001144	$-2.622 \cdot 10^{-7}$	0.0001301	0.0001301	$7.687 \cdot 10^{-7}$	
сНј3	-0.003136	-0.003136	$-6.378 \cdot 10^{-8}$	0.000169	0.000169	$-1.183 \cdot 10^{-7}$	
cHu	0.0004511	0.0004511	$3.104 \cdot 10^{-7}$	0.0001092	0.0001092	$-1.832 \cdot 10^{-7}$	
cHudIm	$-1.911 \cdot 10^{-36}$	$-1.561 \cdot 10^{-36}$	0.1834	$2.226 \cdot 10^{-24}$	$2.226 \cdot 10^{-24}$	$-2.246 \cdot 10^{-7}$	
cHudRe	$-3.366 \cdot 10^{-20}$	$-3.366 \cdot 10^{-20}$	0	$6.116 \cdot 10^{-25}$	$6.116 \cdot 10^{-25}$	$-2.289 \cdot 10^{-7}$	
cdBIm	$-9.521 \cdot 10^{-25}$	$-9.544 \cdot 10^{-25}$	-0.002455	$3.001 \cdot 10^{-11}$	$3.001 \cdot 10^{-11}$	$3.332 \cdot 10^{-7}$	
cdBRe	$-9.084 \cdot 10^{-12}$	$-9.084 \cdot 10^{-12}$	$3.303 \cdot 10^{-7}$	$3.099 \cdot 10^{-11}$	$3.099 \cdot 10^{-11}$	$3.549 \cdot 10^{-7}$	
cdGIm	$-1.209 \cdot 10^{-26}$	$-1.799 \cdot 10^{-26}$	-0.4875	$3.393 \cdot 10^{-10}$	$3.393 \cdot 10^{-10}$	0	
cdGRe	$-1.499 \cdot 10^{-10}$	$-1.499 \cdot 10^{-10}$	0	$1.175 \cdot 10^{-10}$	$1.175 \cdot 10^{-10}$	0	
cdHIm	$1.619 \cdot 10^{-36}$	$1.72 \cdot 10^{-36}$	-0.06274	$9.465 \cdot 10^{-23}$	$9.465 \cdot 10^{-23}$	0	
cdHRe	$-1.748 \cdot 10^{-21}$	$-1.748 \cdot 10^{-21}$	0	$9.439 \cdot 10^{-23}$	$9.439 \cdot 10^{-23}$	0	
$\mathtt{cdWIm}$	$2.556 \cdot 10^{-26}$	$-1.731 \cdot 10^{-26}$	1.677	$1.747 \cdot 10^{-11}$	$1.747 \cdot 10^{-11}$	$-1.145 \cdot 10^{-7}$	
cdWRe	$2.827 \cdot 10^{-10}$	$2.827 \cdot 10^{-10}$	$-3.537 \cdot 10^{-8}$	$4.788 \cdot 10^{-11}$	$4.788 \cdot 10^{-11}$	$-1.044 \cdot 10^{-7}$	
cjd1	0.02196	0.02196	$3.188 \cdot 10^{-7}$	1	1	0	
cjd8	-1.55	-1.55	0	0.2222	0.2222	0	
cjj11	0.4048	0.4048	$-1.235 \cdot 10^{-7}$	1.323	1.323	0	
cjj18	-2.584	-2.584	0	0.488	0.488	0	
cjj31	-0.7539	-0.7539	$2.653 \cdot 10^{-8}$	1.647	1.647	0	
cjj38	1.224	1.224	0	1.44	1.44	0	
cju1	-0.1013	-0.1013	$2.963 \cdot 10^{-7}$	1	1	0	
cju8	-2.541	-2.541	0	0.2222	0.2222	0	
cjujd11Im	$1.7 \cdot 10^{-34}$	$1.65 \cdot 10^{-34}$	0.02946	$8.51 \cdot 10^{-20}$	$8.51 \cdot 10^{-20}$	0	
cjujd11Re	$-1.642 \cdot 10^{-20}$	$-1.642 \cdot 10^{-20}$	0	$7.973 \cdot 10^{-20}$	$7.973 \cdot 10^{-20}$	0	

cjujd1Im	$-1.939 \cdot 10^{-35}$	$-3.004 \cdot 10^{-35}$	-0.5497	$1.044 \cdot 10^{-19}$	$1.044 \cdot 10^{-19}$	0
cjujd1Re	$-1.599 \cdot 10^{-20}$	$-1.599 \cdot 10^{-20}$	0	$8.105 \cdot 10^{-20}$	$8.105 \cdot 10^{-20}$	0
cjujd81Im	$5.437 \cdot 10^{-35}$	$5.387 \cdot 10^{-35}$	0.009287	$1.104 \cdot 10^{-20}$	$1.104 \cdot 10^{-20}$	0
cjujd81Re	$5.848 \cdot 10^{-20}$	$5.848 \cdot 10^{-20}$	0	$1.102 \cdot 10^{-20}$	$1.102 \cdot 10^{-20}$	0
cjujd8Im	$5.437 \cdot 10^{-35}$	$5.387 \cdot 10^{-35}$	0.009287	$1.104 \cdot 10^{-20}$	$1.104 \cdot 10^{-20}$	0
cjujd8Re	$3.995 \cdot 10^{-20}$	$3.995 \cdot 10^{-20}$	0	$1.101 \cdot 10^{-20}$	$1.101 \cdot 10^{-20}$	0
cuBIm	$-2.741 \cdot 10^{-25}$	$-2.736 \cdot 10^{-25}$	0.00164	$8.756 \cdot 10^{-13}$	$8.756 \cdot 10^{-13}$	$3.655 \cdot 10^{-7}$
cuBRe	$-1.903 \cdot 10^{-13}$	$-1.903 \cdot 10^{-13}$	$1.577 \cdot 10^{-7}$	$3.291 \cdot 10^{-13}$	$3.291 \cdot 10^{-13}$	$3.646 \cdot 10^{-7}$
cuGIm	$2.739 \cdot 10^{-26}$	$2.922 \cdot 10^{-26}$	-0.06695	$1.239 \cdot 10^{-11}$	$1.239 \cdot 10^{-11}$	0
cuGRe	$-3.135 \cdot 10^{-11}$	$-3.135 \cdot 10^{-11}$	0	$1.239 \cdot 10^{-11}$	$1.239 \cdot 10^{-11}$	0
cuHIm	$-3.699 \cdot 10^{-35}$	$-3.689 \cdot 10^{-35}$	0.002899	$9.56 \cdot 10^{-23}$	$9.56 \cdot 10^{-23}$	0
cuHRe	$-1.748 \cdot 10^{-21}$	$-1.748 \cdot 10^{-21}$	0	$9.439 \cdot 10^{-23}$	$9.439 \cdot 10^{-23}$	0
cuWIm	$3.241 \cdot 10^{-25}$	$2.669 \cdot 10^{-25}$	0.1766	$1.015 \cdot 10^{-11}$	$1.015 \cdot 10^{-11}$	$-9.853 \cdot 10^{-8}$
cuWRe	$3.078 \cdot 10^{-12}$	$3.078 \cdot 10^{-12}$	0	$3.732 \cdot 10^{-12}$	$3.732 \cdot 10^{-12}$	$-1.072 \cdot 10^{-7}$
cud1	0.02935	0.02935	$3.747 \cdot 10^{-7}$	0.2558	0.2558	0
cud8	-0.5623	-0.5623	0	0.07761	0.07761	0
sm	0	0	0	7.021	7.021	0

### 1.84 $u\bar{u} \rightarrow \nu_e \bar{\nu}_e$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHWB	0.0001352	0.0001352	$5.178 \cdot 10^{-7}$	$7.423 \cdot 10^{-6}$	$7.423 \cdot 10^{-6}$	$2.56 \cdot 10^{-7}$		
cHj1	$-3.023 \cdot 10^{-9}$	$-3.023 \cdot 10^{-9}$	$-1.654 \cdot 10^{-7}$	$1.331 \cdot 10^{-10}$	$1.331 \cdot 10^{-10}$	0		
сНј3	0.0001229	0.0001229	$-1.627 \cdot 10^{-7}$	$5.412 \cdot 10^{-6}$	$5.412 \cdot 10^{-6}$	0		
cHl1	$-7.035 \cdot 10^{-5}$	$-7.035 \cdot 10^{-5}$	$7.108 \cdot 10^{-7}$	$2.132 \cdot 10^{-6}$	$2.132 \cdot 10^{-6}$	$7.034 \cdot 10^{-7}$		
cH13	$6.395 \cdot 10^{-5}$	$6.395 \cdot 10^{-5}$	$3.91 \cdot 10^{-7}$	$1.938 \cdot 10^{-6}$	$1.938 \cdot 10^{-6}$	$3.611 \cdot 10^{-7}$		
cHu	$6.496 \cdot 10^{-5}$	$6.496 \cdot 10^{-5}$	$3.541 \cdot 10^{-7}$	$6.323 \cdot 10^{-6}$	$6.323 \cdot 10^{-6}$	0		
clj1	0.0192	0.0192	$-1.562 \cdot 10^{-7}$	0.1008	0.1008	0		

clj3	0.003411	0.003411	$-1.466 \cdot 10^{-7}$	0.01791	0.01791	0
clu	-0.02677	-0.02677	$3.361 \cdot 10^{-7}$	0.3108	0.3108	0
cuBIm	$-3.185 \cdot 10^{-29}$	$2.93 \cdot 10^{-28}$	10.2	$1.003 \cdot 10^{-13}$	$1.003 \cdot 10^{-13}$	$3.988 \cdot 10^{-7}$
cuBRe	$5.253 \cdot 10^{-14}$	$5.253 \cdot 10^{-14}$	$-4.759 \cdot 10^{-7}$	$1.012 \cdot 10^{-13}$	$1.012 \cdot 10^{-13}$	$3.954 \cdot 10^{-7}$
cuWIm	$5.426 \cdot 10^{-28}$	$2.928 \cdot 10^{-28}$	0.4603	$2.368 \cdot 10^{-13}$	$2.368 \cdot 10^{-13}$	$-8.445 \cdot 10^{-8}$
cuWRe	$-9.516 \cdot 10^{-14}$	$-9.516 \cdot 10^{-14}$	$-7.04 \cdot 10^{-7}$	$3.32 \cdot 10^{-13}$	$3.32 \cdot 10^{-13}$	$-9.037 \cdot 10^{-8}$
sm	0	0	0	0.00104	0.00104	$-1.924 \cdot 10^{-7}$

### $1.85 \quad u\bar{u} \to c\bar{c}$

	interference			squa	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1 mod2	$1-\mathtt{mod}2/\mathtt{mod}1$			
cHDD	$-1.275 \cdot 10^{-16}$	$-1.275 \cdot 10^{-16}$	0	$1.942 \cdot 10^{-18}  1.942 \cdot 10$	$^{-18}$ 0			
cHWB	-0.0001767	-0.0001767	$3.395 \cdot 10^{-7}$	$2.346 \cdot 10^{-5}$ $2.346 \cdot 10^{-5}$	$0^{-5}$ $2.557 \cdot 10^{-7}$			
cHj1	-0.0001216	-0.0001216	$-9.05 \cdot 10^{-7}$	$1.751 \cdot 10^{-5}$ $1.751 \cdot 10^{-5}$	$0^{-5}$ $1.142 \cdot 10^{-7}$			
сНј3	0.001085	0.001085	$-2.765 \cdot 10^{-7}$	$5.98 \cdot 10^{-5}$ $5.98 \cdot 10$	$-5$ $-3.01 \cdot 10^{-7}$			
cHu	0.0002231	0.0002231	$8.067 \cdot 10^{-7}$	$1.958 \cdot 10^{-5}$ $1.958 \cdot 10^{-5}$	$3.064 \cdot 10^{-7}$			
cjj11	0.3621	0.3621	$-1.105 \cdot 10^{-7}$	3.315 $3.315$	0			
cjj18	0.103	0.103	0	0.06955 $0.06955$	5 0			
cjj31	0.1908	0.1908	$-1.048 \cdot 10^{-7}$	1.747 $1.747$	0			
cjj38	0.2624	0.2624	0	0.1771   0.1771	0			
cju1	0.02904	0.02904	$3.788 \cdot 10^{-7}$	1.038 $1.038$	0			
cju8	0.6832	0.6832	0	0.2306 $0.2306$	0			
cuBIm	$-7.445 \cdot 10^{-24}$	$-5.454 \cdot 10^{-24}$	0.2674	$6.38 \cdot 10^{-8}$ $6.38 \cdot 10$	$-8   3.605 \cdot 10^{-7}$			
cuBRe	$-1.892 \cdot 10^{-7}$	$-1.892 \cdot 10^{-7}$	$3.7\cdot 10^{-7}$	$1.753 \cdot 10^{-7}$ $1.753 \cdot 10^{-7}$	$3.993 \cdot 10^{-7}$			
cuGIm	$2.435 \cdot 10^{-22}$	$1.714 \cdot 10^{-22}$	0.2959	$1.904 \cdot 10^{-6}$ $1.904 \cdot 10^{-6}$	$0^{-6}$ 0			
cuGRe	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$1.904 \cdot 10^{-6}$ $1.904 \cdot 10^{-6}$	$0^{-6}$ 0			
cuHIm	$-1.416 \cdot 10^{-32}$	$-1.02 \cdot 10^{-32}$	0.2796	$1.553 \cdot 10^{-17}$ $1.553 \cdot 10$				
cuHRe	$-5.156 \cdot 10^{-16}$	$-5.156 \cdot 10^{-16}$	0	$3.107 \cdot 10^{-17}$ $3.107 \cdot 10$	-17 0			

cuWIm cuWRe	$-2.03 \cdot 10^{-23} \\ -3.232 \cdot 10^{-7}$	$-1.516 \cdot 10^{-23} \\ -3.232 \cdot 10^{-7}$	$0.2531 \\ -1.237 \cdot 10^{-7}$	$2.876 \cdot 10^{-7} \\ 3.075 \cdot 10^{-7}$		$-1.391 \cdot 10^{-7} \\ -1.301 \cdot 10^{-7}$
cuu1	0.1892	0.1892	$3.7 \cdot 10^{-7}$	3.315	3.315	0
cuu8	0.5752	0.5752	0	0.3882	0.3882	0
sm	0	0	0	0.829	0.829	0

### 1.86 $u\bar{u} \rightarrow u\bar{u}$

		interfere	ence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
cHDD	$6.387 \cdot 10^{-12}$	$6.387 \cdot 10^{-12}$	0	$1.265 \cdot 10^{-23}  1.265 \cdot 10^{-23} \qquad 0$
cHWB	-0.0002799	-0.0002799	$8.574 \cdot 10^{-7}$	$9.847 \cdot 10^{-5}$ $9.847 \cdot 10^{-5}$ $2.539 \cdot 10^{-7}$
cHj1	0.001908	0.001908	0	$4.041 \cdot 10^{-5}$ $4.041 \cdot 10^{-5}$ $4.454 \cdot 10^{-7}$
сНјЗ	-0.0005273	-0.0005273	$3.414 \cdot 10^{-7}$	$2.866 \cdot 10^{-5}$ $2.866 \cdot 10^{-5}$ $6.63 \cdot 10^{-7}$
cHu	-0.0007731	-0.0007731	$2.07 \cdot 10^{-7}$	$0.0001332 \qquad 0.0001332 \qquad -3.004 \cdot 10^{-7}$
cjj11	-0.2328	-0.2328	0	1.382 $1.382$ $0$
cjj18	-0.0135	-0.0135	0	$0.05492 \qquad 0.05492 \qquad 0$
cjj31	-0.002338	-0.002338	$-4.278 \cdot 10^{-8}$	0.08228 $0.08228$ $0$
cjj38	-6.896	-6.896	$-1.45 \cdot 10^{-8}$	0.941 $0.941$ $0$
cju1	-0.03968	-0.03968	$3.528 \cdot 10^{-7}$	3.232 $3.232$ 0
cju8	-0.8673	-0.8673	0	$0.7181 \qquad 0.7181 \qquad 0$
cuBIm	$2.168 \cdot 10^{-27}$	$-6.424 \cdot 10^{-28}$	1.296	$4.66 \cdot 10^{-12}$ $4.66 \cdot 10^{-12}$ $3.434 \cdot 10^{-7}$
cuBRe	$-1.521 \cdot 10^{-11}$	$-1.521 \cdot 10^{-11}$	$1.972 \cdot 10^{-7}$	$1.061 \cdot 10^{-12}  1.061 \cdot 10^{-12}  3.77 \cdot 10^{-7}$
cuGIm	$2.733 \cdot 10^{-27}$	$4.214 \cdot 10^{-27}$	-0.5418	$5.793 \cdot 10^{-12}  5.793 \cdot 10^{-12} \qquad 0$
cuGRe	$-1.011 \cdot 10^{-10}$	$-1.011 \cdot 10^{-10}$	0	$5.793 \cdot 10^{-12}  5.793 \cdot 10^{-12} \qquad 0$
$\mathtt{cuHIm}$	$7.529 \cdot 10^{-29}$	$7.529 \cdot 10^{-29}$	0	$1.04 \cdot 10^{-22}$ $1.04 \cdot 10^{-22}$ 0
cuHRe	$3.113 \cdot 10^{-11}$	$3.113 \cdot 10^{-11}$	0	$2.003 \cdot 10^{-22}  2.003 \cdot 10^{-22}  0$
cuWIm	$-7.942 \cdot 10^{-26}$	$1.645 \cdot 10^{-26}$	1.207	$3.556 \cdot 10^{-11}  3.556 \cdot 10^{-11}  -1.125 \cdot 10^{-7}$
cuWRe	$-1.65 \cdot 10^{-11}$	$-1.65 \cdot 10^{-11}$	0	$1.841 \cdot 10^{-12}$ $1.841 \cdot 10^{-12}$ $-1.086 \cdot 10^{-7}$

cuu1	-0.2137	-0.2137	$4.678 \cdot 10^{-8}$	1.382	1.382	0
cuu8	-0.0007239	-0.0007239	$4.144 \cdot 10^{-8}$	0.009142	0.009142	0
sm	0	0	0	3.265	3.265	0

### 1.87 $zz \to W^+W^-$

		interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
cHB	-0.0435	-0.0435	$1.149 \cdot 10^{-7}$	0.04878	0.04878	$7.176 \cdot 10^{-7}$	
cHBtil	$1.066 \cdot 10^{-16}$	$-8.439 \cdot 10^{-17}$	1.792	0.04878	0.04878	$7.176 \cdot 10^{-7}$	
cHDD	3.569	3.569	$-2.522 \cdot 10^{-7}$	0.1118	0.1118	0	
cHW	-0.3393	-0.3393	$-3.536 \cdot 10^{-7}$	1.421	1.421	$-7.04 \cdot 10^{-8}$	
cHWB	2.976	2.976	$-2.352 \cdot 10^{-7}$	0.2592	0.2592	$1.929 \cdot 10^{-7}$	
cHWBtil	$-3.266 \cdot 10^{-17}$	$4.862 \cdot 10^{-16}$	15.88	0.1707	0.1707	$2.344 \cdot 10^{-7}$	
cHWtil	$-4.298 \cdot 10^{-16}$	$2.52 \cdot 10^{-15}$	6.864	1.419	1.419	$-7.045 \cdot 10^{-8}$	
cW	-0.05933	-0.05933	$-3.371 \cdot 10^{-8}$	15.23	15.23	$-3.283 \cdot 10^{-7}$	
cWtil	$1.426 \cdot 10^{-12}$	$-3.58 \cdot 10^{-13}$	1.251	15.23	15.23	$-3.283 \cdot 10^{-7}$	
sm	0	0	0	30.76	30.76	$-5.201 \cdot 10^{-7}$	

### 1.88 $zz \rightarrow zz$

		interfer	ence		square			
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHB	0.001826	0.001826	$3.285 \cdot 10^{-7}$	0.0733	0.0733	$7.094 \cdot 10^{-7}$		
cHBtil	$2.347 \cdot 10^{-18}$	$3.233 \cdot 10^{-18}$	-0.3777	0.09385	0.09385	$7.139 \cdot 10^{-7}$		
cHDD	0.01978	0.01978	0	0.001199	0.001199	0		
cHW	0.005982	0.005982	$-1.17 \cdot 10^{-7}$	0.8246	0.8246	$-2.183 \cdot 10^{-7}$		
cHWB	0.02005	0.02005	$9.976 \cdot 10^{-8}$	0.2415	0.2415	$2.484 \cdot 10^{-7}$		
cHWBtil	$1.887 \cdot 10^{-18}$	$-1.087 \cdot 10^{-18}$	1.576	0.2475	0.2475	$2.425 \cdot 10^{-7}$		

cHWtil	$8.175 \cdot 10^{-18}$	$7.627 \cdot 10^{-18}$	0.06707	1.011	1.011	$-2.969 \cdot 10^{-7}$
sm	0	0	0	0.08141	0.08141	0

## 2 By parameter point

### 2.1 cG

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$gg \to gg$	$-3.166 \cdot 10^{-9}$	$-3.166 \cdot 10^{-9}$	0	112.4	112.4	0
$gg \to ggg$	-0.001438	-0.001438	0	0.02132	0.02132	0
$gg \to t\bar{t}$	-0.04114	-0.04114	0	2.137	2.137	0
$gg \to u\bar{u}$	$-1.475 \cdot 10^{-10}$	$-1.475 \cdot 10^{-10}$	0	0.4935	0.4935	0

### 2.2 cGtil

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$gg \to gg$	$-1.595 \cdot 10^{-14}$	$-1.595 \cdot 10^{-14}$	0	112.4	112.4	0
$gg \to ggg$	0.001434	0.001434	0	0.02132	0.02132	0
$gg  o t \bar t$	$-1.55 \cdot 10^{-17}$	$-1.55 \cdot 10^{-17}$	0	2.137	2.137	0
$gg \to u\bar{u}$	$-5.139 \cdot 10^{-18}$	$-5.139 \cdot 10^{-18}$	0	0.4935	0.4935	0

### 2.3 cH

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
HH  o HH	-1.605	-1.605	0	2.999	2.999	0

$HH \to HHH$	$6.991 \cdot 10^{-6}$	$6.991 \cdot 10^{-6}$	0	$9.499 \cdot 10^{-6}$	$9.499 \cdot 10^{-6}$	0
$HH  o H  au^+  au^-$	$-3.381 \cdot 10^{-8}$	$-3.381 \cdot 10^{-8}$	0	$6.515 \cdot 10^{-8}$	$6.515 \cdot 10^{-8}$	0
$HH  o Hbar{b}$	$-2.835 \cdot 10^{-9}$	$-2.835 \cdot 10^{-9}$	0	$7.585 \cdot 10^{-9}$	$7.585 \cdot 10^{-9}$	0
$HH \to Hs\bar{s}$	$-3.156 \cdot 10^{-12}$	$-3.156 \cdot 10^{-12}$	0	$7.768 \cdot 10^{-12}$	$7.768 \cdot 10^{-12}$	0
$HH  o Htar{t}$	$-2.615 \cdot 10^{-5}$	$-2.615 \cdot 10^{-5}$	0	$4.595 \cdot 10^{-5}$	$4.595 \cdot 10^{-5}$	0
$HH \to Hu\bar{u}$	$-1.669 \cdot 10^{-15}$	$-1.669 \cdot 10^{-15}$	0	$4.384 \cdot 10^{-15}$	$4.384 \cdot 10^{-15}$	0
$HH \to Hzz$	$-1.658 \cdot 10^{-5}$	$-1.658 \cdot 10^{-5}$	0	$2.161 \cdot 10^{-5}$	$2.161 \cdot 10^{-5}$	0
$HH  o W^+W^-$	8.058	8.058	$-1.117 \cdot 10^{-7}$	0.8318	0.8318	0
$HH \to W^+W^-\gamma$	$1.975 \cdot 10^{-5}$	$1.975 \cdot 10^{-5}$	$-3.544 \cdot 10^{-7}$	$2.61 \cdot 10^{-5}$	$2.61 \cdot 10^{-5}$	$3.065 \cdot 10^{-7}$
$HH  o W^+ \bar t b$	$2.709 \cdot 10^{-5}$	$2.709 \cdot 10^{-5}$	$-1.107 \cdot 10^{-7}$	$9.724 \cdot 10^{-6}$	$9.724 \cdot 10^{-6}$	0
$HH \to W^+ e^- \bar{\nu}_e$	$5.395 \cdot 10^{-8}$	$5.395 \cdot 10^{-8}$	$-4.263 \cdot 10^{-7}$	$2.926 \cdot 10^{-8}$	$2.926 \cdot 10^{-8}$	$-2.392 \cdot 10^{-7}$
$HH \to W^- u \bar{d}$	$2.73 \cdot 10^{-8}$	$2.73 \cdot 10^{-8}$	$-5.128 \cdot 10^{-7}$	$2.306 \cdot 10^{-8}$	$2.306 \cdot 10^{-8}$	$-2.168 \cdot 10^{-7}$
$HH \to z\bar{b}b$	$-2.251 \cdot 10^{-9}$	$-2.251 \cdot 10^{-9}$	$-3.554 \cdot 10^{-7}$	$2.85 \cdot 10^{-8}$	$2.85 \cdot 10^{-8}$	$-7.017 \cdot 10^{-8}$
$HH \to z \nu_e \bar{\nu}_e$	$2.662 \cdot 10^{-8}$	$2.662 \cdot 10^{-8}$	0	$1.794 \cdot 10^{-8}$	$1.794 \cdot 10^{-8}$	0
$HH \to zc\bar{c}$	$2.637 \cdot 10^{-6}$	$2.637 \cdot 10^{-6}$	$-1.517 \cdot 10^{-7}$	$9.288 \cdot 10^{-7}$	$9.288 \cdot 10^{-7}$	$-1.507 \cdot 10^{-7}$
$HH \to z d\bar{d}$	$1.688 \cdot 10^{-8}$	$1.688 \cdot 10^{-8}$	$-1.185 \cdot 10^{-7}$	$5.791 \cdot 10^{-10}$	$5.791 \cdot 10^{-10}$	$-1.036 \cdot 10^{-7}$
$HH \rightarrow ze^+e^-$	$8.14 \cdot 10^{-9}$	$8.14 \cdot 10^{-9}$	$-4.914 \cdot 10^{-8}$	$1.094 \cdot 10^{-9}$	$1.094 \cdot 10^{-9}$	$-9.139 \cdot 10^{-8}$
$HH  o zt\bar{t}$	$-2.138 \cdot 10^{-6}$	$-2.138 \cdot 10^{-6}$	$1.871 \cdot 10^{-7}$	$1.155 \cdot 10^{-6}$	$1.155 \cdot 10^{-6}$	0
$HH \rightarrow zz$	0.3879	0.3879	0	0.4129	0.4129	0
$W^+W^- \to Hb\bar{b}$	0.009174	0.009174	$-7.63 \cdot 10^{-8}$	0.0005381	0.0005381	0
$W^+W^-  o Hc\bar{c}$	$1.718 \cdot 10^{-11}$	$1.718 \cdot 10^{-11}$	$-2.329 \cdot 10^{-7}$	$4.444 \cdot 10^{-11}$	$4.444 \cdot 10^{-11}$	0
$W^+W^- \to H d\bar{d}$	$-8.66 \cdot 10^{-15}$	$-8.66 \cdot 10^{-15}$	$-8.083 \cdot 10^{-8}$	$1.332 \cdot 10^{-15}$	$1.332 \cdot 10^{-15}$	0
$W^+W^- \to H t \bar t$	$2.731 \cdot 10^{-7}$	$2.731 \cdot 10^{-7}$	$-7.323 \cdot 10^{-8}$	$2.065 \cdot 10^{-7}$	$2.065 \cdot 10^{-7}$	0

### 2.4 cHB

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \rightarrow Hzz$	$1.469 \cdot 10^{-6}$	$1.469 \cdot 10^{-6}$	$3.404 \cdot 10^{-7}$	$5.346 \cdot 10^{-7}$	$5.346 \cdot 10^{-7}$	$7.295 \cdot 10^{-7}$	

$HH \to W^+W^-\gamma$	$-3.187 \cdot 10^{-9}$	$-3.186 \cdot 10^{-9}$	0.0002228	$6.287 \cdot 10^{-7}$	$6.287 \cdot 10^{-7}$	$1.909 \cdot 10^{-7}$
HH  o z ar b b	$6.904 \cdot 10^{-7}$	$6.904 \cdot 10^{-7}$	$3.911 \cdot 10^{-7}$	$1.056 \cdot 10^{-6}$	$1.056 \cdot 10^{-6}$	$7.576 \cdot 10^{-7}$
$HH \to z \nu_e \bar{\nu}_e$	$7.165 \cdot 10^{-7}$	$7.165 \cdot 10^{-7}$	$3.489 \cdot 10^{-7}$	$8.857 \cdot 10^{-7}$	$8.857 \cdot 10^{-7}$	$7.113 \cdot 10^{-7}$
$HH \to zc\bar{c}$	$1.554 \cdot 10^{-8}$	$1.554 \cdot 10^{-8}$	$8.878 \cdot 10^{-6}$	$6.691 \cdot 10^{-7}$	$6.691 \cdot 10^{-7}$	$7.024 \cdot 10^{-7}$
$HH \to z d\bar{d}$	$6.104 \cdot 10^{-8}$	$6.104 \cdot 10^{-8}$	$4.423 \cdot 10^{-7}$	$4.91 \cdot 10^{-8}$	$4.91 \cdot 10^{-8}$	$7.128 \cdot 10^{-7}$
$HH \rightarrow ze^+e^-$	$4.237 \cdot 10^{-8}$	$4.237 \cdot 10^{-8}$	$1.676 \cdot 10^{-6}$	$1.664 \cdot 10^{-7}$	$1.664 \cdot 10^{-7}$	$6.613 \cdot 10^{-7}$
$HH \to z t \bar{t}$	$-8.429 \cdot 10^{-7}$	$-8.429 \cdot 10^{-7}$	$4.271 \cdot 10^{-7}$	$6.683 \cdot 10^{-7}$	$6.683 \cdot 10^{-7}$	$7.033 \cdot 10^{-7}$
$HH \rightarrow zz$	0.007465	0.007465	$3.617 \cdot 10^{-7}$	0.2073	0.2073	$7.236 \cdot 10^{-7}$
$HW^+ \to \gamma t \bar{b}$	$-3.37 \cdot 10^{-7}$	$-3.37 \cdot 10^{-7}$	$2.967 \cdot 10^{-7}$	$5.373 \cdot 10^{-7}$	$5.373 \cdot 10^{-7}$	$1.861 \cdot 10^{-7}$
$HW^+ \rightarrow \gamma u \bar{d}$	$4.781 \cdot 10^{-8}$	$4.781 \cdot 10^{-8}$	$4.183 \cdot 10^{-8}$	$5.711 \cdot 10^{-9}$	$5.711 \cdot 10^{-9}$	$1.226 \cdot 10^{-7}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$-6.787 \cdot 10^{-9}$	$-6.787 \cdot 10^{-9}$	$4.42 \cdot 10^{-8}$	$4.789 \cdot 10^{-9}$	$4.789 \cdot 10^{-9}$	$1.462 \cdot 10^{-7}$
$H\gamma  o b\bar{b}$	$-2.469 \cdot 10^{-6}$	$-2.469 \cdot 10^{-6}$	$2.43 \cdot 10^{-7}$	0.006799	0.006799	$2.5\cdot 10^{-7}$
$H\gamma \to c\bar{c}$	$-5.383 \cdot 10^{-7}$	$-5.383 \cdot 10^{-7}$	$2.415 \cdot 10^{-7}$	0.01881	0.01881	$2.658 \cdot 10^{-7}$
$H\gamma \to d\bar{d}$	$-1.709 \cdot 10^{-16}$	$-1.709 \cdot 10^{-16}$	$2.341 \cdot 10^{-7}$	0.00502	0.00502	$2.59 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	$-1.077 \cdot 10^{-13}$	$-1.077 \cdot 10^{-13}$	$1.857 \cdot 10^{-7}$	0.01713	0.01713	$2.336 \cdot 10^{-7}$
$H\gamma \to t\bar{t}$	-0.0144	-0.0144	$2.084 \cdot 10^{-7}$	0.01876	0.01876	$2.665 \cdot 10^{-7}$
$Hz \to \mu^+\mu^-$	0.0003052	0.0003052	$1.573 \cdot 10^{-6}$	0.003181	0.003181	$6.915 \cdot 10^{-7}$
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.0008149	0.0008149	$3.559 \cdot 10^{-7}$	0.0006939	0.0006939	$7.062 \cdot 10^{-7}$
$Hz \to b\bar{b}$	0.000887	0.000887	$4.059 \cdot 10^{-7}$	0.001087	0.001087	$7.359 \cdot 10^{-7}$
$Hz \to s\bar{s}$	0.001334	0.001334	$3.747 \cdot 10^{-7}$	0.001618	0.001618	$7.417 \cdot 10^{-7}$
$Hz \to t\bar{t}$	-0.01371	-0.01371	$5.105 \cdot 10^{-7}$	0.005496	0.005496	$7.096 \cdot 10^{-7}$
$Hz \to u\bar{u}$	0.0006823	0.0006823	$1.319 \cdot 10^{-6}$	0.005723	0.005723	$7.165 \cdot 10^{-7}$
$W^+W^-  o Hb\bar{b}$	$-2.292 \cdot 10^{-8}$	$-2.292 \cdot 10^{-8}$	$2.618 \cdot 10^{-7}$	$2.828 \cdot 10^{-10}$	$2.828 \cdot 10^{-10}$	$7.073 \cdot 10^{-7}$
$W^+W^- \to Hc\bar{c}$	$8.942 \cdot 10^{-9}$	$8.942 \cdot 10^{-9}$	$2.125 \cdot 10^{-7}$	$6.957 \cdot 10^{-10}$	$6.957 \cdot 10^{-10}$	$7.044 \cdot 10^{-7}$
$W^+W^-  o Hd\bar{d}$	$-7.837 \cdot 10^{-9}$	$-7.837 \cdot 10^{-9}$	$1.659 \cdot 10^{-7}$	$8.559 \cdot 10^{-11}$	$8.559 \cdot 10^{-11}$	$6.893 \cdot 10^{-7}$
$W^+W^-  o Ht\bar{t}$	$6.87 \cdot 10^{-9}$	$6.87 \cdot 10^{-9}$	$-9.606 \cdot 10^{-7}$	$1.261 \cdot 10^{-9}$	$1.261 \cdot 10^{-9}$	$7.139 \cdot 10^{-7}$
$W^+W^-  o \gamma\gamma$	-0.0465	-0.0465	$1.505 \cdot 10^{-7}$	0.2695	0.2695	$-2.226 \cdot 10^{-7}$
$W^+W^- \to \gamma\gamma\gamma$	$-1.738 \cdot 10^{-8}$	$-1.738 \cdot 10^{-8}$	$6.906 \cdot 10^{-7}$	$2.978 \cdot 10^{-7}$	$2.978 \cdot 10^{-7}$	$3.359 \cdot 10^{-8}$
$\gamma W^+ \to z W^+$	-0.00608	-0.00608	$1.151 \cdot 10^{-7}$	0.001491	0.001491	$2.011 \cdot 10^{-7}$

$b\bar{b} \to \gamma \gamma$	$-7.646 \cdot 10^{-7}$	$-7.646 \cdot 10^{-7}$	$1.308 \cdot 10^{-7}$	$7.062 \cdot 10^{-6}$	$7.062 \cdot 10^{-6}$	$-2.266 \cdot 10^{-7}$
$zz \to W^+W^-$	-0.0435	-0.0435	$1.149 \cdot 10^{-7}$	0.04878	0.04878	$7.176 \cdot 10^{-7}$
$zz \to zz$	0.001826	0.001826	$3.285 \cdot 10^{-7}$	0.0733	0.0733	$7.094 \cdot 10^{-7}$

### 2.5 cHBtil

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \rightarrow Hzz$	$-1.864 \cdot 10^{-6}$	$-1.864 \cdot 10^{-6}$	$3.218 \cdot 10^{-7}$	$4.713 \cdot 10^{-7}$	$4.713 \cdot 10^{-7}$	$7.215 \cdot 10^{-7}$	
$HH \to W^+W^-\gamma$	$-3.739 \cdot 10^{-8}$	$-3.739 \cdot 10^{-8}$	$8.023 \cdot 10^{-7}$	$2.862 \cdot 10^{-7}$	$2.862 \cdot 10^{-7}$	$1.397 \cdot 10^{-7}$	
$HH  o z \bar b b$	$-7.784 \cdot 10^{-9}$	$-7.784 \cdot 10^{-9}$	$4.753 \cdot 10^{-7}$	$1.117 \cdot 10^{-9}$	$1.117 \cdot 10^{-9}$	$7.163 \cdot 10^{-7}$	
$HH \to z \nu_e \bar{\nu}_e$	$2.362 \cdot 10^{-8}$	$2.362 \cdot 10^{-8}$	$3.811 \cdot 10^{-7}$	$2.342 \cdot 10^{-8}$	$2.342 \cdot 10^{-8}$	$6.831 \cdot 10^{-7}$	
$HH \to z c \bar{c}$	$8.795 \cdot 10^{-10}$	$8.795 \cdot 10^{-10}$	$6.026 \cdot 10^{-7}$	$2.086 \cdot 10^{-7}$	$2.086 \cdot 10^{-7}$	$6.713 \cdot 10^{-7}$	
$HH \to z d\bar{d}$	$3.451 \cdot 10^{-9}$	$3.451 \cdot 10^{-9}$	$4.056 \cdot 10^{-7}$	$3.516 \cdot 10^{-8}$	$3.516 \cdot 10^{-8}$	$7.111 \cdot 10^{-7}$	
$HH \rightarrow ze^+e^-$	$-2.806 \cdot 10^{-8}$	$-2.806 \cdot 10^{-8}$	$1.639 \cdot 10^{-6}$	$2.342 \cdot 10^{-7}$	$2.342 \cdot 10^{-7}$	$7.26 \cdot 10^{-7}$	
$HH \to z t \bar{t}$	$-2.664 \cdot 10^{-7}$	$-2.664 \cdot 10^{-7}$	$1.802 \cdot 10^{-6}$	$2.196 \cdot 10^{-6}$	$2.196 \cdot 10^{-6}$	$7.285 \cdot 10^{-7}$	
$HH \rightarrow zz$	$-7.783 \cdot 10^{-17}$	$-1.517 \cdot 10^{-16}$	-0.9497	0.2084	0.2084	$7.199 \cdot 10^{-7}$	
$HW^+  o \gamma t \bar{b}$	$-1.536 \cdot 10^{-8}$	$-1.536 \cdot 10^{-8}$	$4.556 \cdot 10^{-7}$	$8.391 \cdot 10^{-8}$	$8.391 \cdot 10^{-8}$	$2.503 \cdot 10^{-7}$	
$HW^+ \to \gamma u \bar{d}$	$2.744 \cdot 10^{-9}$	$2.744 \cdot 10^{-9}$	0	$1.426 \cdot 10^{-9}$	$1.426 \cdot 10^{-9}$	$1.402 \cdot 10^{-7}$	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-3.341 \cdot 10^{-8}$	$-3.341 \cdot 10^{-8}$	0	$3.682 \cdot 10^{-9}$	$3.682 \cdot 10^{-9}$	$8.148 \cdot 10^{-8}$	
$H\gamma \to b\bar{b}$	$1.067 \cdot 10^{-9}$	$1.067 \cdot 10^{-9}$	$2.811 \cdot 10^{-7}$	0.005486	0.005486	$2.552 \cdot 10^{-7}$	
$H\gamma \to c\bar{c}$	$3.022 \cdot 10^{-10}$	$3.022 \cdot 10^{-10}$	$2.647 \cdot 10^{-7}$	0.01992	0.01992	$2.51\cdot 10^{-7}$	
$H\gamma \to d\bar{d}$	$-5.735 \cdot 10^{-15}$	$-5.735 \cdot 10^{-15}$	$2.441 \cdot 10^{-7}$	0.007568	0.007568	$2.379 \cdot 10^{-7}$	
$H\gamma \to e^+e^-$	$8.06 \cdot 10^{-17}$	$8.06 \cdot 10^{-17}$	$2.481 \cdot 10^{-7}$	0.02324	0.02324	$2.581 \cdot 10^{-7}$	
$H\gamma \to t\bar{t}$	$-1.959 \cdot 10^{-5}$	$-1.959 \cdot 10^{-5}$	$2.552 \cdot 10^{-7}$	0.02055	0.02055	$2.433 \cdot 10^{-7}$	
$Hz \to \mu^+\mu^-$	$-4.122 \cdot 10^{-7}$	$-4.122 \cdot 10^{-7}$	$2.668 \cdot 10^{-7}$	0.005055	0.005055	$7.121 \cdot 10^{-7}$	
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$-1.446 \cdot 10^{-19}$	$-7.228 \cdot 10^{-20}$	0.5001	0.001183	0.001183	$6.761 \cdot 10^{-7}$	
$Hz  o b\bar{b}$	$-2.834 \cdot 10^{-7}$	$-2.834 \cdot 10^{-7}$	$2.47\cdot 10^{-7}$	0.001348	0.001348	$7.419 \cdot 10^{-7}$	
$Hz \to s\bar{s}$	$-2.917 \cdot 10^{-7}$	$-2.917 \cdot 10^{-7}$	$2.4 \cdot 10^{-7}$	0.001362	0.001362	$6.61 \cdot 10^{-7}$	

$Hz \to t\bar{t}$	$-6.849 \cdot 10^{-7}$	$-6.849 \cdot 10^{-7}$	$-9.637 \cdot 10^{-7}$	0.004914	0.004914	$7.123 \cdot 10^{-7}$
$Hz \to u\bar{u}$	$-9.866 \cdot 10^{-7}$	$-9.866 \cdot 10^{-7}$	$2.433 \cdot 10^{-7}$	0.006724	0.006724	$7.139 \cdot 10^{-7}$
$W^+W^- \to H b \bar b$	$-2.638 \cdot 10^{-10}$	$-2.638 \cdot 10^{-10}$	$3.411 \cdot 10^{-7}$	$4.623 \cdot 10^{-12}$	$4.623 \cdot 10^{-12}$	$7.138 \cdot 10^{-7}$
$W^+W^-  o Hc\bar{c}$	$3.53 \cdot 10^{-12}$	$3.53 \cdot 10^{-12}$	$6.034 \cdot 10^{-6}$	$6.011 \cdot 10^{-12}$	$6.011 \cdot 10^{-12}$	$6.988 \cdot 10^{-7}$
$W^+W^- \to H d\bar{d}$	$9.083 \cdot 10^{-9}$	$9.083 \cdot 10^{-9}$	$4.294 \cdot 10^{-7}$	$2.063 \cdot 10^{-10}$	$2.063 \cdot 10^{-10}$	$6.786 \cdot 10^{-7}$
$W^+W^-  o H t \bar t$	$1.474 \cdot 10^{-8}$	$1.474 \cdot 10^{-8}$	0	$3.456 \cdot 10^{-11}$	$3.456 \cdot 10^{-11}$	$6.945 \cdot 10^{-7}$
$W^+W^- \to \gamma\gamma$	$-6.809 \cdot 10^{-18}$	$2.826 \cdot 10^{-19}$	1.041	0.2695	0.2695	$-2.226 \cdot 10^{-7}$
$W^+W^-  o \gamma\gamma\gamma$	$3.265 \cdot 10^{-8}$	$3.265 \cdot 10^{-8}$	$3.063 \cdot 10^{-7}$	$2.929 \cdot 10^{-7}$	$2.929 \cdot 10^{-7}$	0
$\gamma W^+ \to z W^+$	$-1.944 \cdot 10^{-16}$	$-1.584 \cdot 10^{-16}$	0.1853	0.06231	0.06231	$2.407 \cdot 10^{-7}$
$b\bar{b} \to \gamma \gamma$	$1.055 \cdot 10^{-24}$	$1.439 \cdot 10^{-24}$	-0.3643	$7.062 \cdot 10^{-6}$	$7.062 \cdot 10^{-6}$	$-2.124 \cdot 10^{-7}$
$zz \to W^+W^-$	$1.066 \cdot 10^{-16}$	$-8.439 \cdot 10^{-17}$	1.792	0.04878	0.04878	$7.176 \cdot 10^{-7}$
$zz \rightarrow zz$	$2.347 \cdot 10^{-18}$	$3.233 \cdot 10^{-18}$	-0.3777	0.09385	0.09385	$7.139 \cdot 10^{-7}$

## 2.6 cHDD

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to HH$	-0.1005	-0.1005	0	0.01154	0.01154	0		
$HH \to HHH$	$3.227 \cdot 10^{-7}$	$3.227 \cdot 10^{-7}$	0	$5.271 \cdot 10^{-7}$	$5.271 \cdot 10^{-7}$	0		
$HH \to H  au^+  au^-$	$1.792 \cdot 10^{-11}$	$1.792 \cdot 10^{-11}$	0	$7.877 \cdot 10^{-13}$	$7.877 \cdot 10^{-13}$	0		
$HH  o Hbar{b}$	$-2.742 \cdot 10^{-10}$	$-2.742 \cdot 10^{-10}$	0	$1.488 \cdot 10^{-10}$	$1.488 \cdot 10^{-10}$	0		
$HH \to Hs\bar{s}$	$-3.293 \cdot 10^{-12}$	$-3.293 \cdot 10^{-12}$	0	$5.284 \cdot 10^{-13}$	$5.284 \cdot 10^{-13}$	0		
$HH \to H t \bar t$	$1.866 \cdot 10^{-6}$	$1.866 \cdot 10^{-6}$	0	$3.634 \cdot 10^{-7}$	$3.634 \cdot 10^{-7}$	0		
$HH \to Hu\bar{u}$	$-8.161 \cdot 10^{-16}$	$-8.161 \cdot 10^{-16}$	0	$1.542 \cdot 10^{-16}$	$1.542 \cdot 10^{-16}$	0		
$HH \rightarrow Hzz$	$-1.005 \cdot 10^{-5}$	$-1.005 \cdot 10^{-5}$	0	$4.405 \cdot 10^{-6}$	$4.405 \cdot 10^{-6}$	0		
$HH  o W^+W^-$	-0.05927	-0.05927	$1.299 \cdot 10^{-6}$	0.2515	0.2515	0		
$HH \to W^+W^-\gamma$	$-3.942 \cdot 10^{-7}$	$-3.942 \cdot 10^{-7}$	$7.61 \cdot 10^{-7}$	$2.497 \cdot 10^{-7}$	$2.497 \cdot 10^{-7}$	$2.803 \cdot 10^{-7}$		
$HH  o W^+ \bar{t} b$	$1.185 \cdot 10^{-6}$	$1.185 \cdot 10^{-6}$	$-5.061 \cdot 10^{-7}$	$1.983 \cdot 10^{-6}$	$1.983 \cdot 10^{-6}$	0		
$HH \to W^+ e^- \bar{\nu}_e$	$7.96 \cdot 10^{-9}$	$7.96 \cdot 10^{-9}$	$-4.146 \cdot 10^{-7}$	$1.46 \cdot 10^{-9}$	$1.46 \cdot 10^{-9}$	$-2.055 \cdot 10^{-7}$		

$HH \to W^- u \bar{d}$	$-1.39 \cdot 10^{-8}$	$-1.39 \cdot 10^{-8}$	0	$9.2 \cdot 10^{-9}$	$9.2 \cdot 10^{-9}$	$-2.391 \cdot 10^{-7}$
$HH  o z \bar{b} b$	0.001788	0.001788	$-1.118 \cdot 10^{-7}$	$1.867 \cdot 10^{-5}$	$1.867 \cdot 10^{-5}$	$-1.071 \cdot 10^{-7}$
$HH \to z \nu_e \bar{\nu}_e$	$2.707 \cdot 10^{-8}$	$2.707 \cdot 10^{-8}$	0	$1.972 \cdot 10^{-9}$	$1.972 \cdot 10^{-9}$	0
$HH \to zc\bar{c}$	$1.124 \cdot 10^{-7}$	$1.124 \cdot 10^{-7}$	$-1.78 \cdot 10^{-7}$	$7.001 \cdot 10^{-9}$	$7.001 \cdot 10^{-9}$	$-1.428 \cdot 10^{-7}$
$HH \to z d\bar{d}$	$5.855 \cdot 10^{-8}$	$5.855 \cdot 10^{-8}$	$-1.025 \cdot 10^{-7}$	$5.602 \cdot 10^{-9}$	$5.602 \cdot 10^{-9}$	$-1.071 \cdot 10^{-7}$
$HH \rightarrow ze^+e^-$	$1.404 \cdot 10^{-6}$	$1.404 \cdot 10^{-6}$	0	$2.024 \cdot 10^{-6}$	$2.024 \cdot 10^{-6}$	$-4.941 \cdot 10^{-8}$
$HH \to z t \bar{t}$	$-4.358 \cdot 10^{-5}$	$-4.358 \cdot 10^{-5}$	$2.294 \cdot 10^{-8}$	$1.161 \cdot 10^{-5}$	$1.161 \cdot 10^{-5}$	0
$HH \rightarrow zz$	0.003767	0.003767	0	0.09486	0.09486	0
$HW^+ \to \gamma t \bar{b}$	$5.913 \cdot 10^{-10}$	$5.913 \cdot 10^{-10}$	$1.437 \cdot 10^{-6}$	$3.032 \cdot 10^{-10}$	$3.032 \cdot 10^{-10}$	$2.309 \cdot 10^{-7}$
$HW^+ \to \gamma u \bar{d}$	$1.488 \cdot 10^{-16}$	$1.488 \cdot 10^{-16}$	$2.016 \cdot 10^{-7}$	$1.193 \cdot 10^{-18}$	$1.193 \cdot 10^{-18}$	$1.677 \cdot 10^{-7}$
$HW^+ \to u\bar{d}$	$-3.018 \cdot 10^{-12}$	$-3.018 \cdot 10^{-12}$	$-9.941 \cdot 10^{-8}$	$3.342 \cdot 10^{-12}$	$3.342 \cdot 10^{-12}$	0
$HW^-  o \bar{t}b$	0.02149	0.02149	0	0.003166	0.003166	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$7.674 \cdot 10^{-20}$	$7.674 \cdot 10^{-20}$	$5.212 \cdot 10^{-7}$	$2.793 \cdot 10^{-20}$	$2.793 \cdot 10^{-20}$	$2.506 \cdot 10^{-7}$
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$-3.463 \cdot 10^{-10}$	$-3.463 \cdot 10^{-10}$	$-8.664 \cdot 10^{-8}$	$4.654 \cdot 10^{-10}$	$4.654 \cdot 10^{-10}$	0
$H\gamma \to b\bar{b}$	$-7.67 \cdot 10^{-6}$	$-7.67 \cdot 10^{-6}$	$2.477 \cdot 10^{-7}$	$5.812 \cdot 10^{-8}$	$5.812 \cdot 10^{-8}$	$2.409 \cdot 10^{-7}$
$H\gamma \to c\bar{c}$	$-1.455 \cdot 10^{-6}$	$-1.455 \cdot 10^{-6}$	$2.749 \cdot 10^{-7}$	$1.103 \cdot 10^{-8}$	$1.103 \cdot 10^{-8}$	$2.721 \cdot 10^{-7}$
$H\gamma \to d\bar{d}$	$-4.889 \cdot 10^{-12}$	$-4.889 \cdot 10^{-12}$	$2.455 \cdot 10^{-7}$	$3.705 \cdot 10^{-14}$	$3.705 \cdot 10^{-14}$	$2.429 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	$-1.027 \cdot 10^{-13}$	$-1.027 \cdot 10^{-13}$	$1.947 \cdot 10^{-7}$	$7.786 \cdot 10^{-16}$	$7.786 \cdot 10^{-16}$	$2.44 \cdot 10^{-7}$
$H\gamma \to t\bar{t}$	-0.02018	-0.02018	$2.478 \cdot 10^{-7}$	0.0001529	0.0001529	$2.616 \cdot 10^{-7}$
$Hz \to \mu^+\mu^-$	0.0003305	0.0003305	$-6.052 \cdot 10^{-8}$	$1.003 \cdot 10^{-5}$	$1.003 \cdot 10^{-5}$	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.0002299	0.0002299	0	$6.968 \cdot 10^{-6}$	$6.968 \cdot 10^{-6}$	0
$Hz  o b\bar{b}$	0.0014	0.0014	$-7.14 \cdot 10^{-8}$	$9.759 \cdot 10^{-5}$	$9.759 \cdot 10^{-5}$	$-4.099 \cdot 10^{-8}$
$Hz \to s\bar{s}$	0.001718	0.001718	$-1.164 \cdot 10^{-7}$	$5.211 \cdot 10^{-5}$	$5.211 \cdot 10^{-5}$	$-9.595 \cdot 10^{-8}$
$Hz \to t\bar{t}$	1.008	1.008	0	0.09983	0.09983	0
$Hz \to u\bar{u}$	0.001364	0.001364	$-1.466 \cdot 10^{-7}$	$4.135 \cdot 10^{-5}$	$4.135 \cdot 10^{-5}$	$-1.451 \cdot 10^{-7}$
$W^+W^- \to Hb\bar{b}$	$-1.429 \cdot 10^{-7}$	$-1.429 \cdot 10^{-7}$	$-2.8 \cdot 10^{-7}$	$1.806 \cdot 10^{-9}$	$1.806 \cdot 10^{-9}$	$-5.537 \cdot 10^{-8}$
$W^+W^-  o Hc\bar{c}$	$-1.217 \cdot 10^{-7}$	$-1.217 \cdot 10^{-7}$	$-2.465 \cdot 10^{-7}$	$3.99 \cdot 10^{-9}$	$3.99 \cdot 10^{-9}$	$-1.504 \cdot 10^{-7}$
$W^+W^- \to H d\bar{d}$	$-1.29 \cdot 10^{-5}$	$-1.29 \cdot 10^{-5}$	$-7.749 \cdot 10^{-8}$	$3.4 \cdot 10^{-7}$	$3.4 \cdot 10^{-7}$	$-1.177 \cdot 10^{-7}$
$W^+W^-  o H t \bar t$	$2.843 \cdot 10^{-7}$	$2.843 \cdot 10^{-7}$	$-3.517 \cdot 10^{-8}$	$2.028 \cdot 10^{-7}$	$2.028 \cdot 10^{-7}$	0

$\mu^{+}\mu^{-} \to \tau^{+}\tau^{-}$ -6.096 ·	$-6.096 \cdot 10^{-13}$	$1.64 \cdot 10^{-8}$	$9.096 \cdot 10^{-15}$	$9.096 \cdot 10^{-15}$	0
$b\bar{b} \to \mu^+\mu^1.104$	$10^{-12}$ $-1.104 \cdot 10^{-12}$	0	$1.678 \cdot 10^{-14}$	$1.678 \cdot 10^{-14}$	0
$b\bar{b} \to b\bar{b}$ 2.592 ·	$10^{-5} \qquad 2.592 \cdot 10^{-5}$	0	$1.765 \cdot 10^{-10}$	$1.765 \cdot 10^{-10}$	0
$b\bar{b} \to d\bar{d}$ $-6.502$ ·	$-6.502 \cdot 10^{-15}$	0	$9.831 \cdot 10^{-17}$	$9.831 \cdot 10^{-17}$	0
$b\bar{b} \to t\bar{t}$ $-5.193$		0	$1.185 \cdot 10^{-7}$	$1.185 \cdot 10^{-7}$	0
$b\bar{b} \to u\bar{u}$ $-1.38 \cdot$	$10^{-15}  -1.38 \cdot 10^{-15}$	0	$2.103 \cdot 10^{-17}$	$2.103 \cdot 10^{-17}$	0
$c\bar{c} \to \mu^+ \mu^- $ $-1.035 \cdot$			$1.549 \cdot 10^{-15}$	$1.549 \cdot 10^{-15}$	0
$d\bar{d} \to c\bar{c}$ $-5.989$ .			$9.076 \cdot 10^{-18}$	$9.076 \cdot 10^{-18}$	0
$d\bar{d} \to e^+ e^- \qquad -3.243 \cdot$			$4.898 \cdot 10^{-25}$	$4.898 \cdot 10^{-25}$	0
$d\bar{d} \to s\bar{s}$ $-3.204 \cdot$		0	$4.867 \cdot 10^{-20}$	$4.867 \cdot 10^{-20}$	0
$e^+\tau^- \to e^+\tau^-$ -2.187.			$1.81 \cdot 10^{-19}$	$1.81 \cdot 10^{-19}$	0
$e^+e^- \to \mu^+\mu^4.869$	$-4.869 \cdot 10^{-20}$	0	$7.521 \cdot 10^{-22}$	$7.521 \cdot 10^{-22}$	0
$e^+e^- \to e^+e^-$ 3.552 · 1		$3.66 \cdot 10^{-7}$	$5.087 \cdot 10^{-26}$	$5.087 \cdot 10^{-26}$	0
$s\bar{s} \to s\bar{s}$ 1.167.	$10^{-8} \qquad 1.167 \cdot 10^{-8}$	0	$4.35 \cdot 10^{-17}$	$4.35 \cdot 10^{-17}$	0
$t\bar{t} \to \tau^+ \tau^- $ $-5.037$		0	$7.629 \cdot 10^{-9}$	$7.629 \cdot 10^{-9}$	0
$t\bar{t} \to c\bar{c}$ $-7.713$		0	$1.169 \cdot 10^{-8}$	$1.169 \cdot 10^{-8}$	0
$t\bar{t} \to d\bar{d}$ $-1.044 \cdot$		0	$1.581 \cdot 10^{-13}$	$1.581 \cdot 10^{-13}$	0
$t\bar{t} \to s\bar{s}$ $-4.152$	$\cdot 10^{-9}  -4.152 \cdot 10^{-9}$	0	$6.269 \cdot 10^{-11}$	$6.269 \cdot 10^{-11}$	0
$t\bar{t} \to t\bar{t}$ 0.010		0	0.0005226	0.0005226	0
$u\bar{d} \to u\bar{d}$ $-6.13 \cdot$		$1.631 \cdot 10^{-8}$	$2.262 \cdot 10^{-23}$	$2.262 \cdot 10^{-23}$	0
$u\bar{u} \to c\bar{c}$ $-1.275 \cdot$		0	$1.942 \cdot 10^{-18}$	$1.942 \cdot 10^{-18}$	0
$u\bar{u} \to u\bar{u}$ 6.387 · 1	$10^{-12} \qquad 6.387 \cdot 10^{-12}$	0	$1.265 \cdot 10^{-23}$	$1.265 \cdot 10^{-23}$	0
$zz \to W^+W^-$ 3.56	3.569	$-2.522 \cdot 10^{-7}$	0.1118	0.1118	0
$zz \to zz$ 0.019	0.01978	0	0.001199	0.001199	0

### 2.7 cHG

$gg \to t\bar{t}$	-0.1694   -0.1694	0	$0.04069 \qquad 0.04069$	0
$gg \to u\bar{u}$	$-7.323 \cdot 10^{-12}  -7.323 \cdot 10^{-1}$	0 0	$7.223 \cdot 10^{-12}  7.223 \cdot 10^{-12}$	0

# 2.8 cHGtil

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$gg \to gg$	$6.198 \cdot 10^{-15}$	$6.198 \cdot 10^{-15}$	0	$3.006 \cdot 10^{-32}$	$3.006 \cdot 10^{-32}$	0		
$gg \to ggg$	$-8.026 \cdot 10^{-15}$	$-8.026 \cdot 10^{-15}$	0	$1.979 \cdot 10^{-26}$	$1.979 \cdot 10^{-26}$	0		
$gg  o t \bar t$	$2.368 \cdot 10^{-18}$	$2.368 \cdot 10^{-18}$	0	0.04069	0.04069	0		
$gg \to u\bar{u}$	$2.529 \cdot 10^{-27}$	$2.529 \cdot 10^{-27}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0		

# 2.9 cHQ1

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z\bar{b}b$	$4.961 \cdot 10^{-7}$	$4.961 \cdot 10^{-7}$	$-6.047 \cdot 10^{-8}$	$4.986 \cdot 10^{-7}$	$4.986 \cdot 10^{-7}$	0		
$HH \to z t \bar{t}$	0.000204	0.000204	$9.804 \cdot 10^{-8}$	0.0001421	0.0001421	0		
$Hz  o b\bar{b}$	0.2284	0.2284	$-4.378 \cdot 10^{-8}$	0.9915	0.9915	0		
$Hz \to t\bar{t}$	2.025	2.025	0	0.774	0.774	0		
$W^+W^-  o Hb\bar b$	0.0005381	0.0005381	$-2.973 \cdot 10^{-7}$	$1.922 \cdot 10^{-5}$	$1.922 \cdot 10^{-5}$	$-2.602 \cdot 10^{-7}$		
$W^+W^-  o H t \bar t$	$-7.311 \cdot 10^{-7}$	$-7.311 \cdot 10^{-7}$	$2.052 \cdot 10^{-7}$	$2.619 \cdot 10^{-6}$	$2.619 \cdot 10^{-6}$	$-3.818 \cdot 10^{-8}$		
$b\bar{b} \to \mu^+ \mu^-$	0.0001379	0.0001379	$-4.35 \cdot 10^{-7}$	$3.623 \cdot 10^{-6}$	$3.623 \cdot 10^{-6}$	$-4.417 \cdot 10^{-7}$		
$b\bar{b} \to \nu_e \bar{\nu}_e$	0.0002034	0.0002034	$-4.916 \cdot 10^{-8}$	$7.303 \cdot 10^{-6}$	$7.303 \cdot 10^{-6}$	0		
$b\bar{b}  o b\bar{b}$	-0.004948	-0.004948	$-8.083 \cdot 10^{-8}$	$5.275 \cdot 10^{-5}$	$5.275 \cdot 10^{-5}$	0		
$b\bar{b} \to d\bar{d}$	0.0005198	0.0005198	$-1.539 \cdot 10^{-7}$	$1.7 \cdot 10^{-5}$	$1.7\cdot 10^{-5}$	$-1.177 \cdot 10^{-7}$		
$b\bar{b}  o t\bar{t}$	-0.0007303	-0.0007303	$3.15 \cdot 10^{-7}$	$6.32 \cdot 10^{-6}$	$6.32 \cdot 10^{-6}$	$7.12 \cdot 10^{-7}$		
$b\bar{b} \to u\bar{u}$	0.001173	0.001173	$-2.558 \cdot 10^{-7}$	$3.311 \cdot 10^{-5}$	$3.311 \cdot 10^{-5}$	$-3.322 \cdot 10^{-7}$		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0001312	-0.0001312	$-1.524 \cdot 10^{-7}$	$6.093 \cdot 10^{-6}$	$6.093 \cdot 10^{-6}$	0		

$t\bar{t} \to \tau^+ \tau^-$	$-2.31 \cdot 10^{-5}$	$-2.31 \cdot 10^{-5}$	$-1.732 \cdot 10^{-6}$	$3.161 \cdot 10^{-6}$	$3.161 \cdot 10^{-6}$	$3.163 \cdot 10^{-7}$
$t\bar{t} \to c\bar{c}$	$-1.463 \cdot 10^{-5}$	$-1.463 \cdot 10^{-5}$	$-3.827 \cdot 10^{-6}$	$6.156 \cdot 10^{-6}$	$6.156 \cdot 10^{-6}$	$4.223 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	-0.0007367	-0.0007367	$-1.9 \cdot 10^{-7}$	$2.602 \cdot 10^{-5}$	$2.602 \cdot 10^{-5}$	$-1.153 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	$-5.373 \cdot 10^{-5}$	$-5.373 \cdot 10^{-5}$	$-4.839 \cdot 10^{-7}$	$3.66 \cdot 10^{-6}$	$3.66 \cdot 10^{-6}$	$1.093 \cdot 10^{-7}$
$t\bar{t}  o t\bar{t}$	0.1835	0.1835	$-5.449 \cdot 10^{-8}$	0.009449	0.009449	$1.058 \cdot 10^{-8}$

# 2.10 cHQ3

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
$HH \to W^+ \bar{t} b$	$1.987 \cdot 10^{-6}$	$1.987 \cdot 10^{-6}$	$-6.543 \cdot 10^{-7}$	$1.946 \cdot 10^{-5}$	$1.946 \cdot 10^{-5}$	0		
$HH \to z\bar{b}b$	0.008759	0.008759	$-6.85 \cdot 10^{-8}$	0.0003447	0.0003447	0		
$HH \to z t \bar{t}$	$-2.133 \cdot 10^{-5}$	$-2.133 \cdot 10^{-5}$	$-7.033 \cdot 10^{-7}$	$5.563 \cdot 10^{-5}$	$5.563 \cdot 10^{-5}$	0		
$HW^+  o \gamma t \bar{b}$	$1.107 \cdot 10^{-7}$	$1.107\cdot10^{-7}$	$9.036 \cdot 10^{-8}$	$9.465 \cdot 10^{-8}$	$9.465 \cdot 10^{-8}$	$2.324 \cdot 10^{-7}$		
$HW^- \to \bar{t}b$	-1.589	-1.589	0	1.95	1.95	0		
$Hz \to b\bar{b}$	0.1933	0.1933	$-5.172 \cdot 10^{-8}$	0.8399	0.8399	0		
$Hz \to t\bar{t}$	-1.582	-1.582	0	0.2893	0.2893	0		
$W^+W^-  o Hbar b$	$-5.848 \cdot 10^{-6}$	$-5.848 \cdot 10^{-6}$	$-6.839 \cdot 10^{-8}$	$3.192 \cdot 10^{-6}$	$3.192 \cdot 10^{-6}$	$-9.399 \cdot 10^{-8}$		
$W^+W^-  o H t \bar t$	$3.815 \cdot 10^{-6}$	$3.815 \cdot 10^{-6}$	$-7.863 \cdot 10^{-8}$	$4.649 \cdot 10^{-6}$	$4.649 \cdot 10^{-6}$	$-2.151 \cdot 10^{-8}$		
$\bar{b}t \to \bar{d}u$	0.004084	0.004084	$-2.204 \cdot 10^{-7}$	0.0001238	0.0001238	$-1.616 \cdot 10^{-7}$		
$b\bar{b} \to \mu^+ \mu^-$	$5.794 \cdot 10^{-5}$	$5.794 \cdot 10^{-5}$	$3.452 \cdot 10^{-8}$	$2.989 \cdot 10^{-6}$	$2.989 \cdot 10^{-6}$	$3.68 \cdot 10^{-7}$		
$b\bar{b}  o  u_e \bar{ u}_e$	0.0001579	0.0001579	$-6.331 \cdot 10^{-8}$	$5.671 \cdot 10^{-6}$	$5.671 \cdot 10^{-6}$	0		
$b\bar{b}  o b\bar{b}$	-0.008053	-0.008053	$-6.209 \cdot 10^{-8}$	$8.694 \cdot 10^{-5}$	$8.694 \cdot 10^{-5}$	$-3.451 \cdot 10^{-8}$		
$b\bar{b} \to d\bar{d}$	0.0007246	0.0007246	$-1.518 \cdot 10^{-7}$	$2.353 \cdot 10^{-5}$	$2.353 \cdot 10^{-5}$	$-1.275 \cdot 10^{-7}$		
$b\bar{b}  o t\bar{t}$	-0.0153	-0.0153	$6.536 \cdot 10^{-8}$	0.003801	0.003801	$-2.631 \cdot 10^{-8}$		
$b\bar{b} \to u\bar{u}$	0.0009514	0.0009514	$-2.838 \cdot 10^{-7}$	$2.691 \cdot 10^{-5}$	$2.691 \cdot 10^{-5}$	$-3.344 \cdot 10^{-7}$		
$b\bar{t} \to e^- \bar{\nu}_e$	$6.304 \cdot 10^{-6}$	$6.304 \cdot 10^{-6}$	$-2.221 \cdot 10^{-7}$	$1.911 \cdot 10^{-7}$	$1.911 \cdot 10^{-7}$	$-2.093 \cdot 10^{-7}$		
$t\bar{t}  ightarrow  u_{\mu} \bar{ u}_{\mu}$	$6.227 \cdot 10^{-6}$	$6.227 \cdot 10^{-6}$	$-7.548 \cdot 10^{-7}$	$5.905 \cdot 10^{-7}$	$5.905 \cdot 10^{-7}$	0		
$t\bar{t} \to \tau^+ \tau^-$	$6.612 \cdot 10^{-5}$	$6.612 \cdot 10^{-5}$	$-7.259 \cdot 10^{-7}$	$3.122 \cdot 10^{-6}$	$3.122 \cdot 10^{-6}$	$3.203 \cdot 10^{-8}$		

$t\bar{t} \to c\bar{c}$	0.0003121	0.0003121	$-3.204 \cdot 10^{-7}$	$1.068 \cdot 10^{-5}$	$1.068 \cdot 10^{-5}$	$-1.872 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	0.0003177	0.0003177	$-2.203 \cdot 10^{-7}$	$1.2\cdot 10^{-5}$	$1.2\cdot 10^{-5}$	$-8.334 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$9.11 \cdot 10^{-5}$	$9.11 \cdot 10^{-5}$	$-3.513 \cdot 10^{-7}$	$4.774 \cdot 10^{-6}$	$4.774 \cdot 10^{-6}$	$2.095 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	-0.03926	-0.03926	$-2.547 \cdot 10^{-8}$	0.008558	0.008558	$1.169 \cdot 10^{-8}$

## 2.11 cHW

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \rightarrow Hzz$	$-7.389 \cdot 10^{-6}$	$-7.389 \cdot 10^{-6}$	$-1.083 \cdot 10^{-7}$	$6.744 \cdot 10^{-6}$	$6.744 \cdot 10^{-6}$	$-2.224 \cdot 10^{-7}$
$HH  o W^+W^-$	0.4304	0.4304	$-4.647 \cdot 10^{-8}$	11.59	11.59	$-8.631 \cdot 10^{-8}$
$HH \to W^+W^-\gamma$	$1.439 \cdot 10^{-6}$	$1.439 \cdot 10^{-6}$	$-1.39 \cdot 10^{-6}$	0.0002921	0.0002921	$2.054 \cdot 10^{-7}$
$HH \to W^+ \bar{t} b$	$-1.372 \cdot 10^{-5}$	$-1.372 \cdot 10^{-5}$	$-1.458 \cdot 10^{-7}$	$1.182 \cdot 10^{-5}$	$1.182 \cdot 10^{-5}$	$-1.693 \cdot 10^{-7}$
$HH \to W^+ e^- \bar{\nu}_e$	$1.049 \cdot 10^{-6}$	$1.049 \cdot 10^{-6}$	$-2.86 \cdot 10^{-7}$	$6.254 \cdot 10^{-6}$	$6.254 \cdot 10^{-6}$	$-1.119 \cdot 10^{-7}$
$HH \to W^- u \bar{d}$	$2.018 \cdot 10^{-6}$	$2.018 \cdot 10^{-6}$	$-2.477 \cdot 10^{-7}$	$6.071 \cdot 10^{-6}$	$6.071 \cdot 10^{-6}$	$-1.153 \cdot 10^{-7}$
$HH \to z\bar{b}b$	$-6.735 \cdot 10^{-7}$	$-6.735 \cdot 10^{-7}$	$-1.782 \cdot 10^{-7}$	$3.446 \cdot 10^{-6}$	$3.446 \cdot 10^{-6}$	$-2.321 \cdot 10^{-7}$
$HH \to z \nu_e \bar{\nu}_e$	$7.54 \cdot 10^{-7}$	$7.54 \cdot 10^{-7}$	$-1.061 \cdot 10^{-7}$	$1.281 \cdot 10^{-6}$	$1.281 \cdot 10^{-6}$	$-1.561 \cdot 10^{-7}$
$HH \to zc\bar{c}$	$3.942 \cdot 10^{-6}$	$3.942 \cdot 10^{-6}$	$-2.79 \cdot 10^{-7}$	$3.759 \cdot 10^{-5}$	$3.759 \cdot 10^{-5}$	$-2.395 \cdot 10^{-7}$
$HH \to z d\bar{d}$	$7.634 \cdot 10^{-7}$	$7.634 \cdot 10^{-7}$	$-1.703 \cdot 10^{-7}$	$6.447 \cdot 10^{-7}$	$6.447 \cdot 10^{-7}$	$-2.016 \cdot 10^{-7}$
$HH \rightarrow ze^+e^-$	$9.55 \cdot 10^{-8}$	$9.55 \cdot 10^{-8}$	$-4.607 \cdot 10^{-7}$	$4.978 \cdot 10^{-7}$	$4.978 \cdot 10^{-7}$	$-2.21 \cdot 10^{-7}$
$HH \to z t \bar{t}$	$-2.523 \cdot 10^{-5}$	$-2.523 \cdot 10^{-5}$	$-1.189 \cdot 10^{-7}$	$2.498 \cdot 10^{-6}$	$2.498 \cdot 10^{-6}$	$-2.402 \cdot 10^{-7}$
$HH \rightarrow zz$	0.03783	0.03783	$-1.057 \cdot 10^{-7}$	2.311	2.311	$-2.163 \cdot 10^{-7}$
$HW^+ \to \gamma t \bar{b}$	$-1.665 \cdot 10^{-7}$	$-1.665 \cdot 10^{-7}$	$1.802 \cdot 10^{-7}$	$3.296 \cdot 10^{-7}$	$3.296 \cdot 10^{-7}$	$1.517 \cdot 10^{-7}$
$HW^+ \to \gamma u \bar{d}$	$-3.048 \cdot 10^{-10}$	$-3.048 \cdot 10^{-10}$	$3.281 \cdot 10^{-8}$	$1.615 \cdot 10^{-8}$	$1.615 \cdot 10^{-8}$	$1.239 \cdot 10^{-7}$
$HW^+ \to u\bar{d}$	0.01087	0.01087	$-2.76 \cdot 10^{-7}$	0.0517	0.0517	$-9.671 \cdot 10^{-8}$
$HW^- \to \bar{t}b$	-0.06654	-0.06654	$-9.017 \cdot 10^{-8}$	0.082	0.082	$-1.098 \cdot 10^{-7}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$-4.218 \cdot 10^{-8}$	$-4.218 \cdot 10^{-8}$	$2.371 \cdot 10^{-8}$	$2.289 \cdot 10^{-6}$	$2.289 \cdot 10^{-6}$	$1.31\cdot 10^{-7}$
$HW^- \to \mu^- \bar{\nu}_{\mu}$	0.0047	0.0047	$-2.128 \cdot 10^{-7}$	0.02235	0.02235	$-8.947 \cdot 10^{-8}$
$H\gamma  o b ar{b}$	$-6.808 \cdot 10^{-6}$	$-6.808 \cdot 10^{-6}$	$2.497 \cdot 10^{-7}$	0.01205	0.01205	$2.49 \cdot 10^{-7}$
$H\gamma \to c\bar{c}$	$-4.268 \cdot 10^{-7}$	$-4.268 \cdot 10^{-7}$	$2.343 \cdot 10^{-7}$	0.01033	0.01033	$2.903 \cdot 10^{-7}$

$H\gamma \to d\bar{d}$	$-4.946 \cdot 10^{-12}$	$-4.946 \cdot 10^{-12}$	$2.426 \cdot 10^{-7}$	0.01108	0.01108	$1.805 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	$-1.798 \cdot 10^{-14}$	$-1.798 \cdot 10^{-14}$	$2.78 \cdot 10^{-7}$	0.003246	0.003246	$2.465 \cdot 10^{-7}$
$H\gamma \to t\bar{t}$	-0.02823	-0.02823	$2.479 \cdot 10^{-7}$	0.01174	0.01174	$2.555 \cdot 10^{-7}$
$Hz \to \mu^+\mu^-$	0.001262	0.001262	$-4.753 \cdot 10^{-7}$	0.006571	0.006571	$-2.283 \cdot 10^{-7}$
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	0.002622	0.002622	$-1.144 \cdot 10^{-7}$	0.007325	0.007325	$-2.184 \cdot 10^{-7}$
$Hz \to b\bar{b}$	0.006325	0.006325	$-1.739 \cdot 10^{-7}$	0.02101	0.02101	$-2.38 \cdot 10^{-7}$
$Hz \to s\bar{s}$	0.006009	0.006009	$-1.831 \cdot 10^{-7}$	0.01985	0.01985	$-2.518 \cdot 10^{-7}$
$Hz \to t\bar{t}$	-0.0983	-0.0983	$-2.136 \cdot 10^{-7}$	0.03632	0.03632	$-2.203 \cdot 10^{-7}$
$Hz \to u\bar{u}$	0.006308	0.006308	$-2.695 \cdot 10^{-7}$	0.0255	0.0255	$-2.353 \cdot 10^{-7}$
$W^+W^-  o Hb\bar{b}$	0.0007328	0.0007328	$-5.459 \cdot 10^{-8}$	0.008353	0.008353	$-1.197 \cdot 10^{-8}$
$W^+W^- \to H c\bar{c}$	$-1.458 \cdot 10^{-7}$	$-1.458 \cdot 10^{-7}$	$-2.743 \cdot 10^{-7}$	$8.663 \cdot 10^{-8}$	$8.663 \cdot 10^{-8}$	$-2.078 \cdot 10^{-7}$
$W^+W^-  o Hd\bar{d}$	$-1.289 \cdot 10^{-6}$	$-1.289 \cdot 10^{-6}$	$-2.328 \cdot 10^{-7}$	$8.709 \cdot 10^{-7}$	$8.709 \cdot 10^{-7}$	$-1.722 \cdot 10^{-7}$
$W^+W^- \to H t \bar t$	$6.915 \cdot 10^{-6}$	$6.915 \cdot 10^{-6}$	$-1.157 \cdot 10^{-7}$	$1.099 \cdot 10^{-5}$	$1.099 \cdot 10^{-5}$	0
$W^+W^-  o W^+W^-$	0.2373	0.2373	0	2.582	2.582	0
$W^+W^- \to \gamma\gamma$	-0.0143	-0.0143	$6.293 \cdot 10^{-7}$	0.02503	0.02503	$7.191 \cdot 10^{-7}$
$W^+W^- \to \gamma\gamma\gamma$	$-4.082 \cdot 10^{-8}$	$-4.082 \cdot 10^{-8}$	$7.595 \cdot 10^{-7}$	$9.185 \cdot 10^{-7}$	$9.185 \cdot 10^{-7}$	$8.928 \cdot 10^{-7}$
$\gamma W^+  o z W^+$	0.04785	0.04785	$1.672 \cdot 10^{-7}$	0.06328	0.06328	$2.37 \cdot 10^{-7}$
$b\bar{b} \to \gamma \gamma$	$-1.349 \cdot 10^{-7}$	$-1.349 \cdot 10^{-7}$	$5.928 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	$7.014 \cdot 10^{-7}$
$zz  o W^+W^-$	-0.3393	-0.3393	$-3.536 \cdot 10^{-7}$	1.421	1.421	$-7.04 \cdot 10^{-8}$
$zz \to zz$	0.005982	0.005982	$-1.17 \cdot 10^{-7}$	0.8246	0.8246	$-2.183 \cdot 10^{-7}$

## 2.12 cHWB

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to Hzz$	$-1.945 \cdot 10^{-5}$	$-1.945 \cdot 10^{-5}$	$1.028 \cdot 10^{-7}$	$1.501 \cdot 10^{-5}$	$1.501 \cdot 10^{-5}$	$2.666 \cdot 10^{-7}$	
$HH  o W^+W^-\gamma$	$6.826 \cdot 10^{-7}$	$6.826 \cdot 10^{-7}$	$6.3 \cdot 10^{-7}$	$5.434 \cdot 10^{-5}$	$5.434 \cdot 10^{-5}$	$-2.024 \cdot 10^{-7}$	
$HH \to z\bar{b}b$	0.04129	0.04129	$2.422 \cdot 10^{-8}$	0.01291	0.01291	$1.549 \cdot 10^{-7}$	
$HH  o z \nu_e \bar{\nu}_e$	$6.938 \cdot 10^{-8}$	$6.938 \cdot 10^{-8}$	$1.153 \cdot 10^{-7}$	$1.601 \cdot 10^{-7}$	$1.601 \cdot 10^{-7}$	$2.499 \cdot 10^{-7}$	

$HH \to zc\bar{c}$	$3.652 \cdot 10^{-7}$	$3.652 \cdot 10^{-7}$	$1.643 \cdot 10^{-7}$	$1.622 \cdot 10^{-7}$	$1.622 \cdot 10^{-7}$	$2.466 \cdot 10^{-7}$
$HH \to z d\bar{d}$	$2.674 \cdot 10^{-7}$	$2.674 \cdot 10^{-7}$	$7.481 \cdot 10^{-8}$	$5.167 \cdot 10^{-7}$	$5.167 \cdot 10^{-7}$	$2.516 \cdot 10^{-7}$
$HH \rightarrow ze^+e^-$	$9.584 \cdot 10^{-6}$	$9.584 \cdot 10^{-6}$	$1.461 \cdot 10^{-7}$	0.0001525	0.0001525	$3.279 \cdot 10^{-7}$
$HH \to z t \bar{t}$	$8.619 \cdot 10^{-5}$	$8.619 \cdot 10^{-5}$	$1.16 \cdot 10^{-7}$	$4.943 \cdot 10^{-5}$	$4.943 \cdot 10^{-5}$	$2.428 \cdot 10^{-7}$
$HH \rightarrow zz$	0.05541	0.05541	$1.263 \cdot 10^{-7}$	1.14	1.14	$2.631 \cdot 10^{-7}$
$HW^+ \to \gamma t \bar{b}$	$1.531 \cdot 10^{-7}$	$1.531 \cdot 10^{-7}$	$-1.959 \cdot 10^{-6}$	$3.246 \cdot 10^{-6}$	$3.246 \cdot 10^{-6}$	$-1.849 \cdot 10^{-7}$
$HW^+ \to \gamma u\bar{d}$	$-3.084 \cdot 10^{-6}$	$-3.084 \cdot 10^{-6}$	$-1.297 \cdot 10^{-7}$	$1.817 \cdot 10^{-5}$	$1.817 \cdot 10^{-5}$	$-3.303 \cdot 10^{-7}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$1.156 \cdot 10^{-8}$	$1.156 \cdot 10^{-8}$	$-8.648 \cdot 10^{-8}$	$4.768 \cdot 10^{-8}$	$4.768 \cdot 10^{-8}$	$-1.888 \cdot 10^{-7}$
$H\gamma \to b\bar{b}$	$1.937 \cdot 10^{-5}$	$1.937 \cdot 10^{-5}$	$-1.549 \cdot 10^{-7}$	0.01068	0.01068	$-2.808 \cdot 10^{-7}$
$H\gamma \to c\bar{c}$	$4.167 \cdot 10^{-8}$	$4.167 \cdot 10^{-8}$	$-1.171 \cdot 10^{-5}$	0.01441	0.01441	0
$H\gamma \to d\bar{d}$	$3.941 \cdot 10^{-12}$	$3.941 \cdot 10^{-12}$	$-6.091 \cdot 10^{-7}$	0.008889	0.008889	$-2.7 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	$-1.733 \cdot 10^{-13}$	$-1.733 \cdot 10^{-13}$	$4.039 \cdot 10^{-7}$	0.005085	0.005085	$1.377 \cdot 10^{-7}$
$H\gamma \to t\bar{t}$	0.01657	0.01657	$-3.017 \cdot 10^{-7}$	0.01388	0.01388	0
$Hz \to \mu^+\mu^-$	0.001127	0.001127	$3.55\cdot 10^{-7}$	0.002498	0.002498	$2.402 \cdot 10^{-7}$
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.002596	0.002596	$1.541 \cdot 10^{-7}$	0.003743	0.003743	$2.405 \cdot 10^{-7}$
$Hz \to b\bar{b}$	0.004492	0.004492	$8.904 \cdot 10^{-8}$	0.004383	0.004383	$2.51\cdot 10^{-7}$
$Hz \to s\bar{s}$	0.004427	0.004427	$9.035 \cdot 10^{-8}$	0.003716	0.003716	$2.691 \cdot 10^{-7}$
$Hz \to t\bar{t}$	1.256	1.256	$7.964 \cdot 10^{-8}$	0.08703	0.08703	$2.413 \cdot 10^{-7}$
$Hz \to u\bar{u}$	0.003187	0.003187	$1.569 \cdot 10^{-7}$	0.003579	0.003579	$2.515 \cdot 10^{-7}$
$W^+W^- \to H b \bar b$	$-5.442 \cdot 10^{-7}$	$-5.442 \cdot 10^{-7}$	0	$5.249 \cdot 10^{-8}$	$5.249 \cdot 10^{-8}$	$3.048 \cdot 10^{-7}$
$W^+W^- \to H c \bar c$	$-8.956 \cdot 10^{-8}$	$-8.956 \cdot 10^{-8}$	$-2.122 \cdot 10^{-7}$	$9.07 \cdot 10^{-8}$	$9.07 \cdot 10^{-8}$	$3.749 \cdot 10^{-7}$
$W^+W^- \to H d\bar{d}$	$-1.388 \cdot 10^{-6}$	$-1.388 \cdot 10^{-6}$	$-2.162 \cdot 10^{-6}$	$1.185 \cdot 10^{-6}$	$1.185 \cdot 10^{-6}$	$1.687 \cdot 10^{-7}$
$W^+W^-  o H t \bar t$	$-2.562 \cdot 10^{-7}$	$-2.562 \cdot 10^{-7}$	$1.951 \cdot 10^{-7}$	$2.03 \cdot 10^{-7}$	$2.03 \cdot 10^{-7}$	$3.94 \cdot 10^{-7}$
$W^+W^- \to W^+W^-$	-12.12	-12.12	0	0.5085	0.5085	$2.556 \cdot 10^{-7}$
$W^+W^-  o \gamma\gamma$	-0.02084	-0.02084	$5.757 \cdot 10^{-7}$	0.07916	0.07916	$2.527 \cdot 10^{-7}$
$W^+W^- \to \gamma\gamma\gamma$	$-2.63 \cdot 10^{-8}$	$-2.63 \cdot 10^{-8}$	$1.255 \cdot 10^{-6}$	$9.245 \cdot 10^{-8}$	$9.245 \cdot 10^{-8}$	$4.976 \cdot 10^{-7}$
$\gamma W^+  o z W^+$	35.13	35.13	$-6.263 \cdot 10^{-7}$	1.567	1.567	$-3.829 \cdot 10^{-7}$
$\mu^+\mu^- \to \tau^+\tau^-$	-0.0014	-0.0014	$7.142 \cdot 10^{-8}$	$3.752 \cdot 10^{-5}$	$3.752 \cdot 10^{-5}$	$2.399 \cdot 10^{-7}$
$\nu_{\tau}\bar{\nu}_{\tau} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.0004339	0.0004339	$1.152 \cdot 10^{-7}$	$1.113 \cdot 10^{-5}$	$1.113 \cdot 10^{-5}$	$2.695 \cdot 10^{-7}$

$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	0.001513	0.001513	$1.322 \cdot 10^{-7}$	$3.88 \cdot 10^{-5}$	$3.88 \cdot 10^{-5}$	$2.577 \cdot 10^{-7}$
$b\bar{b}  o \gamma \gamma$	$-8.086 \cdot 10^{-6}$	$-8.086 \cdot 10^{-6}$	$6.307 \cdot 10^{-7}$	$2.354 \cdot 10^{-6}$	$2.354 \cdot 10^{-6}$	$2.974 \cdot 10^{-7}$
$b\bar{b} \to \mu^+\mu^-$	$1.247 \cdot 10^{-5}$	$1.247 \cdot 10^{-5}$	$1.203 \cdot 10^{-6}$	$8.213 \cdot 10^{-6}$	$8.213 \cdot 10^{-6}$	$2.557 \cdot 10^{-7}$
$b\bar{b}  o \nu_e \bar{\nu}_e$	$9.787 \cdot 10^{-5}$	$9.787 \cdot 10^{-5}$	$9.196 \cdot 10^{-8}$	$2.286 \cdot 10^{-6}$	$2.286 \cdot 10^{-6}$	$2.187 \cdot 10^{-7}$
$bar{b}  o bar{b}$	-0.001189	-0.001189	$8.413 \cdot 10^{-8}$	$3.536 \cdot 10^{-5}$	$3.536 \cdot 10^{-5}$	$2.262 \cdot 10^{-7}$
$b\bar{b}  o d\bar{d}$	0.0002489	0.0002489	$8.036 \cdot 10^{-8}$	$3.739 \cdot 10^{-6}$	$3.739 \cdot 10^{-6}$	$2.674 \cdot 10^{-7}$
$b\bar{b}  o t\bar{t}$	-0.001419	-0.001419	$7.047 \cdot 10^{-8}$	$2.389 \cdot 10^{-5}$	$2.389 \cdot 10^{-5}$	$2.511 \cdot 10^{-7}$
$b\bar{b} \to u\bar{u}$	$3.064 \cdot 10^{-6}$	$3.064 \cdot 10^{-6}$	$4.243 \cdot 10^{-7}$	$2.936 \cdot 10^{-7}$	$2.936 \cdot 10^{-7}$	$2.384 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	-0.0001991	-0.0001991	$5.022 \cdot 10^{-7}$	$2.041 \cdot 10^{-5}$	$2.041 \cdot 10^{-5}$	$2.45 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	$2.792 \cdot 10^{-5}$	$2.792 \cdot 10^{-5}$	$4.656 \cdot 10^{-7}$	$7.294 \cdot 10^{-6}$	$7.294 \cdot 10^{-6}$	$2.468 \cdot 10^{-7}$
$d\bar{d} \to e^+e^-$	$-7.061 \cdot 10^{-5}$	$-7.061 \cdot 10^{-5}$	$-8.498 \cdot 10^{-8}$	$2.437 \cdot 10^{-6}$	$2.437 \cdot 10^{-6}$	$2.462 \cdot 10^{-7}$
$d\bar{d} \to s\bar{s}$	$8.73 \cdot 10^{-5}$	$8.73 \cdot 10^{-5}$	$1.947 \cdot 10^{-7}$	$5.616 \cdot 10^{-6}$	$5.616 \cdot 10^{-6}$	$2.493 \cdot 10^{-7}$
$e^+\nu_\mu \to e^+\nu_\mu$	0.01887	0.01887	$4.77 \cdot 10^{-7}$	0.001036	0.001036	$2.896 \cdot 10^{-7}$
$e^+\nu_e \to e^+\nu_e$	0.002548	0.002548	$5.103 \cdot 10^{-7}$	0.0001399	0.0001399	$2.859 \cdot 10^{-7}$
$e^+\tau^- \to e^+\tau^-$	-0.05469	-0.05469	$3.474 \cdot 10^{-7}$	0.002323	0.002323	$2.583 \cdot 10^{-7}$
$e^+e^- \to \mu^+\mu^-$	-0.001478	-0.001478	$4.738 \cdot 10^{-7}$	$8.112 \cdot 10^{-5}$	$8.112 \cdot 10^{-5}$	$2.465 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	-0.00446	-0.00446	$4.708 \cdot 10^{-7}$	0.0002427	0.0002427	$2.472 \cdot 10^{-7}$
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$3.319 \cdot 10^{-5}$	$3.319 \cdot 10^{-5}$	$4.821 \cdot 10^{-7}$	$1.821 \cdot 10^{-6}$	$1.821 \cdot 10^{-6}$	$2.197 \cdot 10^{-7}$
$s\bar{s} \to s\bar{s}$	-0.0001357	-0.0001357	$-2.211 \cdot 10^{-7}$	$2.45 \cdot 10^{-5}$	$2.45 \cdot 10^{-5}$	$2.449 \cdot 10^{-7}$
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$9.586 \cdot 10^{-5}$	$9.586 \cdot 10^{-5}$	$5.111 \cdot 10^{-7}$	$5.484 \cdot 10^{-6}$	$5.484 \cdot 10^{-6}$	$2.553 \cdot 10^{-7}$
$t\bar{t} \to \tau^+ \tau^-$	-0.000181	-0.000181	$2.21 \cdot 10^{-7}$	$9.189 \cdot 10^{-6}$	$9.189 \cdot 10^{-6}$	$2.394 \cdot 10^{-7}$
$t\bar{t} \to c\bar{c}$	-0.0002525	-0.0002525	$1.584 \cdot 10^{-7}$	$1.393 \cdot 10^{-5}$	$1.393 \cdot 10^{-5}$	$2.153 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	$-5.658 \cdot 10^{-7}$	$-5.658 \cdot 10^{-7}$	$-2.381 \cdot 10^{-5}$	$8.453 \cdot 10^{-6}$	$8.453 \cdot 10^{-6}$	$2.484 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	$2.674 \cdot 10^{-5}$	$2.674 \cdot 10^{-5}$	$1.01 \cdot 10^{-6}$	$1.584 \cdot 10^{-5}$	$1.584 \cdot 10^{-5}$	$2.526 \cdot 10^{-7}$
$t\bar{t} \to t\bar{t}$	-0.01199	-0.01199	$1.668 \cdot 10^{-7}$	0.001739	0.001739	$2.301 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	0.001186	0.001186	$5.059 \cdot 10^{-7}$	0.0003918	0.0003918	$2.297 \cdot 10^{-7}$
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.0001352	0.0001352	$5.178 \cdot 10^{-7}$	$7.423 \cdot 10^{-6}$	$7.423 \cdot 10^{-6}$	$2.56\cdot 10^{-7}$
$u\bar{u} \to c\bar{c}$	-0.0001767	-0.0001767	$3.395 \cdot 10^{-7}$	$2.346 \cdot 10^{-5}$	$2.346 \cdot 10^{-5}$	$2.557 \cdot 10^{-7}$
$u\bar{u} \to u\bar{u}$	-0.0002799	-0.0002799	$8.574 \cdot 10^{-7}$	$9.847 \cdot 10^{-5}$	$9.847 \cdot 10^{-5}$	$2.539 \cdot 10^{-7}$

$zz \to W^+W^-$	2.976	2.976	$-2.352 \cdot 10^{-7}$	0.2592	0.2592	$1.929 \cdot 10^{-7}$
$zz \to zz$	0.02005	0.02005	$9.976 \cdot 10^{-8}$	0.2415	0.2415	$2.484 \cdot 10^{-7}$

### 2.13 cHWBtil

		interfere	nce		square	
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \rightarrow Hzz$	$-3.355 \cdot 10^{-6}$	$-3.355 \cdot 10^{-6}$	$1.192 \cdot 10^{-7}$	$2.948 \cdot 10^{-6}$	$2.948 \cdot 10^{-6}$	$2.714 \cdot 10^{-7}$
$HH \rightarrow W^+W^-\gamma$	$-3.996 \cdot 10^{-6}$	$-3.996 \cdot 10^{-6}$	$-8.258 \cdot 10^{-7}$	$3.668 \cdot 10^{-5}$	$3.668 \cdot 10^{-5}$	$-1.091 \cdot 10^{-7}$
$HH \to z\bar{b}b$	$-4.149 \cdot 10^{-7}$	$-4.149 \cdot 10^{-7}$	$9.641 \cdot 10^{-8}$	$6.561 \cdot 10^{-7}$	$6.561 \cdot 10^{-7}$	$2.591 \cdot 10^{-7}$
$HH \to z \nu_e \bar{\nu}_e$	$-5.748 \cdot 10^{-8}$	$-5.748 \cdot 10^{-8}$	$1.218 \cdot 10^{-7}$	$1.119 \cdot 10^{-7}$	$1.119 \cdot 10^{-7}$	$2.681 \cdot 10^{-7}$
$HH \to zc\bar{c}$	$1.633 \cdot 10^{-8}$	$1.633 \cdot 10^{-8}$	$2.45 \cdot 10^{-7}$	$2.122 \cdot 10^{-8}$	$2.122 \cdot 10^{-8}$	$2.356 \cdot 10^{-7}$
$HH \to z d\bar{d}$	$1.782 \cdot 10^{-7}$	$1.782 \cdot 10^{-7}$	$1.122 \cdot 10^{-7}$	$8.219 \cdot 10^{-8}$	$8.219 \cdot 10^{-8}$	$2.433 \cdot 10^{-7}$
$HH \rightarrow ze^+e^-$	$-6.341 \cdot 10^{-8}$	$-6.341 \cdot 10^{-8}$	$4.889 \cdot 10^{-7}$	$3.082 \cdot 10^{-7}$	$3.082 \cdot 10^{-7}$	$2.595 \cdot 10^{-7}$
$HH \to z t \bar{t}$	$-1.169 \cdot 10^{-8}$	$-1.169 \cdot 10^{-8}$	$3.422 \cdot 10^{-7}$	$1.933 \cdot 10^{-6}$	$1.933 \cdot 10^{-6}$	$2.586 \cdot 10^{-7}$
$HH \rightarrow zz$	$2.636 \cdot 10^{-16}$	$1.09 \cdot 10^{-16}$	0.5863	0.6782	0.6782	$2.507\cdot10^{-7}$
$HW^+ \to \gamma t \bar{b}$	$-1.731 \cdot 10^{-7}$	$-1.731 \cdot 10^{-7}$	$-5.776 \cdot 10^{-8}$	$1.284 \cdot 10^{-6}$	$1.284 \cdot 10^{-6}$	$-1.558 \cdot 10^{-7}$
$HW^+ \to \gamma u \bar{d}$	$-8.327 \cdot 10^{-9}$	$-8.327 \cdot 10^{-9}$	$-7.205 \cdot 10^{-8}$	$6.513 \cdot 10^{-8}$	$6.513 \cdot 10^{-8}$	$-1.996 \cdot 10^{-7}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$2.998 \cdot 10^{-8}$	$2.998 \cdot 10^{-8}$	$-6.672 \cdot 10^{-8}$	$4.704 \cdot 10^{-8}$	$4.704 \cdot 10^{-8}$	$-2.126 \cdot 10^{-7}$
$H\gamma  o b\bar{b}$	$1.623 \cdot 10^{-9}$	$1.623 \cdot 10^{-9}$	$-1.848 \cdot 10^{-7}$	0.008237	0.008237	$-2.671 \cdot 10^{-7}$
$H\gamma \to c\bar{c}$	$6.14 \cdot 10^{-10}$	$6.14 \cdot 10^{-10}$	$-1.955 \cdot 10^{-7}$	0.01577	0.01577	$-6.342 \cdot 10^{-8}$
$H\gamma \to d\bar{d}$	$-2.706 \cdot 10^{-16}$	$-2.706 \cdot 10^{-16}$	$-1.847 \cdot 10^{-7}$	0.006351	0.006351	$-2.677 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	$-2.915 \cdot 10^{-17}$	$-2.915 \cdot 10^{-17}$	$-1.715 \cdot 10^{-7}$	0.006972	0.006972	$1.147 \cdot 10^{-7}$
$H\gamma \to t\bar{t}$	$-2.25 \cdot 10^{-6}$	$-2.25 \cdot 10^{-6}$	$-2.223 \cdot 10^{-7}$	0.01105	0.01105	$-9.048 \cdot 10^{-8}$
$Hz \to \mu^+\mu^-$	$2.749 \cdot 10^{-7}$	$2.749 \cdot 10^{-7}$	$-1.819 \cdot 10^{-7}$	0.003502	0.003502	$2.57\cdot 10^{-7}$
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$-2.823 \cdot 10^{-22}$	$-7.228 \cdot 10^{-20}$	-255	0.003653	0.003653	$2.464 \cdot 10^{-7}$
$Hz  o b\bar{b}$	$-1.879 \cdot 10^{-7}$	$-1.879 \cdot 10^{-7}$	$-1.596 \cdot 10^{-7}$	0.004615	0.004615	$2.6 \cdot 10^{-7}$
$Hz \to s\bar{s}$	$2.624 \cdot 10^{-7}$	$2.624 \cdot 10^{-7}$	$-1.905 \cdot 10^{-7}$	0.005675	0.005675	$2.643 \cdot 10^{-7}$
$Hz \to t\bar{t}$	$5.449 \cdot 10^{-5}$	$5.449 \cdot 10^{-5}$	$-1.89 \cdot 10^{-6}$	0.007277	0.007277	$2.474 \cdot 10^{-7}$

$Hz \to u\bar{u}$	$4.187 \cdot 10^{-7}$	$4.187 \cdot 10^{-7}$	$-1.911 \cdot 10^{-7}$	0.004811	0.004811	$2.494 \cdot 10^{-7}$
$W^+W^-  o Hb\bar{b}$	$1.131 \cdot 10^{-6}$	$1.131 \cdot 10^{-6}$	0	$6.827 \cdot 10^{-7}$	$6.827 \cdot 10^{-7}$	$3.076 \cdot 10^{-7}$
$W^+W^- \to H c \bar c$	$-4.212 \cdot 10^{-7}$	$-4.212 \cdot 10^{-7}$	$9.497 \cdot 10^{-8}$	$2.836 \cdot 10^{-7}$	$2.836 \cdot 10^{-7}$	$3.526 \cdot 10^{-7}$
$W^+W^-  o H d \bar d$	$-5.136 \cdot 10^{-8}$	$-5.136 \cdot 10^{-8}$	$1.168 \cdot 10^{-7}$	$3.931 \cdot 10^{-8}$	$3.931 \cdot 10^{-8}$	$3.561 \cdot 10^{-7}$
$W^+W^- \to H t \bar t$	$1.956 \cdot 10^{-8}$	$1.956 \cdot 10^{-8}$	$1.022 \cdot 10^{-7}$	$2.369 \cdot 10^{-7}$	$2.369 \cdot 10^{-7}$	$3.377 \cdot 10^{-7}$
$W^+W^- \to W^+W^-$	$1.333 \cdot 10^{-16}$	$-6.153 \cdot 10^{-17}$	1.462	0.00439	0.00439	$3.417 \cdot 10^{-7}$
$W^+W^-  o \gamma\gamma$	$7.711 \cdot 10^{-17}$	$-1.19 \cdot 10^{-17}$	1.154	0.0772	0.0772	$2.461 \cdot 10^{-7}$
$W^+W^-  o \gamma\gamma\gamma$	$-1.522 \cdot 10^{-8}$	$-1.522 \cdot 10^{-8}$	$5.257 \cdot 10^{-7}$	$2.567 \cdot 10^{-7}$	$2.567 \cdot 10^{-7}$	$4.674 \cdot 10^{-7}$
$\gamma W^+ \to z W^+$	$4.848 \cdot 10^{-16}$	$6.595 \cdot 10^{-16}$	-0.3605	0.7494	0.7494	$-2.402 \cdot 10^{-7}$
$b\bar{b} \to \gamma \gamma$	$-1.101 \cdot 10^{-22}$	$-1.433 \cdot 10^{-24}$	0.987	$2.152 \cdot 10^{-6}$	$2.152 \cdot 10^{-6}$	$2.323 \cdot 10^{-7}$
$zz \to W^+W^-$	$-3.266 \cdot 10^{-17}$	$4.862 \cdot 10^{-16}$	15.88	0.1707	0.1707	$2.344 \cdot 10^{-7}$
$zz \rightarrow zz$	$1.887 \cdot 10^{-18}$	$-1.087 \cdot 10^{-18}$	1.576	0.2475	0.2475	$2.425 \cdot 10^{-7}$

## 2.14 cHWtil

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
$HH \rightarrow Hzz$	$-6.118 \cdot 10^{-6}$	$-6.118 \cdot 10^{-6}$	$-9.808 \cdot 10^{-8}$	$5.074 \cdot 10^{-6}$	$5.074 \cdot 10^{-6}$	$-2.168 \cdot 10^{-7}$		
$HH  o W^+W^-$	$-6.427 \cdot 10^{-15}$	$1.205 \cdot 10^{-14}$	2.874	9.811	9.811	$-1.019 \cdot 10^{-8}$		
$HH  o W^+W^-\gamma$	$-1.129 \cdot 10^{-6}$	$-1.129 \cdot 10^{-6}$	$1.771 \cdot 10^{-7}$	$9.382 \cdot 10^{-5}$	$9.382 \cdot 10^{-5}$	$2.558 \cdot 10^{-7}$		
$HH \to W^+ \bar{t} b$	$-9.318 \cdot 10^{-7}$	$-9.318 \cdot 10^{-7}$	$-1.073 \cdot 10^{-8}$	$9.155 \cdot 10^{-7}$	$9.155 \cdot 10^{-7}$	$-1.092 \cdot 10^{-7}$		
$HH \to W^+ e^- \bar{\nu}_e$	$3.14\cdot 10^{-7}$	$3.14 \cdot 10^{-7}$	$-2.229 \cdot 10^{-7}$	$4.672 \cdot 10^{-7}$	$4.672 \cdot 10^{-7}$	$-8.562 \cdot 10^{-8}$		
$HH \to W^- u \bar{d}$	$1.728 \cdot 10^{-6}$	$1.728 \cdot 10^{-6}$	$-2.894 \cdot 10^{-7}$	$1.829 \cdot 10^{-5}$	$1.829 \cdot 10^{-5}$	$-1.093 \cdot 10^{-7}$		
$HH  o z \bar{b} b$	$-7.073 \cdot 10^{-8}$	$-7.073 \cdot 10^{-8}$	$-1.697 \cdot 10^{-7}$	$2.071 \cdot 10^{-8}$	$2.071 \cdot 10^{-8}$	$-1.931 \cdot 10^{-7}$		
$HH \to z \nu_e \bar{\nu}_e$	$7.75 \cdot 10^{-8}$	$7.75 \cdot 10^{-8}$	$-1.032 \cdot 10^{-7}$	$2.522 \cdot 10^{-7}$	$2.522 \cdot 10^{-7}$	$-1.983 \cdot 10^{-7}$		
$HH \to zc\bar{c}$	$-2.634 \cdot 10^{-9}$	$-2.634 \cdot 10^{-9}$	$-3.037 \cdot 10^{-7}$	$1.134 \cdot 10^{-6}$	$1.134 \cdot 10^{-6}$	$-1.764 \cdot 10^{-7}$		
$HH \to z d\bar{d}$	$2.952 \cdot 10^{-8}$	$2.952 \cdot 10^{-8}$	$-2.033 \cdot 10^{-7}$	$6.718 \cdot 10^{-7}$	$6.718 \cdot 10^{-7}$	$-2.233 \cdot 10^{-7}$		
$HH \rightarrow ze^+e^-$	$-1.238 \cdot 10^{-7}$	$-1.238 \cdot 10^{-7}$	$-4.04 \cdot 10^{-7}$	$4.968 \cdot 10^{-7}$	$4.968 \cdot 10^{-7}$	$-2.013 \cdot 10^{-7}$		
$HH \to z t \bar{t}$	$-4.244 \cdot 10^{-6}$	$-4.244 \cdot 10^{-6}$	$-2.828 \cdot 10^{-7}$	$1.444 \cdot 10^{-5}$	$1.444 \cdot 10^{-5}$	$-2.078 \cdot 10^{-7}$		

$HH \rightarrow zz$	$-2.553 \cdot 10^{-16}$	$-4.988 \cdot 10^{-16}$	-0.9537	2.244	2.244	$-1.783 \cdot 10^{-7}$
$HW^+ \to \gamma t \bar{b}$	$-5.507 \cdot 10^{-8}$	$-5.507 \cdot 10^{-8}$	$9.08 \cdot 10^{-8}$	$3.882 \cdot 10^{-7}$	$3.882 \cdot 10^{-7}$	$1.546 \cdot 10^{-7}$
$HW^+ \to \gamma u \bar{d}$	$-1.548 \cdot 10^{-8}$	$-1.548 \cdot 10^{-8}$	0	$1.1 \cdot 10^{-6}$	$1.1 \cdot 10^{-6}$	$9.095 \cdot 10^{-8}$
$HW^+ \to u\bar{d}$	$-1.127 \cdot 10^{-14}$	$-1.127 \cdot 10^{-14}$	$-5.128 \cdot 10^{-5}$	0.0634	0.0634	$-1.104 \cdot 10^{-7}$
$HW^- \to \bar{t}b$	0.0002604	0.0002604	$-1.152 \cdot 10^{-7}$	0.07658	0.07658	$-1.045 \cdot 10^{-7}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$-9.488 \cdot 10^{-9}$	$-9.488 \cdot 10^{-9}$	$1.265 \cdot 10^{-7}$	$4.543 \cdot 10^{-6}$	$4.543 \cdot 10^{-6}$	$1.321 \cdot 10^{-7}$
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$8.858 \cdot 10^{-13}$	$8.858 \cdot 10^{-13}$	$-1.016 \cdot 10^{-7}$	0.01731	0.01731	$-1.155 \cdot 10^{-7}$
$H\gamma  o b\bar{b}$	$-1.067 \cdot 10^{-9}$	$-1.067 \cdot 10^{-9}$	$2.811 \cdot 10^{-7}$	0.0099	0.0099	$2.525 \cdot 10^{-7}$
$H\gamma \to c\bar{c}$	$-3.022 \cdot 10^{-10}$	$-3.022 \cdot 10^{-10}$	$2.647 \cdot 10^{-7}$	0.01065	0.01065	$2.816 \cdot 10^{-7}$
$H\gamma \to d\bar{d}$	$5.735 \cdot 10^{-15}$	$5.735 \cdot 10^{-15}$	$2.441 \cdot 10^{-7}$	0.01366	0.01366	$2.197 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	$-8.06 \cdot 10^{-17}$	$-8.06 \cdot 10^{-17}$	$2.481 \cdot 10^{-7}$	0.004684	0.004684	$2.348 \cdot 10^{-7}$
$H\gamma \to t\bar{t}$	$1.959 \cdot 10^{-5}$	$1.959 \cdot 10^{-5}$	$2.552 \cdot 10^{-7}$	0.01049	0.01049	$2.861 \cdot 10^{-7}$
$Hz \to \mu^+\mu^-$	$4.122 \cdot 10^{-7}$	$4.122 \cdot 10^{-7}$	$2.426 \cdot 10^{-7}$	0.01097	0.01097	$-2.735 \cdot 10^{-7}$
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$-2.892 \cdot 10^{-19}$	$1.412 \cdot 10^{-22}$	1	0.01274	0.01274	$-1.57 \cdot 10^{-7}$
$Hz \to b\bar{b}$	$2.936 \cdot 10^{-7}$	$2.936 \cdot 10^{-7}$	$2.384 \cdot 10^{-7}$	0.02619	0.02619	$-2.291 \cdot 10^{-7}$
$Hz \to s\bar{s}$	$2.917 \cdot 10^{-7}$	$2.917 \cdot 10^{-7}$	$2.743 \cdot 10^{-7}$	0.02646	0.02646	$-2.268 \cdot 10^{-7}$
$Hz \to t\bar{t}$	$-6.732 \cdot 10^{-6}$	$-6.732 \cdot 10^{-6}$	$-5.496 \cdot 10^{-7}$	0.02713	0.02713	$-2.212 \cdot 10^{-7}$
$Hz \to u\bar{u}$	$9.866 \cdot 10^{-7}$	$9.866 \cdot 10^{-7}$	$2.534 \cdot 10^{-7}$	0.03871	0.03871	$-2.067 \cdot 10^{-7}$
$W^+W^- \to H b \bar b$	$-3.027 \cdot 10^{-8}$	$-3.027 \cdot 10^{-8}$	$-1.322 \cdot 10^{-7}$	$2.132 \cdot 10^{-8}$	$2.132 \cdot 10^{-8}$	$-9.382 \cdot 10^{-8}$
$W^+W^- \to Hc\bar{c}$	$-3.589 \cdot 10^{-9}$	$-3.589 \cdot 10^{-9}$	$-3.344 \cdot 10^{-7}$	$2.046 \cdot 10^{-9}$	$2.046 \cdot 10^{-9}$	$-1.466 \cdot 10^{-7}$
$W^+W^- \to H d\bar{d}$	$-4.453 \cdot 10^{-7}$	$-4.453 \cdot 10^{-7}$	$-4.042 \cdot 10^{-7}$	$1.135 \cdot 10^{-5}$	$1.135 \cdot 10^{-5}$	$-1.763 \cdot 10^{-7}$
$W^+W^- \to H t \bar t$	$-1.232 \cdot 10^{-5}$	$-1.232 \cdot 10^{-5}$	$-8.117 \cdot 10^{-8}$	$2.714 \cdot 10^{-5}$	$2.714 \cdot 10^{-5}$	$-3.684 \cdot 10^{-8}$
$W^+W^-  o W^+W^-$	$1.284 \cdot 10^{-17}$	$6.588 \cdot 10^{-16}$	-50.32	1.999	1.999	0
$W^+W^- \to \gamma\gamma$	$-1.929 \cdot 10^{-18}$	$-9.762 \cdot 10^{-19}$	0.4941	0.02503	0.02503	$7.191 \cdot 10^{-7}$
$W^+W^- \to \gamma\gamma\gamma$	$9.951 \cdot 10^{-9}$	$9.951 \cdot 10^{-9}$	$7.638 \cdot 10^{-7}$	$2.72 \cdot 10^{-8}$	$2.72\cdot10^{-8}$	$9.558 \cdot 10^{-7}$
$\gamma W^+ \to z W^+$	$6.295 \cdot 10^{-17}$	$1.931 \cdot 10^{-16}$	-2.067	0.06231	0.06231	$2.407 \cdot 10^{-7}$
$b\bar{b}  o \gamma \gamma$	$3.215 \cdot 10^{-25}$	$4.386 \cdot 10^{-25}$	-0.3643	$6.558 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	$7.014 \cdot 10^{-7}$
$zz \to W^+W^-$	$-4.298 \cdot 10^{-16}$	$2.52 \cdot 10^{-15}$	6.864	1.419	1.419	$-7.045 \cdot 10^{-8}$
$zz \to zz$	$8.175 \cdot 10^{-18}$	$7.627 \cdot 10^{-18}$	0.06707	1.011	1.011	$-2.969 \cdot 10^{-7}$

## 2.15 cHbq

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o z \bar{b} b$	$-2.041 \cdot 10^{-7}$	$-2.041 \cdot 10^{-7}$	$3.919 \cdot 10^{-7}$	$9.837 \cdot 10^{-7}$	$9.837 \cdot 10^{-7}$	0		
$Hz \to b\bar{b}$	-0.02812	-0.02812	$3.557 \cdot 10^{-7}$	0.6871	0.6871	0		
$W^+W^- \to H b \bar b$	$-2.91 \cdot 10^{-7}$	$-2.91 \cdot 10^{-7}$	$1.031 \cdot 10^{-7}$	$1.379 \cdot 10^{-7}$	$1.379 \cdot 10^{-7}$	$-2.901 \cdot 10^{-7}$		
$b\bar{b}  o \mu^+\mu^-$	$2.355 \cdot 10^{-5}$	$2.355 \cdot 10^{-5}$	$-2.124 \cdot 10^{-7}$	$3.828 \cdot 10^{-6}$	$3.828 \cdot 10^{-6}$	$-4.964 \cdot 10^{-7}$		
$b\bar{b}  o  u_e \bar{ u}_e$	-0.0001023	-0.0001023	$3.909 \cdot 10^{-7}$	$1.992 \cdot 10^{-5}$	$1.992 \cdot 10^{-5}$	0		
$b\bar{b}  o b\bar{b}$	0.01723	0.01723	$3.482 \cdot 10^{-7}$	0.002555	0.002555	$-1.174 \cdot 10^{-7}$		
$b\bar{b}  o d\bar{d}$	$-8.9 \cdot 10^{-5}$	$-8.9 \cdot 10^{-5}$	$2.809 \cdot 10^{-7}$	$4.326 \cdot 10^{-5}$	$4.326 \cdot 10^{-5}$	$-1.156 \cdot 10^{-7}$		
$b\bar{b}  o t\bar{t}$	-0.0001203	-0.0001203	$7.483 \cdot 10^{-7}$	$5.446 \cdot 10^{-6}$	$5.446 \cdot 10^{-6}$	$6.611 \cdot 10^{-7}$		
$b\bar{b} \to u\bar{u}$	$-3.831 \cdot 10^{-5}$	$-3.831 \cdot 10^{-5}$	$8.874 \cdot 10^{-7}$	$7.974 \cdot 10^{-6}$	$7.974 \cdot 10^{-6}$	$-1.254 \cdot 10^{-8}$		

## 2.16 cHd

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to z d\bar{d}$	$-5.434 \cdot 10^{-7}$	$-5.434 \cdot 10^{-7}$	$3.681 \cdot 10^{-7}$	$6.021 \cdot 10^{-6}$	$6.021 \cdot 10^{-6}$	0	
$Hz \to s\bar{s}$	-0.01615	-0.01615	$3.096 \cdot 10^{-7}$	0.3781	0.3781	0	
$W^+W^-  o H d \bar d$	$-9.513 \cdot 10^{-8}$	$-9.513 \cdot 10^{-8}$	$2.102 \cdot 10^{-7}$	$3.952 \cdot 10^{-7}$	$3.952 \cdot 10^{-7}$	$-1.518 \cdot 10^{-7}$	
$b\bar{b}  o d\bar{d}$	$-8.902 \cdot 10^{-5}$	$-8.902 \cdot 10^{-5}$	$2.921 \cdot 10^{-7}$	$4.326 \cdot 10^{-5}$	$4.326 \cdot 10^{-5}$	$-1.156 \cdot 10^{-7}$	
$d\bar{d} \to c\bar{c}$	$1.37\cdot 10^{-5}$	$1.37\cdot 10^{-5}$	$-5.838 \cdot 10^{-7}$	$1.452 \cdot 10^{-5}$	$1.452 \cdot 10^{-5}$	$-2.754 \cdot 10^{-7}$	
$d\bar{d} \to e^+e^-$	$-4.145 \cdot 10^{-5}$	$-4.145 \cdot 10^{-5}$	$8.443 \cdot 10^{-7}$	$2.998 \cdot 10^{-6}$	$2.998 \cdot 10^{-6}$	$4.003 \cdot 10^{-7}$	
$d\bar{d} \to s\bar{s}$	$-7.171 \cdot 10^{-5}$	$-7.171 \cdot 10^{-5}$	$7.112 \cdot 10^{-7}$	$6.594 \cdot 10^{-6}$	$6.594 \cdot 10^{-6}$	$7.128 \cdot 10^{-7}$	
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-5.098 \cdot 10^{-6}$	$-5.098 \cdot 10^{-6}$	$3.727 \cdot 10^{-7}$	$9.924 \cdot 10^{-7}$	$9.924 \cdot 10^{-7}$	0	
$s\bar{s} \to s\bar{s}$	0.001377	0.001377	$3.632 \cdot 10^{-7}$	0.0003202	0.0003202	$-1.249 \cdot 10^{-7}$	
$t\bar{t} \to d\bar{d}$	$5.531 \cdot 10^{-5}$	$5.531 \cdot 10^{-5}$	$1.266 \cdot 10^{-7}$	$2.15 \cdot 10^{-5}$	$2.15 \cdot 10^{-5}$	$-3.256 \cdot 10^{-7}$	
$t\bar{t}  o s\bar{s}$	$8.147 \cdot 10^{-5}$	$8.147 \cdot 10^{-5}$	$1.841 \cdot 10^{-7}$	$2.95 \cdot 10^{-5}$	$2.95 \cdot 10^{-5}$	$-3.389 \cdot 10^{-7}$	

 $u\bar{d} \to u\bar{d}$  0.0001966 0.0001966  $-5.085 \cdot 10^{-7}$  0.0001865 0.0001865  $-2.681 \cdot 10^{-7}$ 

### 2.17 cHe

		rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \rightarrow ze^+e^-$	$-8.101 \cdot 10^{-7}$	$-8.101 \cdot 10^{-7}$	$3.456 \cdot 10^{-7}$	$3.322 \cdot 10^{-6}$	$3.322 \cdot 10^{-6}$	0	
$Hz \to \mu^+\mu^-$	-0.01966	-0.01966	$3.561 \cdot 10^{-7}$	0.1534	0.1534	0	
$\mu^+\mu^- \to \tau^+\tau^-$	-0.0003617	-0.0003617	$1.161 \cdot 10^{-6}$	$2.649 \cdot 10^{-5}$	$2.649 \cdot 10^{-5}$	$3.019 \cdot 10^{-7}$	
$b\bar{b} \to \mu^+ \mu^-$	$-2.913 \cdot 10^{-5}$	$-2.913 \cdot 10^{-5}$	$6.867 \cdot 10^{-7}$	$7.994 \cdot 10^{-7}$	$7.994 \cdot 10^{-7}$	$3.002 \cdot 10^{-7}$	
$c\bar{c} \to \mu^+ \mu^-$	-0.0001186	-0.0001186	$7.59 \cdot 10^{-7}$	$1.944 \cdot 10^{-6}$	$1.944 \cdot 10^{-6}$	$6.688 \cdot 10^{-7}$	
$d\bar{d} \rightarrow e^+e^-$	$-3.806 \cdot 10^{-5}$	$-3.806 \cdot 10^{-5}$	$3.679 \cdot 10^{-7}$	$5.027 \cdot 10^{-6}$	$5.027 \cdot 10^{-6}$	$-1.193 \cdot 10^{-7}$	
$e^+\nu_{\mu} \rightarrow e^+\nu_{\mu}$	-0.003182	-0.003182	$3.457 \cdot 10^{-7}$	0.0002065	0.0002065	0	
$e^+\nu_e \to e^+\nu_e$	-0.00251	-0.00251	$3.586 \cdot 10^{-7}$	0.0001628	0.0001628	0	
$e^+\tau^- \to e^+\tau^-$	0.001664	0.001664	$-4.928 \cdot 10^{-6}$	0.0008244	0.0008244	$-3.639 \cdot 10^{-8}$	
$e^+e^-  o \mu^+\mu^-$	0.0009309	0.0009309	$4.297 \cdot 10^{-8}$	$3.364 \cdot 10^{-5}$	$3.364 \cdot 10^{-5}$	$-6.242 \cdot 10^{-7}$	
$e^+e^- \rightarrow e^+e^-$	0.002542	0.002542	$7.867 \cdot 10^{-8}$	$8.762 \cdot 10^{-5}$	$8.762 \cdot 10^{-5}$	$-6.277 \cdot 10^{-7}$	
$t\bar{t} \to  au^+ au^-$	$6.094 \cdot 10^{-5}$	$6.094 \cdot 10^{-5}$	$1.641 \cdot 10^{-7}$	$7.803 \cdot 10^{-6}$	$7.803 \cdot 10^{-6}$	$-3.332 \cdot 10^{-7}$	

### 2.18 cHj1

	interference			square
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
$HH \to zc\bar{c}$	$-5.078 \cdot 10^{-6}$	$-5.078 \cdot 10^{-6}$	$-1.576 \cdot 10^{-7}$	$1.593 \cdot 10^{-5}$ $1.593 \cdot 10^{-5}$ 0
$HH \to z d\bar{d}$	$1.245 \cdot 10^{-6}$	$1.245 \cdot 10^{-6}$	$-8.03 \cdot 10^{-8}$	$1.52 \cdot 10^{-6}$ $1.52 \cdot 10^{-6}$ 0
$Hz \to s\bar{s}$	0.2367	0.2367	$-8.45 \cdot 10^{-8}$	1.022 $1.022$ 0
$Hz \to u\bar{u}$	-0.1978	-0.1978	$-2.022 \cdot 10^{-7}$	1.047 $1.047$ $0$
$W^+W^-  o H c \bar c$	$-2.049 \cdot 10^{-7}$	$-2.049 \cdot 10^{-7}$	$-1.952 \cdot 10^{-7}$	$1.449 \cdot 10^{-7}$ $1.449 \cdot 10^{-7}$ $-6.901 \cdot 10^{-8}$
$W^+W^-  o Hd\bar{d}$	0.0001959	0.0001959	$-1.531 \cdot 10^{-7}$	$2.576 \cdot 10^{-5}$ $2.576 \cdot 10^{-5}$ $-1.165 \cdot 10^{-7}$

$b\bar{b} \to d\bar{d}$	0.0007246	0.0007246	$-1.518 \cdot 10^{-7}$	$2.353 \cdot 10^{-5}$	$2.353 \cdot 10^{-5}$	$-1.275 \cdot 10^{-7}$
$b\bar{b} \to u\bar{u}$	-0.001165	-0.001165	$-1.716 \cdot 10^{-7}$	$4.037 \cdot 10^{-5}$	$4.037 \cdot 10^{-5}$	$-1.486 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	$4.429 \cdot 10^{-5}$	$4.429 \cdot 10^{-5}$	$7.676 \cdot 10^{-7}$	$4.378 \cdot 10^{-6}$	$4.378 \cdot 10^{-6}$	$6.853 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	$-3.891 \cdot 10^{-5}$	$-3.891 \cdot 10^{-5}$	$-7.71\cdot10^{-8}$	$2.64 \cdot 10^{-6}$	$2.64 \cdot 10^{-6}$	$7.198 \cdot 10^{-7}$
$d\bar{d} \to e^+e^-$	0.0001498	0.0001498	$-4.673 \cdot 10^{-7}$	$3.827 \cdot 10^{-6}$	$3.827 \cdot 10^{-6}$	$-4.964 \cdot 10^{-7}$
$d\bar{d} \to s\bar{s}$	0.0003544	0.0003544	$-1.129 \cdot 10^{-7}$	$2.334 \cdot 10^{-5}$	$2.334 \cdot 10^{-5}$	$-8.57 \cdot 10^{-8}$
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$9.626 \cdot 10^{-8}$	$9.626 \cdot 10^{-8}$	$-6.233 \cdot 10^{-8}$	$3.456 \cdot 10^{-9}$	$3.456 \cdot 10^{-9}$	0
$s\bar{s} \to s\bar{s}$	-0.001602	-0.001602	$-6.244 \cdot 10^{-8}$	$2.123 \cdot 10^{-5}$	$2.123 \cdot 10^{-5}$	$1.413 \cdot 10^{-7}$
$t\bar{t} \to c\bar{c}$	-0.0003039	-0.0003039	$-3.619 \cdot 10^{-7}$	$9.785 \cdot 10^{-6}$	$9.785 \cdot 10^{-6}$	$-1.84 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	0.0002726	0.0002726	$-2.568 \cdot 10^{-7}$	$8.809 \cdot 10^{-6}$	$8.809 \cdot 10^{-6}$	$-1.249 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	0.0001119	0.0001119	0	$5.51 \cdot 10^{-6}$	$5.51 \cdot 10^{-6}$	$3.267 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	-0.001144	-0.001144	$-2.622 \cdot 10^{-7}$	0.0001301	0.0001301	$7.687 \cdot 10^{-7}$
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-3.023 \cdot 10^{-9}$	$-3.023 \cdot 10^{-9}$	$-1.654 \cdot 10^{-7}$	$1.331 \cdot 10^{-10}$	$1.331 \cdot 10^{-10}$	0
$u\bar{u} \to c\bar{c}$	-0.0001216	-0.0001216	$-9.05 \cdot 10^{-7}$	$1.751 \cdot 10^{-5}$	$1.751 \cdot 10^{-5}$	$1.142 \cdot 10^{-7}$
$u\bar{u} \to u\bar{u}$	0.001908	0.001908	0	$4.041 \cdot 10^{-5}$	$4.041 \cdot 10^{-5}$	$4.454 \cdot 10^{-7}$

## 2.19 cHj3

		interfer	rence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
$HH \to W^- u \bar{d}$	$3.057 \cdot 10^{-6}$	$3.057 \cdot 10^{-6}$	$-2.617 \cdot 10^{-7}$	$1.914 \cdot 10^{-6}$ $1.914 \cdot 10^{-6}$ $-1.568 \cdot 10^{-7}$
$HH \to z c \bar{c}$	$4.387 \cdot 10^{-6}$	$4.387 \cdot 10^{-6}$	$-1.595 \cdot 10^{-7}$	$1.059 \cdot 10^{-5}  1.059 \cdot 10^{-5}$
$HH \to z d\bar{d}$	$5.643 \cdot 10^{-6}$	$5.643 \cdot 10^{-6}$	$-7.089 \cdot 10^{-8}$	$1.382 \cdot 10^{-5}$ $1.382 \cdot 10^{-5}$ 0
$HW^+ \to \gamma u \bar{d}$	$1.039 \cdot 10^{-6}$	$1.039 \cdot 10^{-6}$	$9.627 \cdot 10^{-8}$	$1.471 \cdot 10^{-6}$ $1.471 \cdot 10^{-6}$ $2.039 \cdot 10^{-7}$
$HW^+ \to u\bar{d}$	0.3422	0.3422	$-1.169 \cdot 10^{-7}$	1.628 $1.628   -6.143 \cdot 10^{-8}$
$Hz \to s\bar{s}$	0.167	0.167	$-1.197 \cdot 10^{-7}$	$0.7213 \qquad 0.7213 \qquad 0$
$Hz \to u\bar{u}$	0.02048	0.02048	$-1.465 \cdot 10^{-7}$	$0.1084 \qquad 0.1084 \qquad 0$
$W^+W^-  o Hc\bar c$	$-5.853 \cdot 10^{-7}$	$-5.853 \cdot 10^{-7}$	$-1.538 \cdot 10^{-7}$	$8.837 \cdot 10^{-7}$ $8.837 \cdot 10^{-7}$ $-6.79 \cdot 10^{-8}$
$W^+W^-  o Hd\bar{d}$	$1.01 \cdot 10^{-5}$	$1.01 \cdot 10^{-5}$	$-3.96 \cdot 10^{-7}$	$2.956 \cdot 10^{-6}$ $2.956 \cdot 10^{-6}$ $-1.353 \cdot 10^{-7}$

$\bar{b}t \to \bar{d}u$	0.001017	0.001017	$-1.966 \cdot 10^{-7}$	$3.083 \cdot 10^{-5}$	$3.083 \cdot 10^{-5}$	$-2.271 \cdot 10^{-7}$
$b\bar{b}  o d\bar{d}$	0.000855	0.000855	$-1.521 \cdot 10^{-7}$	$2.771 \cdot 10^{-5}$	$2.771 \cdot 10^{-5}$	$-1.083 \cdot 10^{-7}$
$b\bar{b} \to u\bar{u}$	$7.532 \cdot 10^{-5}$	$7.532 \cdot 10^{-5}$	$-3.187 \cdot 10^{-7}$	$3.945 \cdot 10^{-6}$	$3.945 \cdot 10^{-6}$	$7.604 \cdot 10^{-8}$
$c\bar{c} \to \mu^+ \mu^-$	0.0003274	0.0003274	$-3.666 \cdot 10^{-7}$	$6.297 \cdot 10^{-6}$	$6.297 \cdot 10^{-6}$	$-6.193 \cdot 10^{-7}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$2.297 \cdot 10^{-5}$	$2.297 \cdot 10^{-5}$	$-2.177 \cdot 10^{-7}$	$6.962 \cdot 10^{-7}$	$6.962 \cdot 10^{-7}$	$-2.155 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	0.0007034	0.0007034	$-2.132 \cdot 10^{-7}$	$4.538 \cdot 10^{-5}$	$4.538 \cdot 10^{-5}$	$-1.763 \cdot 10^{-7}$
$d\bar{d} \to e^+e^-$	$5.323 \cdot 10^{-5}$	$5.323 \cdot 10^{-5}$	$7.139 \cdot 10^{-7}$	$4.754 \cdot 10^{-6}$	$4.754 \cdot 10^{-6}$	$6.941 \cdot 10^{-7}$
$d\bar{d} \to s\bar{s}$	0.002659	0.002659	$-1.504 \cdot 10^{-7}$	0.0001719	0.0001719	$-1.163 \cdot 10^{-7}$
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$2.397 \cdot 10^{-5}$	$2.397 \cdot 10^{-5}$	$-8.343 \cdot 10^{-8}$	$8.607 \cdot 10^{-7}$	$8.607 \cdot 10^{-7}$	0
$s\bar{s} \to s\bar{s}$	-0.003789	-0.003789	$-7.917 \cdot 10^{-8}$	$4.193 \cdot 10^{-5}$	$4.193 \cdot 10^{-5}$	$2.385 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$-7.877 \cdot 10^{-5}$	$-7.877 \cdot 10^{-5}$	$6.982 \cdot 10^{-7}$	$5.822 \cdot 10^{-6}$	$5.822 \cdot 10^{-6}$	$7.729 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	0.001067	0.001067	$-2.813 \cdot 10^{-7}$	$2.983 \cdot 10^{-5}$	$2.983 \cdot 10^{-5}$	$-3.352 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	0.0001402	0.0001402	$-7.134 \cdot 10^{-8}$	$5.985 \cdot 10^{-6}$	$5.985 \cdot 10^{-6}$	$1.838 \cdot 10^{-7}$
$u\bar{d} \to \mu^+ \nu_{\mu}$	$4.793 \cdot 10^{-5}$	$4.793 \cdot 10^{-5}$	$-2.087 \cdot 10^{-7}$	$1.453 \cdot 10^{-6}$	$1.453 \cdot 10^{-6}$	$-2.065 \cdot 10^{-7}$
$u\bar{d} \to c\bar{s}$	0.0006727	0.0006727	$-2.23 \cdot 10^{-7}$	$4.078 \cdot 10^{-5}$	$4.078 \cdot 10^{-5}$	$-1.962 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	-0.003136	-0.003136	$-6.378 \cdot 10^{-8}$	0.000169	0.000169	$-1.183 \cdot 10^{-7}$
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.0001229	0.0001229	$-1.627 \cdot 10^{-7}$	$5.412 \cdot 10^{-6}$	$5.412 \cdot 10^{-6}$	0
$u\bar{u} \to c\bar{c}$	0.001085	0.001085	$-2.765 \cdot 10^{-7}$	$5.98 \cdot 10^{-5}$	$5.98 \cdot 10^{-5}$	$-3.01 \cdot 10^{-7}$
$u\bar{u} \to u\bar{u}$	-0.0005273	-0.0005273	$3.414 \cdot 10^{-7}$	$2.866 \cdot 10^{-5}$	$2.866 \cdot 10^{-5}$	$6.63 \cdot 10^{-7}$

## 2.20 cHl1

		interfer	cence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
$HH \to z \nu_e \bar{\nu}_e$	$-3.83 \cdot 10^{-7}$	$-3.83 \cdot 10^{-7}$	0	$7.367 \cdot 10^{-8}$ $7.367 \cdot 10^{-8}$ 0
$HH \rightarrow ze^+e^-$	$6.37 \cdot 10^{-7}$	$6.37 \cdot 10^{-7}$	$-3.14 \cdot 10^{-7}$	$1.958 \cdot 10^{-6}$ $1.958 \cdot 10^{-6}$ 0
$Hz  o \mu^+\mu^-$	0.04877	0.04877	$-3.076 \cdot 10^{-7}$	0.3336 $0.3336$ $0$
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	-0.08455	-0.08455	0	$0.3082 \qquad 0.3082 \qquad 0$
$\mu^+\mu^- \to \tau^+\tau^-$	-0.0006056	-0.0006056	$8.422 \cdot 10^{-7}$	$2.333 \cdot 10^{-5}$ $2.333 \cdot 10^{-5}$ $5.571 \cdot 10^{-7}$
$ u_{ au} \bar{ u}_{ au}  ightarrow  u_{ au} \bar{ u}_{ au}$	-0.04156	-0.04156	0	$0.002519 \qquad 0.002519 \qquad 0$

$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	-0.002268	-0.002268	0	0.0001375	0.0001375	0
$b\bar{b}  o \mu^+ \mu^-$	0.0002677	0.0002677	$-2.241 \cdot 10^{-7}$	$1.004 \cdot 10^{-5}$	$1.004 \cdot 10^{-5}$	$-9.959 \cdot 10^{-8}$
$b\bar{b}  o  u_e \bar{ u}_e$	$-2.371 \cdot 10^{-5}$	$-2.371 \cdot 10^{-5}$	$3.795 \cdot 10^{-7}$	$7.188 \cdot 10^{-7}$	$7.188 \cdot 10^{-7}$	$3.617 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	0.0003413	0.0003413	$-2.344 \cdot 10^{-7}$	$8.542 \cdot 10^{-6}$	$8.542 \cdot 10^{-6}$	$-3.161 \cdot 10^{-7}$
$d\bar{d} \to e^+e^-$	$1.995 \cdot 10^{-5}$	$1.995 \cdot 10^{-5}$	$-7.018 \cdot 10^{-7}$	$1.434 \cdot 10^{-6}$	$1.434 \cdot 10^{-6}$	$6.974 \cdot 10^{-8}$
$e^+\nu_\mu \to e^+\nu_\mu$	-0.0009487	-0.0009487	$8.116 \cdot 10^{-7}$	$3.645 \cdot 10^{-5}$	$3.645 \cdot 10^{-5}$	$7.134 \cdot 10^{-7}$
$e^+\nu_e \to e^+\nu_e$	-0.0006626	-0.0006626	$8.451 \cdot 10^{-7}$	$2.664 \cdot 10^{-5}$	$2.664 \cdot 10^{-5}$	$7.131 \cdot 10^{-7}$
$e^+\tau^- \rightarrow e^+\tau^-$	-0.001353	-0.001353	$8.132 \cdot 10^{-7}$	$4.729 \cdot 10^{-5}$	$4.729 \cdot 10^{-5}$	$6.132 \cdot 10^{-7}$
$e^+e^-  o \mu^+\mu^-$	0.001527	0.001527	$-3.929 \cdot 10^{-7}$	$5.218 \cdot 10^{-5}$	$5.218 \cdot 10^{-5}$	$-5.941 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	0.03817	0.03817	$-2.515 \cdot 10^{-6}$	0.006035	0.006035	$-1.16 \cdot 10^{-7}$
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	-0.0003057	-0.0003057	$-1.309 \cdot 10^{-7}$	$9.266 \cdot 10^{-6}$	$9.266 \cdot 10^{-6}$	$-1.295 \cdot 10^{-7}$
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$-6.266 \cdot 10^{-5}$	$-6.266 \cdot 10^{-5}$	$7.661 \cdot 10^{-7}$	$1.899 \cdot 10^{-6}$	$1.899 \cdot 10^{-6}$	$7.371 \cdot 10^{-7}$
$t\bar{t} \to \tau^+ \tau^-$	0.0003751	0.0003751	$-2.399 \cdot 10^{-7}$	$9.104 \cdot 10^{-6}$	$9.104 \cdot 10^{-6}$	$-3.295 \cdot 10^{-7}$
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-7.035 \cdot 10^{-5}$	$-7.035 \cdot 10^{-5}$	$7.108 \cdot 10^{-7}$	$2.132 \cdot 10^{-6}$	$2.132 \cdot 10^{-6}$	$7.034 \cdot 10^{-7}$

### 2.21 cHl3

		interfe	erence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o W^+ e^- \bar{\nu}_e$	$5.891 \cdot 10^{-7}$	$5.891 \cdot 10^{-7}$	$-2.546 \cdot 10^{-7}$	$4.128 \cdot 10^{-7}$	$4.128 \cdot 10^{-7}$	$-1.211 \cdot 10^{-7}$	
$HH \to z \nu_e \bar{\nu}_e$	$4.32 \cdot 10^{-7}$	$4.32 \cdot 10^{-7}$	0	$3.069 \cdot 10^{-7}$	$3.069 \cdot 10^{-7}$	0	
$HH \rightarrow ze^+e^-$	$6.377 \cdot 10^{-7}$	$6.377 \cdot 10^{-7}$	$-3.136 \cdot 10^{-7}$	$1.764 \cdot 10^{-6}$	$1.764 \cdot 10^{-6}$	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$2.319 \cdot 10^{-8}$	$2.319 \cdot 10^{-8}$	$1.294 \cdot 10^{-7}$	$4.117 \cdot 10^{-8}$	$4.117 \cdot 10^{-8}$	$2.186 \cdot 10^{-7}$	
$HW^- \to \mu^- \bar{\nu}_{\mu}$	0.1043	0.1043	$-9.59 \cdot 10^{-8}$	0.496	0.496	$-2.016 \cdot 10^{-8}$	
$Hz \rightarrow \mu^+\mu^-$	0.05119	0.05119	$-3.125 \cdot 10^{-7}$	0.3502	0.3502	0	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.08653	0.08653	0	0.3155	0.3155	0	
$\mu^+\mu^- \to \tau^+\tau^-$	-0.0008837	-0.0008837	$7.242 \cdot 10^{-7}$	$2.761 \cdot 10^{-5}$	$2.761 \cdot 10^{-5}$	$6.881 \cdot 10^{-7}$	
$\nu_{ au} \bar{\nu}_{ au}  o \nu_{ au} \bar{\nu}_{ au}$	0.004184	0.004184	0	0.0002537	0.0002537	0	
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$7.697 \cdot 10^{-7}$	$7.697 \cdot 10^{-7}$	0	$4.666 \cdot 10^{-8}$	$4.666 \cdot 10^{-8}$	0	

$b\bar{b}  o \mu^+\mu^-$	0.0002077	0.0002077	$-2.408 \cdot 10^{-7}$	$7.867 \cdot 10^{-6}$	$7.867 \cdot 10^{-6}$	$-1.271 \cdot 10^{-7}$
$b\bar{b}  o  u_e \bar{ u}_e$	0.0001754	0.0001754	$-1.14 \cdot 10^{-7}$	$5.317 \cdot 10^{-6}$	$5.317 \cdot 10^{-6}$	$-1.128 \cdot 10^{-7}$
$b\bar{t} \to e^- \bar{\nu}_e$	0.0004277	0.0004277	$-2.104 \cdot 10^{-7}$	$1.296 \cdot 10^{-5}$	$1.296 \cdot 10^{-5}$	$-2.314 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	0.0001043	0.0001043	$-3.836 \cdot 10^{-7}$	$3.535 \cdot 10^{-6}$	$3.535 \cdot 10^{-6}$	$-1.697 \cdot 10^{-7}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	0.0009518	0.0009518	$-2.206 \cdot 10^{-7}$	$2.885 \cdot 10^{-5}$	$2.885 \cdot 10^{-5}$	$-2.426 \cdot 10^{-7}$
$d\bar{d} \rightarrow e^+e^-$	0.0002351	0.0002351	$-2.127 \cdot 10^{-7}$	$8.856 \cdot 10^{-6}$	$8.856 \cdot 10^{-6}$	$-1.242 \cdot 10^{-7}$
$e^+\nu_\mu \to e^+\nu_\mu$	0.009829	0.009829	$2.035 \cdot 10^{-8}$	0.0006395	0.0006395	$-4.691 \cdot 10^{-8}$
$e^+\nu_e \to \mu^+\nu_\mu$	0.003227	0.003227	$-2.479 \cdot 10^{-7}$	0.0001956	0.0001956	$-2.044 \cdot 10^{-7}$
$e^+\nu_e \to e^+\nu_e$	0.001061	0.001061	$2.828 \cdot 10^{-7}$	$4.777 \cdot 10^{-5}$	$4.777 \cdot 10^{-5}$	$1.675 \cdot 10^{-7}$
$e^+\tau^- \to e^+\tau^-$	70.57	70.57	$-3.84 \cdot 10^{-6}$	1.415	1.415	$-2.827 \cdot 10^{-7}$
$e^+e^- \to \mu^+\mu^-$	-0.0003807	-0.0003807	$1.156 \cdot 10^{-6}$	$2.22 \cdot 10^{-5}$	$2.22 \cdot 10^{-5}$	$4.054 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	-0.003241	-0.003241	$8.023 \cdot 10^{-7}$	0.0001147	0.0001147	$6.103 \cdot 10^{-7}$
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.586 \cdot 10^{-5}$	$9.586 \cdot 10^{-5}$	$-7.303 \cdot 10^{-8}$	$2.906 \cdot 10^{-6}$	$2.906 \cdot 10^{-6}$	$-6.883 \cdot 10^{-8}$
$t \bar t  o  u_\mu ar u_\mu$	0.0001057	0.0001057	$-1.892 \cdot 10^{-7}$	$3.204 \cdot 10^{-6}$	$3.204 \cdot 10^{-6}$	$-1.561 \cdot 10^{-7}$
$t\bar{t} \to \tau^+ \tau^-$	$3.075 \cdot 10^{-5}$	$3.075 \cdot 10^{-5}$	$-1.236 \cdot 10^{-6}$	$2.265 \cdot 10^{-6}$	$2.265 \cdot 10^{-6}$	$4.415 \cdot 10^{-8}$
$u\bar{d} \to \mu^+ \nu_\mu$	$2.483 \cdot 10^{-7}$	$2.483 \cdot 10^{-7}$	$-2.416 \cdot 10^{-7}$	$7.526 \cdot 10^{-9}$	$7.526 \cdot 10^{-9}$	$-2.126 \cdot 10^{-7}$
$u\bar{u} \to \nu_e \bar{\nu}_e$	$6.395 \cdot 10^{-5}$	$6.395 \cdot 10^{-5}$	$3.91 \cdot 10^{-7}$	$1.938 \cdot 10^{-6}$	$1.938 \cdot 10^{-6}$	$3.611 \cdot 10^{-7}$

### 2.22 cHt

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z t \bar{t}$	$8.479 \cdot 10^{-6}$	$8.479 \cdot 10^{-6}$	$-3.892 \cdot 10^{-7}$	$3.456 \cdot 10^{-5}$	$3.456 \cdot 10^{-5}$	0		
Hz  o t ar t	-2.226	-2.226	0	1.351	1.351	0		
$W^+W^-  o H t \bar t$	$7.498 \cdot 10^{-6}$	$7.498 \cdot 10^{-6}$	$-1.734 \cdot 10^{-7}$	$8.744 \cdot 10^{-7}$	$8.744 \cdot 10^{-7}$	$-4.575 \cdot 10^{-8}$		
$b\bar{b}  o t\bar{t}$	-0.001289	-0.001289	$-7.755 \cdot 10^{-8}$	$1.461 \cdot 10^{-5}$	$1.461 \cdot 10^{-5}$	$-6.843 \cdot 10^{-8}$		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.0001539	0.0001539	$3.898 \cdot 10^{-7}$	$1.653 \cdot 10^{-5}$	$1.653 \cdot 10^{-5}$	0		
$t\bar{t} \to \tau^+ \tau^-$	$-5.085 \cdot 10^{-5}$	$-5.085 \cdot 10^{-5}$	$-3.54 \cdot 10^{-7}$	$3.952 \cdot 10^{-6}$	$3.952 \cdot 10^{-6}$	$-4.555 \cdot 10^{-7}$		
$t\bar{t} \to c\bar{c}$	-0.0001898	-0.0001898	$1.054 \cdot 10^{-7}$	$3.235 \cdot 10^{-5}$	$3.235 \cdot 10^{-5}$	$-3.4 \cdot 10^{-7}$		

$t\bar{t} \to d\bar{d}$	$2.697 \cdot 10^{-5}$	$2.697 \cdot 10^{-5}$	$2.151 \cdot 10^{-6}$	$1.817 \cdot 10^{-6}$	$1.817 \cdot 10^{-6}$	$6.054 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	$6.798 \cdot 10^{-5}$	$6.798 \cdot 10^{-5}$	$6.472 \cdot 10^{-7}$	$2.522 \cdot 10^{-5}$	$2.522 \cdot 10^{-5}$	$-1.19 \cdot 10^{-7}$
$t \bar t  o t \bar t$	-0.03476	-0.03476	$2.877 \cdot 10^{-8}$	0.008909	0.008909	$-1.122 \cdot 10^{-8}$

### 2.23 cHtbIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+ \bar t b$	$-2.896 \cdot 10^{-7}$	$-2.896 \cdot 10^{-7}$	$-6.906 \cdot 10^{-8}$	$7.609 \cdot 10^{-6}$	$7.609 \cdot 10^{-6}$	$-1.314 \cdot 10^{-8}$		
$HW^+ \to \gamma t \bar{b}$	$-6.664 \cdot 10^{-9}$	$-6.664 \cdot 10^{-9}$	$2.101 \cdot 10^{-7}$	$2.508 \cdot 10^{-7}$	$2.508 \cdot 10^{-7}$	$1.994 \cdot 10^{-7}$		
$HW^- \to \bar{t}b$	$-7.901 \cdot 10^{-6}$	$-7.901 \cdot 10^{-6}$	$-5.063 \cdot 10^{-8}$	0.2406	0.2406	0		
$W^+W^-  o Hb\bar b$	$3.518 \cdot 10^{-5}$	$3.518 \cdot 10^{-5}$	$-2.842 \cdot 10^{-8}$	$2.888 \cdot 10^{-6}$	$2.888 \cdot 10^{-6}$	$3.462 \cdot 10^{-8}$		
$W^+W^- \to H t \bar t$	$-5.892 \cdot 10^{-9}$	$-5.892 \cdot 10^{-9}$	$-6.958 \cdot 10^{-7}$	$2.556 \cdot 10^{-9}$	$2.556 \cdot 10^{-9}$	$-3.913 \cdot 10^{-8}$		
$\bar{b}t \to \bar{d}u$	$6.744 \cdot 10^{-22}$	$2.011 \cdot 10^{-21}$	-1.983	$1.538 \cdot 10^{-5}$	$1.538 \cdot 10^{-5}$	$-2.6 \cdot 10^{-7}$		
$b\bar{b}  o t\bar{t}$	$3.987 \cdot 10^{-20}$	$-6.693 \cdot 10^{-21}$	1.168	0.0006009	0.0006009	$-4.992 \cdot 10^{-8}$		
$b\bar{t} \to e^-\bar{\nu}_e$	$-1.515 \cdot 10^{-21}$	$-1.861 \cdot 10^{-22}$	0.8771	$3.833 \cdot 10^{-6}$	$3.833 \cdot 10^{-6}$	$-2.087 \cdot 10^{-7}$		

## 2.24 cHtbRe

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to W^+ \bar{t} b$	$-8.055 \cdot 10^{-7}$	$-8.055 \cdot 10^{-7}$	$-7.449 \cdot 10^{-8}$	$7.169 \cdot 10^{-6}$	$7.169 \cdot 10^{-6}$	$-8.37 \cdot 10^{-8}$
$HW^+  o \gamma t \bar{b}$	$-4.252 \cdot 10^{-10}$	$-4.252 \cdot 10^{-10}$	$2.116 \cdot 10^{-7}$	$1.073 \cdot 10^{-8}$	$1.073 \cdot 10^{-8}$	$2.795 \cdot 10^{-7}$
$HW^- \to \bar{t}b$	-0.04096	-0.04096	0	0.2142	0.2142	$-4.668 \cdot 10^{-8}$
$W^+W^-  o Hb\bar{b}$	$-1.383 \cdot 10^{-7}$	$-1.383 \cdot 10^{-7}$	$-7.232 \cdot 10^{-8}$	$8.616 \cdot 10^{-7}$	$8.616 \cdot 10^{-7}$	$1.161 \cdot 10^{-8}$
$W^+W^- \to H t \bar t$	$-3.507 \cdot 10^{-7}$	$-3.507 \cdot 10^{-7}$	$-1.426 \cdot 10^{-7}$	$5.137 \cdot 10^{-9}$	$5.137 \cdot 10^{-9}$	0
$\bar{b}t \to \bar{d}u$	$-1.96 \cdot 10^{-6}$	$-1.96 \cdot 10^{-6}$	$-2.551 \cdot 10^{-7}$	$7.709 \cdot 10^{-6}$	$7.709 \cdot 10^{-6}$	$-2.205 \cdot 10^{-7}$
$b\bar{b}  o t\bar{t}$	0.001433	0.001433	0	0.006565	0.006565	$-1.675 \cdot 10^{-7}$
$b\bar{t} \to e^- \bar{\nu}_e$	$-6.534 \cdot 10^{-7}$	$-6.534 \cdot 10^{-7}$	$-2.143 \cdot 10^{-7}$	$1.171 \cdot 10^{-5}$	$1.171 \cdot 10^{-5}$	$-2.563 \cdot 10^{-7}$

### 2.25 cHu

		interf	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z c \bar{c}$	$1.983 \cdot 10^{-6}$	$1.983 \cdot 10^{-6}$	$4.035 \cdot 10^{-7}$	$1.059 \cdot 10^{-5}$	$1.059 \cdot 10^{-5}$	0		
$Hz \to u\bar{u}$	0.009261	0.009261	$3.563 \cdot 10^{-7}$	0.1084	0.1084	0		
$W^+W^-  o Hc\bar{c}$	$7.081 \cdot 10^{-8}$	$7.081 \cdot 10^{-8}$	$2.966 \cdot 10^{-7}$	$5.759 \cdot 10^{-7}$	$5.759 \cdot 10^{-7}$	$-6.945 \cdot 10^{-8}$		
$b\bar{b} \to u\bar{u}$	0.0001223	0.0001223	$3.272 \cdot 10^{-7}$	$2.879 \cdot 10^{-5}$	$2.879 \cdot 10^{-5}$	$-1.389 \cdot 10^{-7}$		
$c\bar{c} \to \mu^+ \mu^-$	0.0002113	0.0002113	$7.099 \cdot 10^{-7}$	$4.841 \cdot 10^{-6}$	$4.841 \cdot 10^{-6}$	$7.023 \cdot 10^{-7}$		
$d\bar{d} \to c\bar{c}$	$6.852 \cdot 10^{-5}$	$6.852 \cdot 10^{-5}$	$4.086 \cdot 10^{-7}$	$1.237 \cdot 10^{-5}$	$1.237 \cdot 10^{-5}$	$-8.085 \cdot 10^{-8}$		
$t\bar{t} \to c\bar{c}$	-0.0001718	-0.0001718	$2.329 \cdot 10^{-7}$	$3.145 \cdot 10^{-5}$	$3.145 \cdot 10^{-5}$	$-3.179 \cdot 10^{-7}$		
$u\bar{d} \to u\bar{d}$	0.0004511	0.0004511	$3.104 \cdot 10^{-7}$	0.0001092	0.0001092	$-1.832 \cdot 10^{-7}$		
$u\bar{u} \to \nu_e \bar{\nu}_e$	$6.496 \cdot 10^{-5}$	$6.496 \cdot 10^{-5}$	$3.541 \cdot 10^{-7}$	$6.323 \cdot 10^{-6}$	$6.323 \cdot 10^{-6}$	0		
$u\bar{u} \to c\bar{c}$	0.0002231	0.0002231	$8.067 \cdot 10^{-7}$	$1.958 \cdot 10^{-5}$	$1.958 \cdot 10^{-5}$	$3.064 \cdot 10^{-7}$		
$u\bar{u} \to u\bar{u}$	-0.0007731	-0.0007731	$2.07\cdot 10^{-7}$	0.0001332	0.0001332	$-3.004 \cdot 10^{-7}$		

### 2.26 cHudIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^- u \bar{d}$	$5.498 \cdot 10^{-25}$	$5.498 \cdot 10^{-25}$	$-7.276 \cdot 10^{-8}$	$2.106 \cdot 10^{-25}$	$2.106 \cdot 10^{-25}$	$-1.425 \cdot 10^{-7}$		
$HW^+ \to \gamma u \bar{d}$	$8.851 \cdot 10^{-28}$	$8.851 \cdot 10^{-28}$	$1.921 \cdot 10^{-7}$	$1.778 \cdot 10^{-27}$	$1.778 \cdot 10^{-27}$	$2.249 \cdot 10^{-7}$		
$HW^+  o u \bar d$	$3.735 \cdot 10^{-23}$	$3.735 \cdot 10^{-23}$	$-5.354 \cdot 10^{-8}$	$4.729 \cdot 10^{-20}$	$4.729 \cdot 10^{-20}$	0		
$W^+W^- \to H c \bar c$	$2.049 \cdot 10^{-18}$	$2.049 \cdot 10^{-18}$	$-2.44 \cdot 10^{-7}$	$9.703 \cdot 10^{-24}$	$9.703 \cdot 10^{-24}$	$1.031 \cdot 10^{-8}$		
$W^+W^-  o H d \bar d$	$-1.726 \cdot 10^{-27}$	$-1.726 \cdot 10^{-27}$	$-1.159 \cdot 10^{-7}$	$5.479 \cdot 10^{-36}$	$5.479 \cdot 10^{-36}$	$1.825 \cdot 10^{-8}$		
$\bar{b}t \to \bar{d}u$	$-4.577 \cdot 10^{-37}$	$1.379 \cdot 10^{-39}$	1.003	$1.942 \cdot 10^{-24}$	$1.942 \cdot 10^{-24}$	$-2.06 \cdot 10^{-7}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$3.877 \cdot 10^{-33}$	$4.434 \cdot 10^{-32}$	-10.44	$2.002 \cdot 10^{-16}$	$2.002 \cdot 10^{-16}$	$-1.998 \cdot 10^{-7}$		
$u\bar{d} \to \mu^+ \nu_\mu$	$1.658 \cdot 10^{-39}$	$1.614 \cdot 10^{-38}$	-8.729	$4.286 \cdot 10^{-25}$	$4.286 \cdot 10^{-25}$	$-2.333 \cdot 10^{-7}$		
$u\bar{d} \to c\bar{s}$	$-7.538 \cdot 10^{-33}$	$-2.728 \cdot 10^{-33}$	0.638	$1.409 \cdot 10^{-16}$	$1.409 \cdot 10^{-16}$	$-2.129 \cdot 10^{-7}$		

 $u\bar{d} \to u\bar{d} \qquad \qquad -1.911 \cdot 10^{-36} \quad -1.561 \cdot 10^{-36} \qquad \qquad 0.1834 \qquad \qquad 2.226 \cdot 10^{-24} \quad 2.226 \cdot 10^{-24} \quad -2.246 \cdot 10^{-7}$ 

### 2.27 cHudRe

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$HH \to W^- u \bar{d}$	$-2.303 \cdot 10^{-24}$	$-2.303 \cdot 10^{-24}$	$7.381 \cdot 10^{-7}$	$1.658 \cdot 10^{-26}$	$1.658 \cdot 10^{-26}$	$-1.206 \cdot 10^{-7}$
$HW^+ \to \gamma u \bar{d}$	$-4.795 \cdot 10^{-25}$	$-4.795 \cdot 10^{-25}$	$2.086 \cdot 10^{-8}$	$1.22 \cdot 10^{-26}$	$1.22 \cdot 10^{-26}$	$1.639 \cdot 10^{-7}$
$HW^+ \to u\bar{d}$	$-2.344 \cdot 10^{-19}$	$-2.344 \cdot 10^{-19}$	0	$4.682 \cdot 10^{-20}$	$4.682 \cdot 10^{-20}$	0
$W^+W^- \to H c \bar c$	$3.77 \cdot 10^{-17}$	$3.77 \cdot 10^{-17}$	$-1.061 \cdot 10^{-7}$	$6.437 \cdot 10^{-24}$	$6.437 \cdot 10^{-24}$	0
$W^+W^- \to H d\bar{d}$	$-6.602 \cdot 10^{-24}$	$-6.602 \cdot 10^{-24}$	$1.969 \cdot 10^{-7}$	$1.246 \cdot 10^{-34}$	$1.246 \cdot 10^{-34}$	0
$\bar{b}t \to \bar{d}u$	$3.298 \cdot 10^{-21}$	$3.298 \cdot 10^{-21}$	0	$9.846 \cdot 10^{-26}$	$9.846 \cdot 10^{-26}$	$-2.234 \cdot 10^{-7}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-4.004 \cdot 10^{-16}$	$-4.004 \cdot 10^{-16}$	$-2.248 \cdot 10^{-7}$	$2.019 \cdot 10^{-16}$	$2.019 \cdot 10^{-16}$	$-1.981 \cdot 10^{-7}$
$u\bar{d} \to \mu^+ \nu_\mu$	$-3.037 \cdot 10^{-24}$	$-3.037 \cdot 10^{-24}$	$-2.305 \cdot 10^{-7}$	$2.448 \cdot 10^{-25}$	$2.448 \cdot 10^{-25}$	$-2.043 \cdot 10^{-7}$
$u\bar{d} \to c\bar{s}$	$-1.249 \cdot 10^{-15}$	$-1.249 \cdot 10^{-15}$	$-2.402 \cdot 10^{-7}$	$4.967 \cdot 10^{-16}$	$4.967 \cdot 10^{-16}$	$-2.215 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	$-3.366 \cdot 10^{-20}$	$-3.366 \cdot 10^{-20}$	0	$6.116 \cdot 10^{-25}$	$6.116 \cdot 10^{-25}$	$-2.289 \cdot 10^{-7}$

### 2.28 cQQ1

		erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$b\bar{b} \to b\bar{b}$	-0.04388	-0.04388	$-2.279 \cdot 10^{-8}$	0.5216	0.5216	0
$b\bar{b} \to t\bar{t}$	-2.142	-2.142	$-1.4 \cdot 10^{-7}$	2.923	2.923	0
$t\bar{t} \to t\bar{t}$	-0.309	-0.309	$-3.237 \cdot 10^{-8}$	3.911	3.911	0

### 2.29 cQQ8

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$b\bar{b}  o b\bar{b}$	-0.01103	-0.01103	0	0.04883	0.04883	0
$b\bar{b} \to t\bar{t}$	0.03212	0.03212	$6.227 \cdot 10^{-8}$	0.02635	0.02635	0
$t\bar{t} \to t\bar{t}$	-0.02693	-0.02693	$-7.428 \cdot 10^{-8}$	0.2022	0.2022	0

# 2.30 cQb1

		rference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$b\bar{b} \to b\bar{b}$	0.01785	0.01785	$3.361 \cdot 10^{-7}$	3.213	3.213	0
$b\bar{b}  o t\bar{t}$	-0.002037	-0.002037	$3.437 \cdot 10^{-7}$	0.02106	0.02106	0

# 2.31 cQb8

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$b\bar{b}  o b\bar{b}$	-6.803	-6.803	0	0.4608	0.4608	0	
$b\bar{b}  o t\bar{t}$	0.02703	0.02703	0	0.002499	0.002499	0	

# 2.32 cQd1

		interf	erence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to d\bar{d}$	-0.0009672	-0.0009672	$3.515 \cdot 10^{-7}$	0.06655	0.06655	0	
$t\bar{t} \to d\bar{d}$	-0.001772	-0.001772	$3.386 \cdot 10^{-7}$	0.004931	0.004931	0	
$t\bar{t} \to s\bar{s}$	-0.008694	-0.008694	$3.566 \cdot 10^{-7}$	0.4996	0.4996	0	

# 2.33 cQd8

		ir	nterference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
$b\bar{b}  o d\bar{d}$	0.3403	0.3403	0	0.1148	0.1148	0		
$t\bar{t} \to d\bar{d}$	0.1484	0.1484	0	0.04344	0.04344	0		
$t\bar{t} \to s\bar{s}$	0.09708	0.09708	0	0.02613	0.02613	0		

### **2.34** cQe

		inter	rference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o \mu^+\mu^-$	-0.00261	-0.00261	$3.449 \cdot 10^{-7}$	0.05984	0.05984	0	
$t\bar{t} \to \tau^+ \tau^-$	-0.008895	-0.008895	$3.598 \cdot 10^{-7}$	0.1713	0.1713	0	

## 2.35 cQj11

		interf	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to d\bar{d}$	0.001104	0.001104	$-9.056 \cdot 10^{-8}$	0.005043	0.005043	0		
$b\bar{b} \to u\bar{u}$	-0.07122	-0.07122	$-1.264 \cdot 10^{-7}$	0.3483	0.3483	0		
$t\bar{t} \to c\bar{c}$	0.007658	0.007658	$-3.918 \cdot 10^{-8}$	0.03124	0.03124	0		
$t\bar{t} \to d\bar{d}$	-0.008667	-0.008667	$-1.731 \cdot 10^{-7}$	0.04663	0.04663	0		
$t\bar{t} \to s\bar{s}$	-0.0002956	-0.0002956	$-1.556 \cdot 10^{-6}$	0.005691	0.005691	0		

# $2.36 \quad \text{cQj18}$

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$b\bar{b} \to d\bar{d}$	0.3069	0.3069	0	0.1036	0.1036	0
$b\bar{b} \to u\bar{u}$	0.5302	0.5302	0	0.1789	0.1789	0
$t\bar{t} \to c\bar{c}$	0.194	0.194	0	0.05884	0.05884	0
$t\bar{t} \to d\bar{d}$	0.1705	0.1705	0	0.05091	0.05091	0
$t\bar{t} \to s\bar{s}$	0.06963	0.06963	0	0.01687	0.01687	0

# 2.37 cQj31

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	0.6367	0.6367	$-1.099 \cdot 10^{-7}$	3.009	3.009	0		
$b\bar{b} \to d\bar{d}$	0.1021	0.1021	$-9.796 \cdot 10^{-8}$	0.4661	0.4661	0		
$b\bar{b} \to u\bar{u}$	0.1646	0.1646	$-1.215 \cdot 10^{-7}$	0.8052	0.8052	0		
$t\bar{t} \to c\bar{c}$	0.05868	0.05868	$-8.521 \cdot 10^{-8}$	0.2648	0.2648	0		
$t\bar{t} \to d\bar{d}$	0.04598	0.04598	$-1.305 \cdot 10^{-7}$	0.2291	0.2291	0		
$t\bar{t} \to s\bar{s}$	0.01465	0.01465	$-2.048 \cdot 10^{-7}$	0.07589	0.07589	0		

# 2.38 cQj38

		interfe	erence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	$1.602 \cdot 10^{-19}$	$1.602 \cdot 10^{-19}$	$-9.302 \cdot 10^{-6}$	0.1665	0.1665	0	
$b\bar{b} \to d\bar{d}$	0.3626	0.3626	0	0.1224	0.1224	0	
$b\bar{b} \to u\bar{u}$	-0.03903	-0.03903	0	0.01317	0.01317	0	
$t\bar{t} \to c\bar{c}$	0.02103	0.02103	0	0.0004629	0.0004629	0	
$t\bar{t} \to d\bar{d}$	-0.626	-0.626	0	0.2046	0.2046	0	
$t\bar{t} \to s\bar{s}$	-0.08835	-0.08835	0	0.02319	0.02319	0	

# 2.39 cQl1

		inter	ference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to \mu^+\mu^-$	0.005087	0.005087	$-1.573 \cdot 10^{-7}$	0.02678	0.02678	0		
$b\bar{b}  o  u_e \bar{ u}_e$	-0.000474	-0.000474	$-6.329 \cdot 10^{-8}$	0.002031	0.002031	0		
$t\bar{t} \to \nu_{\mu}\bar{\nu}_{\mu}$	0.05813	0.05813	$-1.72 \cdot 10^{-7}$	0.3097	0.3097	0		
$t\bar{t} \to \tau^+ \tau^-$	-0.04574	-0.04574	$-6.558 \cdot 10^{-8}$	0.1932	0.1932	0		

### 2.40 cQl3

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to \mu^+\mu^-$	0.005087	0.005087	$-1.573 \cdot 10^{-7}$	0.02678	0.02678	0	
$b\bar{b}  o  u_e \bar{ u}_e$	0.000474	0.000474	$-6.329 \cdot 10^{-8}$	0.002031	0.002031	0	
$b\bar{t} \to e^- \bar{\nu}_e$	0.02717	0.02717	$-7.362 \cdot 10^{-8}$	0.1284	0.1284	0	
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.05813	0.05813	$-1.72 \cdot 10^{-7}$	0.3097	0.3097	0	
$t\bar{t} \to \tau^+ \tau^-$	0.04574	0.04574	$-6.558 \cdot 10^{-8}$	0.1932	0.1932	0	

## 2.41 cQt1

		int	terference	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\mathtt{mod1}  \mathtt{mod2}  1 - \mathtt{mod2}/\mathtt{mod1}$
$b\bar{b} \to t\bar{t}$	-0.0967	-0.0967	$-5.17 \cdot 10^{-8}$	$0.02106  0.02106 \qquad \qquad 0$
$t\bar{t} \to t\bar{t}$	-0.144	-0.144	$2.778 \cdot 10^{-7}$	10.62   10.62   0

## 2.42 cQt8

### 2.43 cQtQb1Im

### 2.44 cQtQb1Re

### 2.45 cQtQb8Im

### 2.46 cQtQb8Re

### 2.47 cQtjd1Im

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $			
$\bar{b}t \to \bar{d}u$	$5.991 \cdot 10^{-14}$	$5.991 \cdot 10^{-14}$	$-6.677 \cdot 10^{-8}$	$1.799 \cdot 10^{-10}  1.799 \cdot 10^{-10} \qquad 0$			
$t\bar{t} \to d\bar{d}$	$-5.848 \cdot 10^{-26}$	$-1.042 \cdot 10^{-25}$	-0.7819	$3.601 \cdot 10^{-10}  3.601 \cdot 10^{-10} \qquad 0$			
$t\bar{t} \to s\bar{s}$	$-6.25 \cdot 10^{-24}$	$-4.252 \cdot 10^{-25}$	0.932	$1.428 \cdot 10^{-7}$ $1.428 \cdot 10^{-7}$ 0			

### 2.48 cQtjd1Re

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-3.575 \cdot 10^{-10}$	$-3.575 \cdot 10^{-10}$	0	$1.799 \cdot 10^{-10}$	$1.799 \cdot 10^{-10}$	0		
$t\bar{t} \to d\bar{d}$	$-7.078 \cdot 10^{-10}$	$-7.078 \cdot 10^{-10}$	0	$3.601 \cdot 10^{-10}$	$3.601 \cdot 10^{-10}$	0		
$t\bar{t} \to s\bar{s}$	$-2.818 \cdot 10^{-7}$	$-2.818 \cdot 10^{-7}$	0	$1.428 \cdot 10^{-7}$	$1.428 \cdot 10^{-7}$	0		

## 2.49 cQtjd8Im

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	$-7.18 \cdot 10^{-28}$	$1.096 \cdot 10^{-32}$	1	$3.997 \cdot 10^{-11}$	$3.997 \cdot 10^{-11}$	0	
$t\bar{t} \to d\bar{d}$	$-7.472 \cdot 10^{-30}$	$2.865 \cdot 10^{-27}$	384.4	$8.001 \cdot 10^{-11}$	$8.001 \cdot 10^{-11}$	0	
$t\bar{t} \to s\bar{s}$	$-6.399 \cdot 10^{-25}$	$-1.378 \cdot 10^{-24}$	-1.154	$3.173 \cdot 10^{-8}$	$3.173 \cdot 10^{-8}$	0	

### 2.50 cQtjd8Re

$\bar{b}t \to \bar{d}u$	$1.629 \cdot 10^{-40}$	$-5.744 \cdot 10^{-27}$	$3.527 \cdot 10^{13}$	$3.997 \cdot 10^{-11}$	$3.997 \cdot 10^{-11}$	0
$t\bar{t} \to d\bar{d}$	$2.068 \cdot 10^{-12}$	$2.068 \cdot 10^{-12}$	0	$8.001 \cdot 10^{-11}$	$8.001 \cdot 10^{-11}$	0
$t\bar{t} \to s\bar{s}$	$5.412 \cdot 10^{-9}$	$5.412 \cdot 10^{-9}$	0	$3.173 \cdot 10^{-8}$	$3.173 \cdot 10^{-8}$	0

## 2.51 cQu1

		ir	nterference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
$b\bar{b} \to u\bar{u}$	0.01665	0.01665	$3.605 \cdot 10^{-7}$	0.5724	0.5724	0		
$t\bar{t} \to c\bar{c}$	0.03051	0.03051	$3.605 \cdot 10^{-7}$	0.9687	0.9687	0		

## 2.52 cQu8

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$b\bar{b} \to u\bar{u}$	0.006955	0.006955	0	0.002343	0.002343	0	
$t\bar{t} \to c\bar{c}$	0.1945	0.1945	0	0.059	0.059	0	

### 2.53 cQujb1Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-6.883 \cdot 10^{-17}$	$-6.883 \cdot 10^{-17}$	$-5.811 \cdot 10^{-8}$	$1.64 \cdot 10^{-11}$	$1.64 \cdot 10^{-11}$	0		
$b\bar{b} \to u\bar{u}$	$-5.936 \cdot 10^{-30}$	$3.6 \cdot 10^{-29}$	7.065	$1.777 \cdot 10^{-11}$	$1.777 \cdot 10^{-11}$	0		

# 2.54 cQujb1Re

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	$-4.109 \cdot 10^{-13}$	$-4.109 \cdot 10^{-13}$	0	$1.64 \cdot 10^{-11}$	$1.64 \cdot 10^{-11}$	0
$b\bar{b} \to u\bar{u}$	$-1.668 \cdot 10^{-13}$	$-1.668 \cdot 10^{-13}$	0	$1.777 \cdot 10^{-11}$	$1.777 \cdot 10^{-11}$	0

# 2.55 cQujb8Im

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-8.62 \cdot 10^{-17}$	$-8.62 \cdot 10^{-17}$	$-5.8 \cdot 10^{-8}$	$3.197 \cdot 10^{-12}$	$3.197 \cdot 10^{-12}$	0		
$b\bar{b} \to u\bar{u}$	$1.988 \cdot 10^{-30}$	$1.9 \cdot 10^{-30}$	0.04408	$1.905 \cdot 10^{-16}$	$1.905 \cdot 10^{-16}$	0		

# 2.56 cQujb8Re

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-5.146 \cdot 10^{-13}$	$-5.146 \cdot 10^{-13}$	$-1.943 \cdot 10^{-8}$	$3.197 \cdot 10^{-12}$	$3.197 \cdot 10^{-12}$	0		
$b\bar{b} \to u\bar{u}$	$-6.783 \cdot 10^{-14}$	$-6.783 \cdot 10^{-14}$	0	$1.905 \cdot 10^{-16}$	$1.905 \cdot 10^{-16}$	0		

## 2.57 cW

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to W^+W^-\gamma$	$1.405 \cdot 10^{-6}$	$1.405 \cdot 10^{-6}$	$-2.847 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.494 \cdot 10^{-7}$
$HW^+  o \gamma t \bar{b}$	$2.467 \cdot 10^{-7}$	$2.467 \cdot 10^{-7}$	$2.026 \cdot 10^{-7}$	$3.423 \cdot 10^{-7}$	$3.423 \cdot 10^{-7}$	$2.629 \cdot 10^{-7}$
$HW^+ \to \gamma u \bar{d}$	$1.135 \cdot 10^{-8}$	$1.135 \cdot 10^{-8}$	$8.81 \cdot 10^{-8}$	$2.761 \cdot 10^{-8}$	$2.761 \cdot 10^{-8}$	$1.449 \cdot 10^{-7}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$2.21\cdot 10^{-8}$	$2.21\cdot 10^{-8}$	$4.524 \cdot 10^{-8}$	$9.261 \cdot 10^{-8}$	$9.261 \cdot 10^{-8}$	$1.08\cdot 10^{-7}$
$W^+W^- \to Hb\bar{b}$	-0.0001191	-0.0001191	$-2.52 \cdot 10^{-7}$	$4.264 \cdot 10^{-5}$	$4.264 \cdot 10^{-5}$	$-2.345 \cdot 10^{-7}$
$W^+W^-  o Hc\bar{c}$	$-2.125 \cdot 10^{-7}$	$-2.125 \cdot 10^{-7}$	$-3.294 \cdot 10^{-7}$	$6.083 \cdot 10^{-7}$	$6.083 \cdot 10^{-7}$	$-2.137 \cdot 10^{-7}$
$W^+W^- \to H d\bar{d}$	$4.163 \cdot 10^{-6}$	$4.163 \cdot 10^{-6}$	$-2.162 \cdot 10^{-7}$	$2.548 \cdot 10^{-6}$	$2.548 \cdot 10^{-6}$	$-1.963 \cdot 10^{-7}$

$W^+W^- \to H t \bar t$	$-1.049 \cdot 10^{-6}$	$-1.049 \cdot 10^{-6}$	$-1.906 \cdot 10^{-7}$	$3.545 \cdot 10^{-6}$	$3.545 \cdot 10^{-6}$	$-8.463 \cdot 10^{-8}$
$W^+W^- \to W^+W^-$	0.1152	0.1152	$1.736 \cdot 10^{-7}$	2.981	2.981	$-1.006 \cdot 10^{-7}$
$W^+W^- \to \gamma\gamma$	0.0005641	0.0005641	$4.432 \cdot 10^{-7}$	0.7204	0.7204	$6.108 \cdot 10^{-7}$
$W^+W^-  o \gamma\gamma\gamma$	$3.005 \cdot 10^{-7}$	$3.005 \cdot 10^{-7}$	$7.986 \cdot 10^{-7}$	$1.841 \cdot 10^{-6}$	$1.841 \cdot 10^{-6}$	$8.689 \cdot 10^{-7}$
$\gamma W^+ \to z W^+$	0.00423	0.00423	$7.565 \cdot 10^{-7}$	1.899	1.899	$1.58 \cdot 10^{-7}$
$zz \to W^+W^-$	-0.05933	-0.05933	$-3.371 \cdot 10^{-8}$	15.23	15.23	$-3.283 \cdot 10^{-7}$

### 2.58 **cWtil**

		interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+W^-\gamma$	$-2.373 \cdot 10^{-7}$	$-2.373 \cdot 10^{-7}$	$2.529 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.339 \cdot 10^{-7}$	$1.494 \cdot 10^{-7}$		
$HW^+ \to \gamma t \bar{b}$	$-9.838 \cdot 10^{-8}$	$-9.838 \cdot 10^{-8}$	$2.338 \cdot 10^{-7}$	$3.423 \cdot 10^{-7}$	$3.423 \cdot 10^{-7}$	$2.629 \cdot 10^{-7}$		
$HW^+ \to \gamma u \bar{d}$	$-8.124 \cdot 10^{-9}$	$-8.124 \cdot 10^{-9}$	$8.616 \cdot 10^{-8}$	$2.761 \cdot 10^{-8}$	$2.761 \cdot 10^{-8}$	$1.449 \cdot 10^{-7}$		
$HW^- \to \gamma e^- \bar{\nu}_e$	$-8.228 \cdot 10^{-10}$	$-8.228 \cdot 10^{-10}$	$1.215 \cdot 10^{-7}$	$9.261 \cdot 10^{-8}$	$9.261 \cdot 10^{-8}$	$1.08 \cdot 10^{-7}$		
$W^+W^-  o Hb\bar{b}$	$8.183 \cdot 10^{-5}$	$8.183 \cdot 10^{-5}$	$-2.811 \cdot 10^{-7}$	$4.265 \cdot 10^{-5}$	$4.265 \cdot 10^{-5}$	$-2.345 \cdot 10^{-7}$		
$W^+W^- \to H c\bar{c}$	$-2.523 \cdot 10^{-7}$	$-2.523 \cdot 10^{-7}$	$-2.774 \cdot 10^{-7}$	$6.097 \cdot 10^{-7}$	$6.097 \cdot 10^{-7}$	$-2.296 \cdot 10^{-7}$		
$W^+W^-  o Hd\bar{d}$	$-1.955 \cdot 10^{-6}$	$-1.955 \cdot 10^{-6}$	$-2.558 \cdot 10^{-7}$	$2.549 \cdot 10^{-6}$	$2.549 \cdot 10^{-6}$	$-1.961 \cdot 10^{-7}$		
$W^+W^- \to H t \bar t$	$-1.433 \cdot 10^{-7}$	$-1.433 \cdot 10^{-7}$	$-1.396 \cdot 10^{-7}$	$3.546 \cdot 10^{-6}$	$3.546 \cdot 10^{-6}$	$-8.461 \cdot 10^{-8}$		
$W^+W^- \to W^+W^-$	$-6.641 \cdot 10^{-13}$	$-1.722 \cdot 10^{-13}$	0.7407	2.982	2.982	$-1.006 \cdot 10^{-7}$		
$W^+W^- \to \gamma\gamma$	$-1.982 \cdot 10^{-17}$	$1.943 \cdot 10^{-17}$	1.98	0.7204	0.7204	$5.969 \cdot 10^{-7}$		
$W^+W^-  o \gamma\gamma\gamma$	$1.024 \cdot 10^{-7}$	$1.024 \cdot 10^{-7}$	$8.791 \cdot 10^{-7}$	$1.839 \cdot 10^{-6}$	$1.839 \cdot 10^{-6}$	$8.698 \cdot 10^{-7}$		
$\gamma W^+ \to z W^+$	$-3.116 \cdot 10^{-15}$	$-1.369 \cdot 10^{-15}$	0.5607	1.899	1.899	$1.58 \cdot 10^{-7}$		
$zz  o W^+W^-$	$1.426 \cdot 10^{-12}$	$-3.58 \cdot 10^{-13}$	1.251	15.23	15.23	$-3.283 \cdot 10^{-7}$		

### 2.59 cbBIm

$HH \to z\bar{b}b$	$1.104 \cdot 10^{-9}$	$1.104 \cdot 10^{-9}$	0	$7.459 \cdot 10^{-8}$	$7.459 \cdot 10^{-8}$	$3.62 \cdot 10^{-7}$
$HW^+  o \gamma t \bar{b}$	$1.369 \cdot 10^{-7}$	$1.369 \cdot 10^{-7}$	$7.303 \cdot 10^{-8}$	$1.003 \cdot 10^{-6}$	$1.003 \cdot 10^{-6}$	$-9.974 \cdot 10^{-8}$
$H\gamma \to b\bar{b}$	$-8.724 \cdot 10^{-20}$	$-8.738 \cdot 10^{-20}$	-0.001593	1.54	1.54	$-1.298 \cdot 10^{-7}$
$Hz \to b\bar{b}$	$-9.266 \cdot 10^{-7}$	$-9.266 \cdot 10^{-7}$	$1.727 \cdot 10^{-7}$	0.4545	0.4545	$3.74 \cdot 10^{-7}$
$W^+W^- \to H b \bar b$	$-1.519 \cdot 10^{-6}$	$-1.519 \cdot 10^{-6}$	$6.585 \cdot 10^{-8}$	$5.326 \cdot 10^{-6}$	$5.326 \cdot 10^{-6}$	$2.065 \cdot 10^{-7}$
$b\bar{b} \to \gamma \gamma$	$5.191 \cdot 10^{-24}$	$7.593 \cdot 10^{-23}$	-13.63	0.002028	0.002028	$9.861 \cdot 10^{-8}$
$b\bar{b}  o \mu^+\mu^-$	$-7.213 \cdot 10^{-21}$	$-3.047 \cdot 10^{-20}$	-3.224	0.002803	0.002803	$3.924 \cdot 10^{-7}$
$b\bar{b}  o  u_e \bar{ u}_e$	$-3.976 \cdot 10^{-21}$	$9.338 \cdot 10^{-21}$	3.349	0.0006493	0.0006493	$3.542 \cdot 10^{-7}$
$b\bar{b}  o b\bar{b}$	$-9.038 \cdot 10^{-19}$	$4 \cdot 10^{-18}$	5.425	0.007773	0.007773	$3.602 \cdot 10^{-7}$
$b\bar{b}  o d\bar{d}$	$1.606 \cdot 10^{-21}$	$1.57 \cdot 10^{-21}$	0.02246	0.001066	0.001066	$3.754 \cdot 10^{-7}$
$b\bar{b}  o t\bar{t}$	$-3.095 \cdot 10^{-20}$	$2.069 \cdot 10^{-20}$	1.668	0.001815	0.001815	$3.306 \cdot 10^{-7}$
$b\bar{b} \to u\bar{u}$	$2.261 \cdot 10^{-22}$	$-1.339 \cdot 10^{-22}$	1.592	$4.863 \cdot 10^{-5}$	$4.863 \cdot 10^{-5}$	$3.496 \cdot 10^{-7}$

## 2.60 cbBRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar b b$	$1.573 \cdot 10^{-7}$	$1.573 \cdot 10^{-7}$	0	$2.361 \cdot 10^{-6}$	$2.361 \cdot 10^{-6}$	$3.813 \cdot 10^{-7}$	
$HW^+ \to \gamma t \bar{b}$	$6.173 \cdot 10^{-8}$	$6.173 \cdot 10^{-8}$	$4.86 \cdot 10^{-8}$	$7.747 \cdot 10^{-7}$	$7.747 \cdot 10^{-7}$	$-1.291 \cdot 10^{-7}$	
$H\gamma  o b\bar{b}$	$-2.214 \cdot 10^{-6}$	$-2.214 \cdot 10^{-6}$	$4.517 \cdot 10^{-8}$	1.913	1.913	$-1.046 \cdot 10^{-7}$	
$Hz  o b\bar{b}$	-0.0006766	-0.0006766	$1.478 \cdot 10^{-8}$	0.02436	0.02436	$3.284 \cdot 10^{-7}$	
$W^+W^-  o Hb\bar{b}$	$1.283 \cdot 10^{-8}$	$1.283 \cdot 10^{-8}$	$7.791 \cdot 10^{-8}$	$1.074 \cdot 10^{-8}$	$1.074 \cdot 10^{-8}$	$3.723 \cdot 10^{-7}$	
$b\bar{b} \to \gamma \gamma$	$1.296 \cdot 10^{-5}$	$1.296 \cdot 10^{-5}$	$3.087 \cdot 10^{-7}$	0.002028	0.002028	$1.479 \cdot 10^{-7}$	
$b\bar{b}  o \mu^+\mu^-$	$5.184 \cdot 10^{-5}$	$5.184 \cdot 10^{-5}$	$2.508 \cdot 10^{-7}$	0.001682	0.001682	$3.567 \cdot 10^{-7}$	
$b\bar{b}  o  u_e \bar{ u}_e$	$-2.134 \cdot 10^{-5}$	$-2.134 \cdot 10^{-5}$	$4.687 \cdot 10^{-8}$	0.000634	0.000634	$3.47 \cdot 10^{-7}$	
$b\bar{b}  o b\bar{b}$	0.0004197	0.0004197	$1.43 \cdot 10^{-7}$	0.004745	0.004745	$3.582 \cdot 10^{-7}$	
$b\bar{b}  o d\bar{d}$	$-9.913 \cdot 10^{-6}$	$-9.913 \cdot 10^{-6}$	$4.035 \cdot 10^{-8}$	0.0008826	0.0008826	$3.626 \cdot 10^{-7}$	
$b\bar{b}  o t\bar{t}$	0.0003862	0.0003862	$1.554 \cdot 10^{-7}$	0.001977	0.001977	$3.54 \cdot 10^{-7}$	
$b\bar{b} \to u\bar{u}$	$3.018 \cdot 10^{-5}$	$3.018 \cdot 10^{-5}$	$2.651 \cdot 10^{-7}$	0.003669	0.003669	$3.543 \cdot 10^{-7}$	

# 2.61 cbGIm

	interference				square		
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$b\bar{b}  o b\bar{b}$	$-1.574 \cdot 10^{-19}$	$-1.073 \cdot 10^{-19}$	0.3182	0.08977	0.08977	0	
$b\bar{b} \to d\bar{d}$	$2.298 \cdot 10^{-25}$	$-2.068 \cdot 10^{-25}$	1.9	0.03227	0.03227	0	
$b\bar{b} \to t\bar{t}$	$-6.723 \cdot 10^{-20}$	$-3.834 \cdot 10^{-19}$	-4.703	0.02276	0.02276	0	
$b\bar{b} \to u\bar{u}$	$-9.191 \cdot 10^{-26}$	$-9.191 \cdot 10^{-26}$	$-1.447 \cdot 10^{-6}$	0.03986	0.03986	0	

### 2.62 cbGRe

		inter	ference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o b\bar{b}$	-0.01606	-0.01606	0	0.1526	0.1526	0	
$b\bar{b} \to d\bar{d}$	-0.004666	-0.004666	0	0.03897	0.03897	0	
$b\bar{b} \to t\bar{t}$	-0.004738	-0.004738	0	0.021	0.021	0	
$b\bar{b} \to u\bar{u}$	-0.004666	-0.004666	0	0.0005339	0.0005339	0	

### 2.63 cbHIm

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH  o Hbar{b}$	$-8.884 \cdot 10^{-11}$	$-8.884 \cdot 10^{-11}$	0	$3.073 \cdot 10^{-6}$	$3.073 \cdot 10^{-6}$	0
$HH  o W^+ \bar t b$	$1.559 \cdot 10^{-8}$	$1.559 \cdot 10^{-8}$	$1.09 \cdot 10^{-6}$	$1.421 \cdot 10^{-5}$	$1.421 \cdot 10^{-5}$	$-7.036 \cdot 10^{-8}$
$HH  o z \bar{b} b$	$-9.742 \cdot 10^{-9}$	$-9.742 \cdot 10^{-9}$	$5.133 \cdot 10^{-8}$	$9.024 \cdot 10^{-6}$	$9.024 \cdot 10^{-6}$	$-2.77 \cdot 10^{-7}$
$HW^+ \to \gamma t \bar{b}$	$-4.341 \cdot 10^{-9}$	$-4.341 \cdot 10^{-9}$	$2.303 \cdot 10^{-7}$	$1.452 \cdot 10^{-7}$	$1.452 \cdot 10^{-7}$	$2.755 \cdot 10^{-7}$
$HW^- \to \bar{t}b$	$-2.052 \cdot 10^{-6}$	$-2.052 \cdot 10^{-6}$	$2.437 \cdot 10^{-7}$	0.06295	0.06295	0
$H\gamma \to b\bar{b}$	$2.711 \cdot 10^{-20}$	$-6.716 \cdot 10^{-26}$	1	0.0005306	0.0005306	$2.639 \cdot 10^{-7}$
$Hz  o b\bar{b}$	$3.538 \cdot 10^{-9}$	$3.538 \cdot 10^{-9}$	$-1.413 \cdot 10^{-7}$	0.0618	0.0618	0

$W^+W^- \to H b \bar b$	$-5.908 \cdot 10^{-9}$	$-5.908 \cdot 10^{-9}$	$-6.77 \cdot 10^{-8}$	$1.44 \cdot 10^{-7}$	$1.44 \cdot 10^{-7}$	0
$W^+W^-  o H t ar t$	$1.055 \cdot 10^{-7}$	$1.055 \cdot 10^{-7}$	$-9.477 \cdot 10^{-7}$	$7.41 \cdot 10^{-9}$	$7.41\cdot 10^{-9}$	$-4.049 \cdot 10^{-8}$
$b\bar{b} \to \mu^+ \mu^-$	$1.473 \cdot 10^{-29}$	$-1.416 \cdot 10^{-28}$	10.62	$1.164 \cdot 10^{-10}$	$1.164 \cdot 10^{-10}$	0
$b\bar{b}  o b\bar{b}$	$-1.261 \cdot 10^{-19}$	$-1.262 \cdot 10^{-19}$	-0.00068	$2.824 \cdot 10^{-6}$	$2.824 \cdot 10^{-6}$	0
$b\bar{b} \to d\bar{d}$	$-2.321 \cdot 10^{-29}$	$-2.301 \cdot 10^{-29}$	0.008498	$6.823 \cdot 10^{-13}$	$6.823 \cdot 10^{-13}$	0
$b\bar{b}  o t\bar{t}$	$-2.612 \cdot 10^{-21}$	$-2.306 \cdot 10^{-21}$	0.1171	0.0008223	0.0008223	0
$b\bar{b} \to u\bar{u}$	$-3.232 \cdot 10^{-31}$	$6.93 \cdot 10^{-31}$	3.144	$1.46 \cdot 10^{-13}$	$1.46 \cdot 10^{-13}$	0

### 2.64 cbHRe

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH  o Hbar{b}$	$-1.782 \cdot 10^{-7}$	$-1.782 \cdot 10^{-7}$	0	$4.872 \cdot 10^{-6}$	$4.872 \cdot 10^{-6}$	0	
$HH \to W^+ \bar{t} b$	$-3.602 \cdot 10^{-7}$	$-3.602 \cdot 10^{-7}$	$-5.552 \cdot 10^{-8}$	$2.386 \cdot 10^{-6}$	$2.386 \cdot 10^{-6}$	$-4.19 \cdot 10^{-8}$	
$HH \to z\bar{b}b$	$2.377 \cdot 10^{-8}$	$2.377 \cdot 10^{-8}$	$2.944 \cdot 10^{-7}$	$8.022 \cdot 10^{-7}$	$8.022 \cdot 10^{-7}$	$-1.371 \cdot 10^{-7}$	
$HW^+  o \gamma t \bar{b}$	$-1.916 \cdot 10^{-10}$	$-1.916 \cdot 10^{-10}$	$2.087 \cdot 10^{-7}$	$4 \cdot 10^{-10}$	$4 \cdot 10^{-10}$	$2.25\cdot 10^{-7}$	
$HW^- \to \bar{t}b$	0.004612	0.004612	0	0.06294	0.06294	0	
$H\gamma \to b\bar{b}$	-0.0005904	-0.0005904	$2.541 \cdot 10^{-7}$	0.0007454	0.0007454	$2.415 \cdot 10^{-7}$	
$Hz  o b\bar{b}$	$-4.445 \cdot 10^{-5}$	$-4.445 \cdot 10^{-5}$	$-2.947 \cdot 10^{-6}$	0.0612	0.0612	0	
$W^+W^-  o Hbar{b}$	$-7.565 \cdot 10^{-9}$	$-7.565 \cdot 10^{-9}$	$-3.965 \cdot 10^{-8}$	$4.598 \cdot 10^{-8}$	$4.598 \cdot 10^{-8}$	$4.35 \cdot 10^{-8}$	
$W^+W^-  o Ht\bar{t}$	$5.23 \cdot 10^{-8}$	$5.23 \cdot 10^{-8}$	$-9.559 \cdot 10^{-8}$	$5.757 \cdot 10^{-11}$	$5.757 \cdot 10^{-11}$	$-1.737 \cdot 10^{-8}$	
$b\bar{b} \to \mu^+ \mu^-$	$-9.262 \cdot 10^{-11}$	$-9.262 \cdot 10^{-11}$	0	$1.164 \cdot 10^{-10}$	$1.164 \cdot 10^{-10}$	0	
b ar b  o b ar b	0.003948	0.003948	0	$4.926 \cdot 10^{-6}$	$4.926 \cdot 10^{-6}$	0	
$b\bar{b} \to d\bar{d}$	$-5.432 \cdot 10^{-13}$	$-5.432 \cdot 10^{-13}$	0	$6.822 \cdot 10^{-13}$	$6.822 \cdot 10^{-13}$	0	
$b\bar{b}  o t\bar{t}$	-0.0004167	-0.0004167	0	0.0008222	0.0008222	0	
$b\bar{b} \to u\bar{u}$	$-1.15 \cdot 10^{-13}$	$-1.15 \cdot 10^{-13}$	0	$1.46 \cdot 10^{-13}$	$1.46 \cdot 10^{-13}$	0	

### 2.65 cbWIm

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$HH \to W^+ \bar{t} b$	$-9.432 \cdot 10^{-8}$	$-9.432 \cdot 10^{-8}$	$-1.272 \cdot 10^{-7}$	$1.612 \cdot 10^{-5}$	$1.612 \cdot 10^{-5}$	0
$HH \to z\bar{b}b$	$-8.909 \cdot 10^{-8}$	$-8.909 \cdot 10^{-8}$	$-2.245 \cdot 10^{-7}$	$1.674 \cdot 10^{-6}$	$1.674 \cdot 10^{-6}$	$-1.195 \cdot 10^{-7}$
$HW^+ \to \gamma t \bar{b}$	$9.673 \cdot 10^{-9}$	$9.673 \cdot 10^{-9}$	$3.102 \cdot 10^{-7}$	$5.226 \cdot 10^{-7}$	$5.226 \cdot 10^{-7}$	$3.253 \cdot 10^{-7}$
$HW^- \to \bar{t}b$	$-2.95 \cdot 10^{-6}$	$-2.95 \cdot 10^{-6}$	$-1.017 \cdot 10^{-7}$	1.363	1.363	0
$H\gamma  o b\bar{b}$	$-6.006 \cdot 10^{-21}$	$-6.099 \cdot 10^{-21}$	-0.01542	0.4822	0.4822	$3.525 \cdot 10^{-7}$
$Hz \to b\bar{b}$	$4.161 \cdot 10^{-6}$	$4.161 \cdot 10^{-6}$	$-7.209 \cdot 10^{-8}$	1.009	1.009	$-9.912 \cdot 10^{-8}$
$W^+W^- \to H b \bar b$	$-3.205 \cdot 10^{-7}$	$-3.205 \cdot 10^{-7}$	$-2.184 \cdot 10^{-7}$	$2.56 \cdot 10^{-6}$	$2.56 \cdot 10^{-6}$	$-1.563 \cdot 10^{-7}$
$W^+W^-  o H t \bar t$	$-4.945 \cdot 10^{-9}$	$-4.945 \cdot 10^{-9}$	$-8.089 \cdot 10^{-8}$	$2.044 \cdot 10^{-8}$	$2.044 \cdot 10^{-8}$	$4.893 \cdot 10^{-8}$
$\bar{b}t \to \bar{d}u$	$-3.855 \cdot 10^{-21}$	$-2.599 \cdot 10^{-21}$	0.3259	0.002601	0.002601	$-1.154 \cdot 10^{-7}$
$b\bar{b} \to \gamma \gamma$	$1.799 \cdot 10^{-21}$	$2.174 \cdot 10^{-21}$	-0.2088	0.0006179	0.0006179	$5.988 \cdot 10^{-7}$
$b\bar{b} \to \mu^+ \mu^-$	$-2.455 \cdot 10^{-20}$	$-1.229 \cdot 10^{-21}$	0.95	0.001741	0.001741	$-1.149 \cdot 10^{-7}$
$b\bar{b}  o  u_e \bar{ u}_e$	$1.767 \cdot 10^{-21}$	$1.723 \cdot 10^{-21}$	0.02481	0.0006216	0.0006216	$-1.126 \cdot 10^{-7}$
$b\bar{b}  o b\bar{b}$	$2.305 \cdot 10^{-18}$	$8.381 \cdot 10^{-19}$	0.6364	0.2343	0.2343	$-1.281 \cdot 10^{-7}$
$b\bar{b} \to d\bar{d}$	$3.342 \cdot 10^{-21}$	$3.312 \cdot 10^{-21}$	0.009185	0.001705	0.001705	$-5.864 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	$7.055 \cdot 10^{-18}$	$1.392 \cdot 10^{-18}$	0.8027	0.9812	0.9812	$-9.173 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$1.755 \cdot 10^{-19}$	$3.731 \cdot 10^{-19}$	-1.126	0.006237	0.006237	$-1.122 \cdot 10^{-7}$
$b\bar{t} \to e^-\bar{\nu}_e$	$5.606 \cdot 10^{-20}$	$5.255 \cdot 10^{-20}$	0.06262	0.003867	0.003867	$-1.293 \cdot 10^{-7}$

### 2.66 cbWRe

		interfer	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to W^+ \bar{t} b$	$-3.094 \cdot 10^{-7}$	$-3.094 \cdot 10^{-7}$	$-3.232 \cdot 10^{-8}$	$1.612 \cdot 10^{-5}$	$1.612 \cdot 10^{-5}$	0	
$HH \to z\bar{b}b$	$-4.063 \cdot 10^{-8}$	$-4.063 \cdot 10^{-8}$	$-1.969 \cdot 10^{-7}$	$1.683 \cdot 10^{-6}$	$1.683 \cdot 10^{-6}$	$-5.941 \cdot 10^{-8}$	
$HW^+  o \gamma t \bar{b}$	$-2.731 \cdot 10^{-8}$	$-2.731 \cdot 10^{-8}$	$4.395 \cdot 10^{-7}$	$5.226 \cdot 10^{-7}$	$5.226 \cdot 10^{-7}$	$3.253 \cdot 10^{-7}$	
$HW^-  o \bar{t}b$	-0.007802	-0.007802	$-6.409 \cdot 10^{-8}$	1.363	1.363	0	
$H\gamma \to b\bar{b}$	$1.477 \cdot 10^{-6}$	$1.477 \cdot 10^{-6}$	$2.708 \cdot 10^{-7}$	0.4822	0.4822	$3.525 \cdot 10^{-7}$	

$Hz \to b\bar{b}$	-0.001269	-0.001269	$-2.363 \cdot 10^{-7}$	1.009	1.009	$-9.912 \cdot 10^{-8}$
$W^+W^- \to H b \bar b$	$-2.454 \cdot 10^{-7}$	$-2.454 \cdot 10^{-7}$	$-4.889 \cdot 10^{-7}$	$2.553 \cdot 10^{-6}$	$2.553 \cdot 10^{-6}$	$-1.567 \cdot 10^{-7}$
$W^+W^-  o Ht\bar{t}$	$-1.484 \cdot 10^{-7}$	$-1.484 \cdot 10^{-7}$	$-6.737 \cdot 10^{-8}$	$2.018 \cdot 10^{-8}$	$2.018 \cdot 10^{-8}$	0
$\bar{b}t \to \bar{d}u$	$-2.071 \cdot 10^{-5}$	$-2.071 \cdot 10^{-5}$	$-1.449 \cdot 10^{-7}$	0.002601	0.002601	$-1.154 \cdot 10^{-7}$
$b\bar{b}  o \gamma \gamma$	$-3.695 \cdot 10^{-5}$	$-3.695 \cdot 10^{-5}$	$5.684 \cdot 10^{-7}$	0.0006182	0.0006182	$6.147 \cdot 10^{-7}$
$b\bar{b}  o \mu^+\mu^-$	$-2.665 \cdot 10^{-5}$	$-2.665 \cdot 10^{-5}$	$-3.752 \cdot 10^{-8}$	0.001742	0.001742	$-1.148 \cdot 10^{-7}$
$b\bar{b}  o  u_e \bar{ u}_e$	$6.816 \cdot 10^{-6}$	$6.816 \cdot 10^{-6}$	$6.603 \cdot 10^{-7}$	0.0006219	0.0006219	$-1.126 \cdot 10^{-7}$
$b\bar{b}  o b\bar{b}$	0.01223	0.01223	$-8.18 \cdot 10^{-8}$	0.2343	0.2343	$-1.281 \cdot 10^{-7}$
$b\bar{b}  o d\bar{d}$	$-1.957 \cdot 10^{-6}$	$-1.957 \cdot 10^{-6}$	$-3.116 \cdot 10^{-6}$	0.001706	0.001706	$-1.172 \cdot 10^{-7}$
$b\bar{b}  o t\bar{t}$	-0.01781	-0.01781	0	0.9811	0.9811	$-9.173 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	-0.0001199	-0.0001199	$-1.667 \cdot 10^{-7}$	0.006238	0.006238	$-1.122 \cdot 10^{-7}$
$b\bar{t} \to e^- \bar{\nu}_e$	$-4.3 \cdot 10^{-5}$	$-4.3 \cdot 10^{-5}$	$-1.628 \cdot 10^{-7}$	0.003867	0.003867	$-1.293 \cdot 10^{-7}$

### 2.67 cbb

		terference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$b\bar{b}  o b\bar{b}$	-0.1326	-0.1326	0	1.103	1.103	0

### $2.68 \quad \text{cbd1}$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to d\bar{d}$	0.009503	0.009503	$3.473 \cdot 10^{-7}$	0.3331	0.3331	0	

### 2.69 cbd8

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$b\bar{b} \to d\bar{d}$	0.003332	0.003332	0	0.001121	0.001121	0

### 2.70 cbe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$b\bar{b} \to \mu^+\mu^-$	0.0171	0.0171	$3.509 \cdot 10^{-7}$	0.1998	0.1998	0	

### 2.71 cbj1

		erence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$b\bar{b} \to d\bar{d}$	-0.00146	-0.00146	$3.425 \cdot 10^{-7}$	0.1007	0.1007	0
$b\bar{b} \to u\bar{u}$	-0.0001511	-0.0001511	$3.309 \cdot 10^{-7}$	0.01054	0.01054	0

### 2.72 cbj8

		int	erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to d\bar{d}$	0.005523	0.005523	0	0.00186	0.00186	0	
$b\bar{b} \to u\bar{u}$	0.01369	0.01369	0	0.004617	0.004617	0	

### 2.73 cbl

 $b\bar{b} \to \nu_e \bar{\nu}_e$  0.01082 0.01082 2.773 · 10<sup>-7</sup> 0.2512 0.2512 0

#### 2.74 cbu1

#### 2.75 cbu8

#### 2.76 cdBIm

interference square 1 - mod2/mod11 - mod2/mod1mod1 mod2 mod1 mod2  $HH \rightarrow zd\bar{d}$  $-5.687 \cdot 10^{-16}$  $-5.687 \cdot 10^{-16}$  $3.626 \cdot 10^{-7}$  $1.931 \cdot 10^{-16}$  $1.931 \cdot 10^{-16}$ 0  $HW^+ \rightarrow \gamma u \bar{d}$  $-9.306 \cdot 10^{-16}$  $-9.306 \cdot 10^{-16}$  $-2.116 \cdot 10^{-7}$  $-9.671 \cdot 10^{-8}$  $2.363 \cdot 10^{-16}$  $2.363 \cdot 10^{-16}$  $H\gamma \to d\bar{d}$  $-1.987 \cdot 10^{-26}$  $-1.987 \cdot 10^{-26}$  $5.034 \cdot 10^{-8}$  $9.664 \cdot 10^{-10}$  $9.664 \cdot 10^{-10}$  $-1.035 \cdot 10^{-7}$  $7.673 \cdot 10^{-12}$  $7.673 \cdot 10^{-12}$  $1.694 \cdot 10^{-7}$  $3.735 \cdot 10^{-7}$  $1.339 \cdot 10^{-7}$  $1.339 \cdot 10^{-7}$  $Hz \rightarrow s\bar{s}$  $W^+W^- \to Hd\bar{d}$  $5.078 \cdot 10^{-15}$  $5.078 \cdot 10^{-15}$  $-7.877 \cdot 10^{-8}$  $1.656 \cdot 10^{-15}$  $1.656 \cdot 10^{-15}$  $1.811 \cdot 10^{-7}$  $-1.588 \cdot 10^{-29}$  $b\bar{b} \to d\bar{d}$  $-1.057 \cdot 10^{-31}$ 0.9933  $6.805 \cdot 10^{-13}$  $6.805 \cdot 10^{-13}$  $3.527 \cdot 10^{-7}$  $d\bar{d} \rightarrow c\bar{c}$  $-5.872 \cdot 10^{-27}$  $-4.202 \cdot 10^{-27}$  $2.642 \cdot 10^{-12}$  $3.785 \cdot 10^{-7}$ 0.2845  $2.642 \cdot 10^{-12}$  $-2.579 \cdot 10^{-27}$  $-2.727 \cdot 10^{-27}$  $1.895 \cdot 10^{-12}$  $d\bar{d} \rightarrow e^+e^-$ -0.0574 $1.895 \cdot 10^{-12}$  $3.694 \cdot 10^{-7}$  $-1.569 \cdot 10^{-26}$  $d\bar{d} \to s\bar{s}$  $-3.264 \cdot 10^{-26}$ 0.5191  $2.761 \cdot 10^{-10}$  $2.761 \cdot 10^{-10}$  $3.622 \cdot 10^{-7}$  $9.013 \cdot 10^{-12}$  $-4.089 \cdot 10^{-26}$  $-1.631 \cdot 10^{-26}$  $9.013 \cdot 10^{-12}$  $3.55 \cdot 10^{-7}$  $s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$ 0.6011

$s\bar{s} \to s\bar{s}$	$-6.407 \cdot 10^{-24}$ $5.805 \cdot 10^{-25}$	1.091	$1.35 \cdot 10^{-9}$	$1.35 \cdot 10^{-9}$	$2.963 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	$7.724 \cdot 10^{-28} \qquad -2.135 \cdot 10^{-26}$	28.65	$2.705 \cdot 10^{-12}$	$2.705 \cdot 10^{-12}$	$3.697 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	$-2.927 \cdot 10^{-25}$ $5.393 \cdot 10^{-24}$	19.42	$8.379 \cdot 10^{-10}$	$8.379 \cdot 10^{-10}$	$3.58 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	$-9.521 \cdot 10^{-25}$ $-9.544 \cdot 10^{-25}$	-0.002455	$3.001 \cdot 10^{-11}$	$3.001 \cdot 10^{-11}$	$3.332 \cdot 10^{-7}$

#### 2.77 cdBRe

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z d\bar{d}$	$-1.623 \cdot 10^{-15}$	$-1.623 \cdot 10^{-15}$	$6.161 \cdot 10^{-8}$	$4.297 \cdot 10^{-16}$	$4.297 \cdot 10^{-16}$	$3.491 \cdot 10^{-7}$		
$HW^+ \to \gamma u \bar{d}$	$-1.016 \cdot 10^{-16}$	$-1.016 \cdot 10^{-16}$	$-9.845 \cdot 10^{-8}$	$1.618 \cdot 10^{-16}$	$1.618 \cdot 10^{-16}$	$-1.855 \cdot 10^{-7}$		
$H\gamma \to d\bar{d}$	$-9.021 \cdot 10^{-20}$	$-9.021 \cdot 10^{-20}$	$7.76 \cdot 10^{-8}$	$1.285 \cdot 10^{-9}$	$1.285 \cdot 10^{-9}$	$-1.556 \cdot 10^{-7}$		
$Hz \to s\bar{s}$	$-8.345 \cdot 10^{-9}$	$-8.345 \cdot 10^{-9}$	$1.198 \cdot 10^{-8}$	$1.376 \cdot 10^{-7}$	$1.376 \cdot 10^{-7}$	$3.634 \cdot 10^{-7}$		
$W^+W^-  o Hd\bar{d}$	$1.201 \cdot 10^{-16}$	$1.201 \cdot 10^{-16}$	0	$1.399 \cdot 10^{-18}$	$1.399 \cdot 10^{-18}$	$7.15 \cdot 10^{-8}$		
$b\bar{b} \to d\bar{d}$	$-5.312 \cdot 10^{-13}$	$-5.312 \cdot 10^{-13}$	$-3.765 \cdot 10^{-8}$	$7.667 \cdot 10^{-13}$	$7.667 \cdot 10^{-13}$	$3.652 \cdot 10^{-7}$		
$d\bar{d} \to c\bar{c}$	$1.075 \cdot 10^{-12}$	$1.075 \cdot 10^{-12}$	$2.791 \cdot 10^{-7}$	$2.574 \cdot 10^{-12}$	$2.574 \cdot 10^{-12}$	$3.496 \cdot 10^{-7}$		
$d\bar{d} \to e^+e^-$	$1.299 \cdot 10^{-12}$	$1.299 \cdot 10^{-12}$	$2.309 \cdot 10^{-7}$	$1.854 \cdot 10^{-12}$	$1.854 \cdot 10^{-12}$	$3.236 \cdot 10^{-7}$		
$d\bar{d} \to s\bar{s}$	$-1.879 \cdot 10^{-10}$	$-1.879 \cdot 10^{-10}$	0	$3.122 \cdot 10^{-10}$	$3.122 \cdot 10^{-10}$	$3.523 \cdot 10^{-7}$		
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-1.419 \cdot 10^{-10}$	$-1.419 \cdot 10^{-10}$	$-7.046 \cdot 10^{-8}$	$1.806 \cdot 10^{-10}$	$1.806 \cdot 10^{-10}$	$3.875 \cdot 10^{-7}$		
$s\bar{s} \to s\bar{s}$	$3.392 \cdot 10^{-9}$	$3.392 \cdot 10^{-9}$	$1.474 \cdot 10^{-7}$	$2.961 \cdot 10^{-9}$	$2.961 \cdot 10^{-9}$	$3.377 \cdot 10^{-7}$		
$t\bar{t} \to d\bar{d}$	$-3.616 \cdot 10^{-12}$	$-3.616 \cdot 10^{-12}$	$1.383 \cdot 10^{-7}$	$2.282 \cdot 10^{-12}$	$2.282 \cdot 10^{-12}$	$3.506 \cdot 10^{-7}$		
$t\bar{t} \to s\bar{s}$	$3.082 \cdot 10^{-9}$	$3.082 \cdot 10^{-9}$	$1.623 \cdot 10^{-7}$	$7.281 \cdot 10^{-10}$	$7.281 \cdot 10^{-10}$	$3.571 \cdot 10^{-7}$		
$u\bar{d} \to u\bar{d}$	$-9.084 \cdot 10^{-12}$	$-9.084 \cdot 10^{-12}$	$3.303 \cdot 10^{-7}$	$3.099 \cdot 10^{-11}$	$3.099 \cdot 10^{-11}$	$3.549 \cdot 10^{-7}$		

#### 2.78 cdGIm

$d\bar{d} \to c\bar{c}$	$1.123 \cdot 10^{-34}$	$8.132 \cdot 10^{-34}$	-6.238	$2.797 \cdot 10^{-11}$	$2.797 \cdot 10^{-11}$	0
$d\bar{d} \to s\bar{s}$	$-9.54 \cdot 10^{-25}$	$-1.027 \cdot 10^{-24}$	-0.0763	$1.142 \cdot 10^{-8}$	$1.142 \cdot 10^{-8}$	0
$s\bar{s} \to s\bar{s}$	$-8.815 \cdot 10^{-25}$	$-4.765 \cdot 10^{-24}$	-4.406	$6.068 \cdot 10^{-8}$	$6.068 \cdot 10^{-8}$	0
$t\bar{t} \to d\bar{d}$	$4.601 \cdot 10^{-27}$	$4.516 \cdot 10^{-27}$	0.01859	$2.571 \cdot 10^{-11}$	$2.571 \cdot 10^{-11}$	0
$t\bar{t} \to s\bar{s}$	$-7.432 \cdot 10^{-26}$	$-1.133 \cdot 10^{-25}$	-0.5241	$8.276 \cdot 10^{-9}$	$8.276 \cdot 10^{-9}$	0
$u\bar{d} \to u\bar{d}$	$-1.209 \cdot 10^{-26}$	$-1.799 \cdot 10^{-26}$	-0.4875	$3.393 \cdot 10^{-10}$	$3.393 \cdot 10^{-10}$	0

#### 2.79 cdGRe

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to d\bar{d}$	$-1.398 \cdot 10^{-10}$	$-1.398 \cdot 10^{-10}$	0	$2.322 \cdot 10^{-11}$	$2.322 \cdot 10^{-11}$	0	
$d\bar{d} \to c\bar{c}$	$-1.398 \cdot 10^{-10}$	$-1.398 \cdot 10^{-10}$	0	$2.001 \cdot 10^{-11}$	$2.001 \cdot 10^{-11}$	0	
$d\bar{d} \to s\bar{s}$	$-5.56 \cdot 10^{-8}$	$-5.56 \cdot 10^{-8}$	0	$6.353 \cdot 10^{-9}$	$6.353 \cdot 10^{-9}$	0	
$s\bar{s} \to s\bar{s}$	$-2.248 \cdot 10^{-7}$	$-2.248 \cdot 10^{-7}$	0	$1.195 \cdot 10^{-7}$	$1.195 \cdot 10^{-7}$	0	
$t\bar{t} \to d\bar{d}$	$-1.567 \cdot 10^{-10}$	$-1.567 \cdot 10^{-10}$	0	$2.985 \cdot 10^{-11}$	$2.985 \cdot 10^{-11}$	0	
$t\bar{t} \to s\bar{s}$	$-6.213 \cdot 10^{-8}$	$-6.213 \cdot 10^{-8}$	0	$1.073 \cdot 10^{-8}$	$1.073 \cdot 10^{-8}$	0	
$u\bar{d} \to u\bar{d}$	$-1.499 \cdot 10^{-10}$	$-1.499 \cdot 10^{-10}$	0	$1.175 \cdot 10^{-10}$	$1.175 \cdot 10^{-10}$	0	

### 2.80 cdHIm

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to Hs\bar{s}$	$9.625 \cdot 10^{-18}$	$9.625 \cdot 10^{-18}$	0	$7.832 \cdot 10^{-13}$	$7.832 \cdot 10^{-13}$	0		
$HH \to W^- u \bar{d}$	$4.584 \cdot 10^{-16}$	$4.584 \cdot 10^{-16}$	$-1.309 \cdot 10^{-7}$	$4.464 \cdot 10^{-15}$	$4.464 \cdot 10^{-15}$	$-6.721 \cdot 10^{-8}$		
$HH \to z d\bar{d}$	$1.256 \cdot 10^{-15}$	$1.256 \cdot 10^{-15}$	0	$1.956 \cdot 10^{-15}$	$1.956 \cdot 10^{-15}$	$-1.022 \cdot 10^{-7}$		
$HW^+ \to \gamma u \bar{d}$	$3.74 \cdot 10^{-17}$	$3.74 \cdot 10^{-17}$	$1.872 \cdot 10^{-7}$	$2.659 \cdot 10^{-16}$	$2.659 \cdot 10^{-16}$	$2.257 \cdot 10^{-7}$		
$HW^+ \to u\bar{d}$	$-2.395 \cdot 10^{-13}$	$-2.395 \cdot 10^{-13}$	$-8.352 \cdot 10^{-8}$	$4.423 \cdot 10^{-11}$	$4.423 \cdot 10^{-11}$	0		
$H\gamma \to d\bar{d}$	$4.039 \cdot 10^{-28}$	$-8.078 \cdot 10^{-28}$	3	$3.503 \cdot 10^{-13}$	$3.503 \cdot 10^{-13}$	$2.569 \cdot 10^{-7}$		

$Hz \to s\bar{s}$	$-1.317 \cdot 10^{-13}$	$-1.317 \cdot 10^{-13}$	$-1.518 \cdot 10^{-7}$	$1.835 \cdot 10^{-8}$	$1.835 \cdot 10^{-8}$	$-5.449 \cdot 10^{-8}$
$W^+W^-  o Hc\bar{c}$	$-3.375 \cdot 10^{-14}$	$-3.375 \cdot 10^{-14}$	$4.74\cdot 10^{-7}$	$2.654 \cdot 10^{-20}$	$2.654 \cdot 10^{-20}$	$-7.536 \cdot 10^{-8}$
$W^+W^- \to H d\bar{d}$	$3.076 \cdot 10^{-16}$	$3.076 \cdot 10^{-16}$	$-2.926 \cdot 10^{-7}$	$1.858 \cdot 10^{-17}$	$1.858 \cdot 10^{-17}$	$-2.691 \cdot 10^{-7}$
$b\bar{b}  o d\bar{d}$	$3.565 \cdot 10^{-30}$	$3.98 \cdot 10^{-30}$	-0.1164	$3.933 \cdot 10^{-16}$	$3.933 \cdot 10^{-16}$	0
$d\bar{d} \to c\bar{c}$	$8.097 \cdot 10^{-32}$	$2.979 \cdot 10^{-32}$	0.6321	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
$d\bar{d} \rightarrow e^+e^-$	$7.756 \cdot 10^{-40}$	$8.062 \cdot 10^{-40}$	-0.03947	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
$d\bar{d} \to s\bar{s}$	$-2.408 \cdot 10^{-34}$	$-1.485 \cdot 10^{-34}$	0.3832	$3.893 \cdot 10^{-19}$	$3.893 \cdot 10^{-19}$	0
$s\bar{s} \to s\bar{s}$	$-5.481 \cdot 10^{-25}$	$-5.481 \cdot 10^{-25}$	$9.853 \cdot 10^{-7}$	$3.95 \cdot 10^{-16}$	$3.95 \cdot 10^{-16}$	0
$t\bar{t} \to d\bar{d}$	$-2.255 \cdot 10^{-27}$	$-1.32 \cdot 10^{-27}$	0.4146	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	0
$t\bar{t} \to s\bar{s}$	$4.897 \cdot 10^{-25}$	$6.8 \cdot 10^{-25}$	-0.3886	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0
$u\bar{d} \to u\bar{d}$	$1.619 \cdot 10^{-36}$	$1.72 \cdot 10^{-36}$	-0.06274	$9.465 \cdot 10^{-23}$	$9.465 \cdot 10^{-23}$	0

### 2.81 cdHRe

		ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to Hs\bar{s}$	$-2.379 \cdot 10^{-12}$	$-2.379 \cdot 10^{-12}$	0	$1.742 \cdot 10^{-12}$	$1.742 \cdot 10^{-12}$	0	
$HH \to W^- u \bar{d}$	$-3.389 \cdot 10^{-15}$	$-3.389 \cdot 10^{-15}$	$-8.851 \cdot 10^{-8}$	$6.286 \cdot 10^{-15}$	$6.286 \cdot 10^{-15}$	$-1.114 \cdot 10^{-7}$	
$HH \to z d\bar{d}$	$-3.046 \cdot 10^{-15}$	$-3.046 \cdot 10^{-15}$	$-1.313 \cdot 10^{-7}$	$3.367 \cdot 10^{-15}$	$3.367 \cdot 10^{-15}$	$-8.91 \cdot 10^{-8}$	
$HW^+  o \gamma u \bar{d}$	$2.846 \cdot 10^{-17}$	$2.846 \cdot 10^{-17}$	$1.933 \cdot 10^{-6}$	$4.827 \cdot 10^{-16}$	$4.827 \cdot 10^{-16}$	$1.657 \cdot 10^{-7}$	
$HW^+ \to u\bar{d}$	$-6.375 \cdot 10^{-12}$	$-6.375 \cdot 10^{-12}$	$-1.098 \cdot 10^{-7}$	$4.398 \cdot 10^{-11}$	$4.398 \cdot 10^{-11}$	0	
$H\gamma \to d\bar{d}$	$-1.142 \cdot 10^{-11}$	$-1.142 \cdot 10^{-11}$	$1.751 \cdot 10^{-7}$	$3.463 \cdot 10^{-13}$	$3.463 \cdot 10^{-13}$	$2.31\cdot 10^{-7}$	
$Hz \to s\bar{s}$	$-1.907 \cdot 10^{-8}$	$-1.907 \cdot 10^{-8}$	$-1.574 \cdot 10^{-7}$	$1.804 \cdot 10^{-8}$	$1.804 \cdot 10^{-8}$	0	
$W^+W^-  o Hc\bar{c}$	$7.904 \cdot 10^{-14}$	$7.904 \cdot 10^{-14}$	$-1.265 \cdot 10^{-7}$	$2.45 \cdot 10^{-21}$	$2.45 \cdot 10^{-21}$	$-4.082 \cdot 10^{-8}$	
$W^+W^- \to H d\bar{d}$	$1.182 \cdot 10^{-15}$	$1.182 \cdot 10^{-15}$	$-8.462 \cdot 10^{-8}$	$5.41 \cdot 10^{-16}$	$5.41 \cdot 10^{-16}$	$-1.109 \cdot 10^{-7}$	
$b\bar{b}  o d\bar{d}$	$-1.304 \cdot 10^{-14}$	$-1.304 \cdot 10^{-14}$	0	$3.933 \cdot 10^{-16}$	$3.933 \cdot 10^{-16}$	0	
$d\bar{d} \to c\bar{c}$	$-1.19 \cdot 10^{-15}$	$-1.19 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0	
$d\bar{d} \rightarrow e^+e^-$	$-6.438 \cdot 10^{-23}$	$-6.438 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0	
$d\bar{d} \to s\bar{s}$	$-1.286 \cdot 10^{-17}$	$-1.286 \cdot 10^{-17}$	0	$7.787 \cdot 10^{-19}$	$7.787 \cdot 10^{-19}$	0	

$s\bar{s} \to s\bar{s}$	$4.778 \cdot 10^{-8}$ $4.778 \cdot 10^{-8}$	0	$6.948 \cdot 10^{-16}  6.948 \cdot 10^{-16}  0$
$t\bar{t} \to d\bar{d}$	$-2.08 \cdot 10^{-11}$ $-2.08 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}  6.323 \cdot 10^{-13} \qquad 0$
$t\bar{t} \to s\bar{s}$	$-8.284 \cdot 10^{-9}$ $-8.284 \cdot 10^{-9}$	0	$2.507 \cdot 10^{-10}  2.507 \cdot 10^{-10} \qquad 0$
$u\bar{d} \to u\bar{d}$	$-1.748 \cdot 10^{-21}  -1.748 \cdot 10^{-21}$	0	$9.439 \cdot 10^{-23}  9.439 \cdot 10^{-23}$

#### 2.82 cdWIm

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to W^- u \bar{d}$	$1.011 \cdot 10^{-14}$	$1.011 \cdot 10^{-14}$	$-2.969 \cdot 10^{-7}$	$5.025 \cdot 10^{-15}$	$5.025 \cdot 10^{-15}$	$-7.96 \cdot 10^{-8}$
$HH \to z d\bar{d}$	$-2.272 \cdot 10^{-16}$	$-2.272 \cdot 10^{-16}$	$-2.641 \cdot 10^{-7}$	$2.595 \cdot 10^{-15}$	$2.595 \cdot 10^{-15}$	$-1.156 \cdot 10^{-7}$
$HW^+ \to \gamma u \bar{d}$	$-2.697 \cdot 10^{-15}$	$-2.697 \cdot 10^{-15}$	$2.225 \cdot 10^{-7}$	$3.715 \cdot 10^{-15}$	$3.715 \cdot 10^{-15}$	$2.692 \cdot 10^{-7}$
$HW^+ \to u\bar{d}$	$-7.02 \cdot 10^{-14}$	$-7.02 \cdot 10^{-14}$	$-1.14 \cdot 10^{-7}$	$1.144 \cdot 10^{-9}$	$1.144 \cdot 10^{-9}$	0
$H\gamma \to d\bar{d}$	$-2.9 \cdot 10^{-27}$	$-2.9 \cdot 10^{-27}$	$3.103 \cdot 10^{-7}$	$2.483 \cdot 10^{-10}$	$2.483 \cdot 10^{-10}$	$3.625 \cdot 10^{-7}$
$Hz \to s\bar{s}$	$4.709 \cdot 10^{-11}$	$4.709 \cdot 10^{-11}$	$-6.371 \cdot 10^{-8}$	$3.032 \cdot 10^{-7}$	$3.032 \cdot 10^{-7}$	$-9.894 \cdot 10^{-8}$
$W^+W^-  o Hc\bar{c}$	$-5.919 \cdot 10^{-15}$	$-5.919 \cdot 10^{-15}$	$-2.703 \cdot 10^{-7}$	$2.95 \cdot 10^{-19}$	$2.95 \cdot 10^{-19}$	0
$W^+W^- \to H d\bar{d}$	$3.421 \cdot 10^{-14}$	$3.421 \cdot 10^{-14}$	$-1.462 \cdot 10^{-7}$	$4.037 \cdot 10^{-15}$	$4.037 \cdot 10^{-15}$	$-1.486 \cdot 10^{-7}$
$\bar{b}t \to \bar{d}u$	$8.656 \cdot 10^{-27}$	$3.82 \cdot 10^{-26}$	-3.413	$9.082 \cdot 10^{-12}$	$9.082 \cdot 10^{-12}$	$-1.101 \cdot 10^{-7}$
$b\bar{b}  o d\bar{d}$	$2.495 \cdot 10^{-30}$	$-2.972 \cdot 10^{-29}$	12.91	$3.561 \cdot 10^{-12}$	$3.561 \cdot 10^{-12}$	$-1.123 \cdot 10^{-7}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$5.993 \cdot 10^{-25}$	$1.376 \cdot 10^{-24}$	-1.296	$4.91 \cdot 10^{-10}$	$4.91 \cdot 10^{-10}$	$-1.018 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	$-1.125 \cdot 10^{-26}$	$-8.619 \cdot 10^{-27}$	0.234	$4.636 \cdot 10^{-12}$	$4.636 \cdot 10^{-12}$	$-1.294 \cdot 10^{-7}$
$d\bar{d} \rightarrow e^+e^-$	$3.235 \cdot 10^{-27}$	$3.234 \cdot 10^{-27}$	0.000187	$2.182 \cdot 10^{-13}$	$2.182 \cdot 10^{-13}$	$-9.166 \cdot 10^{-8}$
$d\bar{d} \to s\bar{s}$	$-2.152 \cdot 10^{-26}$	$-1.938 \cdot 10^{-26}$	0.09915	$5.064 \cdot 10^{-10}$	$5.064 \cdot 10^{-10}$	$-1.185 \cdot 10^{-7}$
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$8.189 \cdot 10^{-25}$	$1.776 \cdot 10^{-25}$	0.7831	$3.819 \cdot 10^{-10}$	$3.819 \cdot 10^{-10}$	$-1.047 \cdot 10^{-7}$
$s\bar{s} \to s\bar{s}$	$-1.1 \cdot 10^{-23}$	$3.233 \cdot 10^{-23}$	3.938	$1.17 \cdot 10^{-8}$	$1.17 \cdot 10^{-8}$	$-8.546 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	$2.98 \cdot 10^{-26}$	$-3.57 \cdot 10^{-26}$	2.198	$9.719 \cdot 10^{-13}$	$9.719 \cdot 10^{-13}$	$-1.029 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	$9.574 \cdot 10^{-24}$	$1.425 \cdot 10^{-23}$	-0.4883	$1.57 \cdot 10^{-9}$	$1.57 \cdot 10^{-9}$	$-1.274 \cdot 10^{-7}$
$u\bar{d} \to \mu^+ \nu_\mu$	$4.034 \cdot 10^{-28}$	$1.966 \cdot 10^{-28}$	0.5128	$1.688 \cdot 10^{-12}$	$1.688 \cdot 10^{-12}$	$-5.926 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	$-1.107 \cdot 10^{-26}$	$-3.814 \cdot 10^{-26}$	-2.444	$2.762 \cdot 10^{-9}$	$2.762 \cdot 10^{-9}$	$-1.086 \cdot 10^{-7}$

 $u\bar{d} \to u\bar{d} \qquad \qquad 2.556 \cdot 10^{-26} \quad -1.731 \cdot 10^{-26} \qquad \qquad 1.677 \qquad \qquad 1.747 \cdot 10^{-11} \quad 1.747 \cdot 10^{-11} \quad -1.145 \cdot 10^{-7}$ 

#### 2.83 cdWRe

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to W^- u \bar{d}$	$-6.875 \cdot 10^{-16}$	$-6.875 \cdot 10^{-16}$	$-2.764 \cdot 10^{-7}$	$6.815 \cdot 10^{-16}$	$6.815 \cdot 10^{-16}$	$-1.027 \cdot 10^{-7}$
$HH \to z d\bar{d}$	$-2.94 \cdot 10^{-15}$	$-2.94 \cdot 10^{-15}$	$-2.041 \cdot 10^{-7}$	$1.41 \cdot 10^{-15}$	$1.41 \cdot 10^{-15}$	$-7.093 \cdot 10^{-8}$
$HW^+ \to \gamma u \bar{d}$	$1.748 \cdot 10^{-16}$	$1.748 \cdot 10^{-16}$	$2.288 \cdot 10^{-7}$	$2.209 \cdot 10^{-16}$	$2.209 \cdot 10^{-16}$	$2.716 \cdot 10^{-7}$
$HW^+ \rightarrow u\bar{d}$	$-4.184 \cdot 10^{-11}$	$-4.184 \cdot 10^{-11}$	$-1.673 \cdot 10^{-7}$	$1.475 \cdot 10^{-9}$	$1.475 \cdot 10^{-9}$	$-6.781 \cdot 10^{-8}$
$H\gamma \to d\bar{d}$	$4.98 \cdot 10^{-20}$	$4.98 \cdot 10^{-20}$	$3.012 \cdot 10^{-7}$	$3.917 \cdot 10^{-10}$	$3.917 \cdot 10^{-10}$	$3.574 \cdot 10^{-7}$
$Hz \to s\bar{s}$	$-1.512 \cdot 10^{-8}$	$-1.512 \cdot 10^{-8}$	$-1.985 \cdot 10^{-7}$	$4.514 \cdot 10^{-7}$	$4.514 \cdot 10^{-7}$	$-1.108 \cdot 10^{-7}$
$W^+W^- \to H c \bar c$	$-1.487 \cdot 10^{-13}$	$-1.487 \cdot 10^{-13}$	$-1.345 \cdot 10^{-7}$	$4.957 \cdot 10^{-19}$	$4.957 \cdot 10^{-19}$	0
$W^+W^-  o H d \bar d$	$7.665 \cdot 10^{-15}$	$7.665 \cdot 10^{-15}$	$-1.827 \cdot 10^{-7}$	$1.554 \cdot 10^{-14}$	$1.554 \cdot 10^{-14}$	$-1.287 \cdot 10^{-7}$
$\bar{b}t \to \bar{d}u$	$-7.799 \cdot 10^{-12}$	$-7.799 \cdot 10^{-12}$	$-1.282 \cdot 10^{-7}$	$8.887 \cdot 10^{-12}$	$8.887 \cdot 10^{-12}$	$-1.013 \cdot 10^{-7}$
$b\bar{b} \to d\bar{d}$	$-3.426 \cdot 10^{-12}$	$-3.426 \cdot 10^{-12}$	$-1.751 \cdot 10^{-7}$	$4.54 \cdot 10^{-12}$	$4.54 \cdot 10^{-12}$	$-8.811 \cdot 10^{-8}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-1.155 \cdot 10^{-9}$	$-1.155 \cdot 10^{-9}$	$-1.732 \cdot 10^{-7}$	$9.787 \cdot 10^{-10}$	$9.787 \cdot 10^{-10}$	$-1.124 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	$-3.544 \cdot 10^{-12}$	$-3.544 \cdot 10^{-12}$	$-1.693 \cdot 10^{-7}$	$4.517 \cdot 10^{-12}$	$4.517 \cdot 10^{-12}$	$-1.107 \cdot 10^{-7}$
$d\bar{d} \rightarrow e^+e^-$	$-1.415 \cdot 10^{-12}$	$-1.415 \cdot 10^{-12}$	$-2.12 \cdot 10^{-7}$	$1.226 \cdot 10^{-12}$	$1.226 \cdot 10^{-12}$	$-1.631 \cdot 10^{-7}$
$d\bar{d} \to s\bar{s}$	$-1.165 \cdot 10^{-9}$	$-1.165 \cdot 10^{-9}$	$-1.716 \cdot 10^{-7}$	$1.849 \cdot 10^{-9}$	$1.849 \cdot 10^{-9}$	$-1.082 \cdot 10^{-7}$
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	$-2.571 \cdot 10^{-10}$	$-2.571 \cdot 10^{-10}$	$-2.723 \cdot 10^{-7}$	$5.928 \cdot 10^{-10}$	$5.928 \cdot 10^{-10}$	$-1.012 \cdot 10^{-7}$
$s\bar{s} \to s\bar{s}$	$-1.387 \cdot 10^{-8}$	$-1.387 \cdot 10^{-8}$	0	$1.745 \cdot 10^{-8}$	$1.745 \cdot 10^{-8}$	$-1.146 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	$1.402 \cdot 10^{-12}$	$1.402 \cdot 10^{-12}$	$2.854 \cdot 10^{-7}$	$3.874 \cdot 10^{-12}$	$3.874 \cdot 10^{-12}$	$-1.033 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	$-3.897 \cdot 10^{-9}$	$-3.897 \cdot 10^{-9}$	$-7.697 \cdot 10^{-8}$	$1.226 \cdot 10^{-9}$	$1.226 \cdot 10^{-9}$	$-8.156 \cdot 10^{-8}$
$u\bar{d} \to \mu^+ \nu_\mu$	$-4.704 \cdot 10^{-14}$	$-4.704 \cdot 10^{-14}$	$-1.701 \cdot 10^{-7}$	$1.434 \cdot 10^{-13}$	$1.434 \cdot 10^{-13}$	$-1.395 \cdot 10^{-7}$
$u\bar{d} \to c\bar{s}$	$-3.241 \cdot 10^{-9}$	$-3.241 \cdot 10^{-9}$	$-1.851 \cdot 10^{-7}$	$3.232 \cdot 10^{-9}$	$3.232 \cdot 10^{-9}$	$-9.283 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$2.827 \cdot 10^{-10}$	$2.827 \cdot 10^{-10}$	$-3.537 \cdot 10^{-8}$	$4.788 \cdot 10^{-11}$	$4.788 \cdot 10^{-11}$	$-1.044 \cdot 10^{-7}$

## 2.84 cdd1

		interior	erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$d\bar{d} \to s\bar{s}$	0.04894	0.04894	$3.474 \cdot 10^{-7}$	3.43	3.43	0		
$s\bar{s} \to s\bar{s}$	-0.09387	-0.09387	$1.065 \cdot 10^{-8}$	0.9017	0.9017	0		

### 2.85 cdd8

		in	terference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$d\bar{d} \to s\bar{s}$	0.3331	0.3331	0	0.2248	0.2248	0		
$s\bar{s} \to s\bar{s}$	-0.1065	-0.1065	0	0.2002	0.2002	0		

#### 2.86 ceBIm

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to ze^+e^-$	$2.561 \cdot 10^{-19}$	$2.561 \cdot 10^{-19}$	$1.058 \cdot 10^{-5}$	$6.058 \cdot 10^{-19}$	$6.058 \cdot 10^{-19}$	$3.466 \cdot 10^{-7}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$-2.698 \cdot 10^{-18}$	$-2.698 \cdot 10^{-18}$	$-3.706 \cdot 10^{-8}$	$3.743 \cdot 10^{-19}$	$3.743 \cdot 10^{-19}$	$-2.138 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	$-1.961 \cdot 10^{-28}$	$-1.961 \cdot 10^{-28}$	$5.1 \cdot 10^{-8}$	$6.592 \cdot 10^{-12}$	$6.592 \cdot 10^{-12}$	$-1.062 \cdot 10^{-7}$
$Hz \to \mu^+\mu^-$	$-8.384 \cdot 10^{-12}$	$-8.384 \cdot 10^{-12}$	$1.789 \cdot 10^{-7}$	$4.832 \cdot 10^{-8}$	$4.832 \cdot 10^{-8}$	$3.518 \cdot 10^{-7}$
$\mu^+\mu^- \to \tau^+\tau^-$	$-7.659 \cdot 10^{-24}$	$-7.475 \cdot 10^{-24}$	0.02403	$5.534 \cdot 10^{-7}$	$5.534 \cdot 10^{-7}$	$3.434 \cdot 10^{-7}$
$b\bar{b} \to \mu^+ \mu^-$	$7.297 \cdot 10^{-27}$	$4.523 \cdot 10^{-27}$	0.3801	$1.209 \cdot 10^{-10}$	$1.209 \cdot 10^{-10}$	$3.309 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	$-5.204 \cdot 10^{-27}$	$8.076 \cdot 10^{-28}$	1.155	$1.316 \cdot 10^{-10}$	$1.316 \cdot 10^{-10}$	$3.04 \cdot 10^{-7}$
$d\bar{d} \rightarrow e^+e^-$	$2.844 \cdot 10^{-30}$	$2.851 \cdot 10^{-30}$	-0.002351	$2.547 \cdot 10^{-15}$	$2.547 \cdot 10^{-15}$	$3.926 \cdot 10^{-7}$
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$2.577 \cdot 10^{-28}$	$2.825 \cdot 10^{-29}$	0.8904	$2.326 \cdot 10^{-13}$	$2.326 \cdot 10^{-13}$	$3.87 \cdot 10^{-7}$
$e^+\nu_e \to e^+\nu_e$	$-3.476 \cdot 10^{-27}$	$-3.282 \cdot 10^{-27}$	0.05567	$4.586 \cdot 10^{-14}$	$4.586 \cdot 10^{-14}$	$3.707 \cdot 10^{-7}$
$e^+\tau^- \to e^+\tau^-$	$3.426 \cdot 10^{-16}$	$3.426 \cdot 10^{-16}$	$5.05 \cdot 10^{-6}$	$1.328 \cdot 10^{-5}$	$1.328 \cdot 10^{-5}$	$3.013 \cdot 10^{-7}$

$e^+e^- \rightarrow \mu^+\mu^-$	$2.836 \cdot 10^{-26}$	$5.223 \cdot 10^{-26}$	-0.8415	$1.287 \cdot 10^{-9}$	$1.287 \cdot 10^{-9}$	$3.886 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	$7.369 \cdot 10^{-30}$	$4.265 \cdot 10^{-29}$	-4.787	$7.756 \cdot 10^{-13}$	$7.756 \cdot 10^{-13}$	$3.481 \cdot 10^{-7}$
$t\bar{t} \to \tau^+ \tau^-$	$1.801 \cdot 10^{-21}$	$-1.512 \cdot 10^{-21}$	1.84	$1.31 \cdot 10^{-7}$	$1.31 \cdot 10^{-7}$	$3.818 \cdot 10^{-7}$

### 2.87 ceBRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to ze^+e^-$	$-1.099 \cdot 10^{-17}$	$-1.099 \cdot 10^{-17}$	$-4.732 \cdot 10^{-6}$	$6.058 \cdot 10^{-19}$	$6.058 \cdot 10^{-19}$	$3.466 \cdot 10^{-7}$	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-8.03 \cdot 10^{-19}$	$-8.03 \cdot 10^{-19}$	$-6.227 \cdot 10^{-8}$	$3.743 \cdot 10^{-19}$	$3.743 \cdot 10^{-19}$	$-2.138 \cdot 10^{-7}$	
$H\gamma \to e^+e^-$	$4.843 \cdot 10^{-23}$	$4.843 \cdot 10^{-23}$	$8.259 \cdot 10^{-8}$	$6.592 \cdot 10^{-12}$	$6.592 \cdot 10^{-12}$	$-1.062 \cdot 10^{-7}$	
$Hz \to \mu^+\mu^-$	$-3.428 \cdot 10^{-10}$	$-3.428 \cdot 10^{-10}$	$-4.872 \cdot 10^{-6}$	$4.832 \cdot 10^{-8}$	$4.832 \cdot 10^{-8}$	$3.518 \cdot 10^{-7}$	
$\mu^+\mu^- \to \tau^+\tau^-$	$1.639 \cdot 10^{-6}$	$1.639 \cdot 10^{-6}$	$4.271 \cdot 10^{-7}$	$5.534 \cdot 10^{-7}$	$5.534 \cdot 10^{-7}$	$3.614 \cdot 10^{-7}$	
$b\bar{b} \to \mu^+ \mu^-$	$6.872 \cdot 10^{-11}$	$6.872 \cdot 10^{-11}$	$9.749 \cdot 10^{-7}$	$1.209 \cdot 10^{-10}$	$1.209 \cdot 10^{-10}$	$3.309 \cdot 10^{-7}$	
$c\bar{c} \to \mu^+ \mu^-$	$3.769 \cdot 10^{-10}$	$3.769 \cdot 10^{-10}$	$5.041 \cdot 10^{-7}$	$1.316 \cdot 10^{-10}$	$1.316 \cdot 10^{-10}$	$3.04 \cdot 10^{-7}$	
$d\bar{d} \rightarrow e^+e^-$	$4.303 \cdot 10^{-16}$	$4.303 \cdot 10^{-16}$	$4.021 \cdot 10^{-6}$	$2.547 \cdot 10^{-15}$	$2.547 \cdot 10^{-15}$	$3.926 \cdot 10^{-7}$	
$e^+\nu_\mu \to e^+\nu_\mu$	$2.004 \cdot 10^{-13}$	$2.004 \cdot 10^{-13}$	$2.495 \cdot 10^{-7}$	$2.326 \cdot 10^{-13}$	$2.326 \cdot 10^{-13}$	$3.87 \cdot 10^{-7}$	
$e^+\nu_e \to e^+\nu_e$	$9.068 \cdot 10^{-14}$	$9.068 \cdot 10^{-14}$	$2.316 \cdot 10^{-7}$	$4.586 \cdot 10^{-14}$	$4.586 \cdot 10^{-14}$	$3.707 \cdot 10^{-7}$	
$e^+\tau^- \to e^+\tau^-$	$-2.017 \cdot 10^{-6}$	$-2.017 \cdot 10^{-6}$	$1.983 \cdot 10^{-7}$	$1.328 \cdot 10^{-5}$	$1.328 \cdot 10^{-5}$	$3.766 \cdot 10^{-7}$	
$e^+e^-  o \mu^+\mu^-$	$3.382 \cdot 10^{-9}$	$3.382 \cdot 10^{-9}$	$5.027 \cdot 10^{-7}$	$1.287 \cdot 10^{-9}$	$1.287 \cdot 10^{-9}$	$3.886 \cdot 10^{-7}$	
$e^+e^- \rightarrow e^+e^-$	$3.756 \cdot 10^{-13}$	$3.756 \cdot 10^{-13}$	$5.591 \cdot 10^{-7}$	$7.756 \cdot 10^{-13}$	$7.756 \cdot 10^{-13}$	$3.481 \cdot 10^{-7}$	
$t\bar{t} \to \tau^+ \tau^-$	$2.086 \cdot 10^{-7}$	$2.086 \cdot 10^{-7}$	$4.315 \cdot 10^{-7}$	$1.31\cdot 10^{-7}$	$1.31\cdot 10^{-7}$	$3.818 \cdot 10^{-7}$	

## **2.88 ceHIm**

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$HH \to H \tau^+ \tau^-$	$-1.052 \cdot 10^{-13}$	$-1.052 \cdot 10^{-13}$	0	$2.303 \cdot 10^{-11}$	$2.303 \cdot 10^{-11}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$-1.387 \cdot 10^{-18}$	$-1.387 \cdot 10^{-18}$	$-1.442 \cdot 10^{-7}$	$6.167 \cdot 10^{-18}$	$6.167 \cdot 10^{-18}$	$-6.486 \cdot 10^{-8}$	

$HH \rightarrow ze^+e^-$	$2.236 \cdot 10^{-18}$	$2.236 \cdot 10^{-18}$	0	$5.512 \cdot 10^{-18}$	$5.512 \cdot 10^{-18}$	$-5.442 \cdot 10^{-8}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$-9.432 \cdot 10^{-20}$	$-9.432 \cdot 10^{-20}$	$7.422 \cdot 10^{-8}$	$3.127 \cdot 10^{-20}$	$3.127 \cdot 10^{-20}$	$1.599 \cdot 10^{-7}$
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$4.087 \cdot 10^{-11}$	$4.087 \cdot 10^{-11}$	$-4.894 \cdot 10^{-8}$	$7.446 \cdot 10^{-9}$	$7.446 \cdot 10^{-9}$	0
$H\gamma \rightarrow e^+e^-$	$1.515 \cdot 10^{-28}$	$1.262 \cdot 10^{-28}$	0.1667	$1.954 \cdot 10^{-14}$	$1.954 \cdot 10^{-14}$	$2.559 \cdot 10^{-7}$
$Hz \to \mu^+\mu^-$	$4.01 \cdot 10^{-15}$	$4.01 \cdot 10^{-15}$	$-5.063 \cdot 10^{-6}$	$7.63 \cdot 10^{-9}$	$7.63 \cdot 10^{-9}$	0
$\mu^+\mu^-  o  au^+ au^-$	$-3.459 \cdot 10^{-29}$	$8.012 \cdot 10^{-30}$	1.232	$7.277 \cdot 10^{-14}$	$7.277 \cdot 10^{-14}$	0
$b\bar{b} \to \mu^+\mu^-$	$-5.018 \cdot 10^{-30}$	$-4.668 \cdot 10^{-30}$	0.06986	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-1.798 \cdot 10^{-29}$	$-1.33 \cdot 10^{-29}$	0.2604	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
$d\bar{d} \to e^+e^-$	$-2.898 \cdot 10^{-39}$	$-1.02 \cdot 10^{-39}$	0.6479	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
$e^+\tau^- \to e^+\tau^-$	$-1.254 \cdot 10^{-26}$	$-1.254 \cdot 10^{-26}$	$-5.105 \cdot 10^{-6}$	$1.481 \cdot 10^{-18}$	$1.481 \cdot 10^{-18}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	$-9.596 \cdot 10^{-37}$	$2.12 \cdot 10^{-36}$	3.209	$6.017 \cdot 10^{-21}$	$6.017 \cdot 10^{-21}$	0
$e^+e^- \rightarrow e^+e^-$	$6.116 \cdot 10^{-31}$	$6.116 \cdot 10^{-31}$	$3.597 \cdot 10^{-7}$	$5.434 \cdot 10^{-25}$	$5.434 \cdot 10^{-25}$	0
$t\bar{t} \to \tau^+ \tau^-$	$6.336 \cdot 10^{-23}$	$3.57 \cdot 10^{-23}$	0.4366	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	0

## **2.89** ceHRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to H \tau^+ \tau^-$	$-1.826 \cdot 10^{-10}$	$-1.826 \cdot 10^{-10}$	0	$8.169 \cdot 10^{-11}$	$8.169 \cdot 10^{-11}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$-1.531 \cdot 10^{-17}$	$-1.531 \cdot 10^{-17}$	0	$7.093 \cdot 10^{-18}$	$7.093 \cdot 10^{-18}$	$-7.049 \cdot 10^{-8}$	
$HH \rightarrow ze^+e^-$	$6.065 \cdot 10^{-18}$	$6.065 \cdot 10^{-18}$	$1.979 \cdot 10^{-7}$	$5.036 \cdot 10^{-18}$	$5.036 \cdot 10^{-18}$	$-5.957 \cdot 10^{-8}$	
$HW^- \to \gamma e^- \bar{\nu}_e$	$3.07 \cdot 10^{-19}$	$3.07 \cdot 10^{-19}$	$5.212 \cdot 10^{-7}$	$4.468 \cdot 10^{-19}$	$4.468 \cdot 10^{-19}$	$2.462 \cdot 10^{-7}$	
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$-1.385 \cdot 10^{-9}$	$-1.385 \cdot 10^{-9}$	$-7.22 \cdot 10^{-8}$	$7.446 \cdot 10^{-9}$	$7.446 \cdot 10^{-9}$	0	
$H\gamma \rightarrow e^+e^-$	$-4.11 \cdot 10^{-13}$	$-4.11 \cdot 10^{-13}$	$2.433 \cdot 10^{-7}$	$1.246 \cdot 10^{-14}$	$1.246 \cdot 10^{-14}$	$2.408 \cdot 10^{-7}$	
$Hz \to \mu^+\mu^-$	$1.174 \cdot 10^{-9}$	$1.174 \cdot 10^{-9}$	$2.555 \cdot 10^{-7}$	$7.472 \cdot 10^{-9}$	$7.472 \cdot 10^{-9}$	0	
$\mu^+\mu^- \to \tau^+\tau^-$	$-2.439 \cdot 10^{-12}$	$-2.439 \cdot 10^{-12}$	0	$1.455 \cdot 10^{-13}$	$1.455 \cdot 10^{-13}$	0	
$b\bar{b} \to \mu^+ \mu^-$	$-2.208 \cdot 10^{-12}$	$-2.208 \cdot 10^{-12}$	0	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	0	
$c\bar{c} \rightarrow \mu^+\mu^-$	$-2.071 \cdot 10^{-13}$	$-2.071 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0	
$d\bar{d} \rightarrow e^+e^-$	$-6.486 \cdot 10^{-23}$	$-6.486 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0	

$e^+\tau^- \to e^+\tau^-$	$-8.748 \cdot 10^{-17}$	$-8.748 \cdot 10^{-17}$	$1.029 \cdot 10^{-7}$	$2.896 \cdot 10^{-18}$	$2.896 \cdot 10^{-18}$	0
$e^+e^- \to \mu^+\mu^-$	$-1.948 \cdot 10^{-19}$	$-1.948 \cdot 10^{-19}$	0	$1.203 \cdot 10^{-20}$	$1.203 \cdot 10^{-20}$	0
$e^+e^- \rightarrow e^+e^-$	$1.421 \cdot 10^{-13}$	$1.421 \cdot 10^{-13}$	$3.519 \cdot 10^{-7}$	$8.139 \cdot 10^{-25}$	$8.139 \cdot 10^{-25}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-1.007 \cdot 10^{-6}$	$-1.007 \cdot 10^{-6}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	0

### 2.90 ceWIm

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to W^+ e^- \bar{\nu}_e$	$8.288 \cdot 10^{-18}$	$8.288 \cdot 10^{-18}$	$1.086 \cdot 10^{-7}$	$4.994 \cdot 10^{-18}$	$4.994 \cdot 10^{-18}$	$-1.001 \cdot 10^{-7}$	
$HH \rightarrow ze^+e^-$	$4.638 \cdot 10^{-19}$	$4.638 \cdot 10^{-19}$	$1.033 \cdot 10^{-5}$	$1.988 \cdot 10^{-18}$	$1.988 \cdot 10^{-18}$	$-1.006 \cdot 10^{-7}$	
$HW^- \to \gamma e^- \bar{\nu}_e$	$5.767 \cdot 10^{-18}$	$5.767 \cdot 10^{-18}$	$1.908 \cdot 10^{-7}$	$1.606 \cdot 10^{-17}$	$1.606 \cdot 10^{-17}$	$2.491 \cdot 10^{-7}$	
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$2.354 \cdot 10^{-11}$	$2.354 \cdot 10^{-11}$	$-1.274 \cdot 10^{-7}$	$3.897 \cdot 10^{-8}$	$3.897 \cdot 10^{-8}$	$-2.566 \cdot 10^{-8}$	
$H\gamma \to e^+e^-$	$1.082 \cdot 10^{-28}$	$1.082 \cdot 10^{-28}$	$2.772 \cdot 10^{-7}$	$2.009 \cdot 10^{-12}$	$2.009 \cdot 10^{-12}$	$3.485 \cdot 10^{-7}$	
$Hz \to \mu^+\mu^-$	$-1.519 \cdot 10^{-11}$	$-1.519 \cdot 10^{-11}$	$-6.584 \cdot 10^{-8}$	$1.586 \cdot 10^{-7}$	$1.586 \cdot 10^{-7}$	$-1.261 \cdot 10^{-7}$	
$\mu^+\mu^- \to \tau^+\tau^-$	$5.422 \cdot 10^{-24}$	$2.193 \cdot 10^{-24}$	0.5955	$3.659 \cdot 10^{-7}$	$3.659 \cdot 10^{-7}$	$-1.093 \cdot 10^{-7}$	
$b\bar{b} \to \mu^+ \mu^-$	$6.897 \cdot 10^{-28}$	$-9.851 \cdot 10^{-27}$	15.28	$7.159 \cdot 10^{-10}$	$7.159 \cdot 10^{-10}$	$-1.118 \cdot 10^{-7}$	
$b\bar{t} \to e^- \bar{\nu}_e$	$4.953 \cdot 10^{-29}$	$1.403 \cdot 10^{-28}$	-1.833	$7.482 \cdot 10^{-15}$	$7.482 \cdot 10^{-15}$	$-1.069 \cdot 10^{-7}$	
$c\bar{c} \to \mu^+ \mu^-$	$-2.89 \cdot 10^{-27}$	$-3.267 \cdot 10^{-27}$	-0.1302	$2.309 \cdot 10^{-10}$	$2.309 \cdot 10^{-10}$	$-1.299 \cdot 10^{-7}$	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-8.11 \cdot 10^{-26}$	$-2.457 \cdot 10^{-25}$	-2.03	$2.68 \cdot 10^{-8}$	$2.68 \cdot 10^{-8}$	$-1.12 \cdot 10^{-7}$	
$d\bar{d} \to e^+e^-$	$4.787 \cdot 10^{-30}$	$4.743 \cdot 10^{-30}$	0.00929	$1.508 \cdot 10^{-14}$	$1.508 \cdot 10^{-14}$	$-6.631 \cdot 10^{-8}$	
$e^+\nu_\mu \to e^+\nu_\mu$	$4.688 \cdot 10^{-28}$	$6.918 \cdot 10^{-29}$	0.8524	$7.631 \cdot 10^{-13}$	$7.631 \cdot 10^{-13}$	$-1.048 \cdot 10^{-7}$	
$e^+\nu_e \to \mu^+\nu_\mu$	$-1.131 \cdot 10^{-25}$	$-3.38 \cdot 10^{-27}$	0.9701	$1.758 \cdot 10^{-9}$	$1.758 \cdot 10^{-9}$	$-1.138 \cdot 10^{-7}$	
$e^+\nu_e \to e^+\nu_e$	$-6.49 \cdot 10^{-27}$	$-6.815 \cdot 10^{-27}$	-0.05012	$5.866 \cdot 10^{-15}$	$5.866 \cdot 10^{-15}$	$-1.023 \cdot 10^{-7}$	
$e^+\tau^- \to e^+\tau^-$	$1.322 \cdot 10^{-15}$	$1.322 \cdot 10^{-15}$	$-3.782 \cdot 10^{-7}$	$8.444 \cdot 10^{-6}$	$8.444 \cdot 10^{-6}$	$-9.474 \cdot 10^{-8}$	
$e^+e^- \to \mu^+\mu^-$	$-2.869 \cdot 10^{-26}$	$1.366 \cdot 10^{-26}$	1.476	$8.509 \cdot 10^{-10}$	$8.509 \cdot 10^{-10}$	$-1.058 \cdot 10^{-7}$	
$e^+e^- \rightarrow e^+e^-$	$4.163 \cdot 10^{-30}$	$1.415 \cdot 10^{-29}$	-2.399	$5.076 \cdot 10^{-13}$	$5.076 \cdot 10^{-13}$	$-9.85 \cdot 10^{-8}$	
$t\bar{t} \to \tau^+ \tau^-$	$3.251 \cdot 10^{-21}$	$-2.775 \cdot 10^{-21}$	1.854	$2.235 \cdot 10^{-7}$	$2.235 \cdot 10^{-7}$	$-1.342 \cdot 10^{-7}$	
$u\bar{d} \to \mu^+ \nu_{\mu}$	$5.441 \cdot 10^{-28}$	$3.31 \cdot 10^{-28}$	0.3918	$1.523 \cdot 10^{-9}$	$1.523 \cdot 10^{-9}$	$-6.564 \cdot 10^{-8}$	

#### 2.91 ceWRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o W^+ e^- \bar{\nu}_e$	$-2.696 \cdot 10^{-18}$	$-2.696 \cdot 10^{-18}$	$-4.45 \cdot 10^{-7}$	$1.145 \cdot 10^{-18}$	$1.145 \cdot 10^{-18}$	$-1.747 \cdot 10^{-7}$	
$HH \rightarrow ze^+e^-$	$-3.858 \cdot 10^{-19}$	$-3.858 \cdot 10^{-19}$	$-6.765 \cdot 10^{-6}$	$2.009 \cdot 10^{-18}$	$2.009 \cdot 10^{-18}$	$-1.493 \cdot 10^{-7}$	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-1.478 \cdot 10^{-17}$	$-1.478 \cdot 10^{-17}$	$2.03 \cdot 10^{-7}$	$5.461 \cdot 10^{-18}$	$5.461 \cdot 10^{-18}$	$2.38 \cdot 10^{-7}$	
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$-9.13 \cdot 10^{-9}$	$-9.13 \cdot 10^{-9}$	$-1.643 \cdot 10^{-7}$	$3.145 \cdot 10^{-8}$	$3.145 \cdot 10^{-8}$	0	
$H\gamma \to e^+e^-$	$-1.187 \cdot 10^{-23}$	$-1.187 \cdot 10^{-23}$	$2.528 \cdot 10^{-7}$	$1.281 \cdot 10^{-12}$	$1.281 \cdot 10^{-12}$	$3.904 \cdot 10^{-7}$	
$Hz \to \mu^+\mu^-$	$-6.21 \cdot 10^{-10}$	$-6.21 \cdot 10^{-10}$	$-5.121 \cdot 10^{-6}$	$7.962 \cdot 10^{-8}$	$7.962 \cdot 10^{-8}$	$-1.13 \cdot 10^{-7}$	
$\mu^+\mu^- \to \tau^+\tau^-$	$-8.551 \cdot 10^{-7}$	$-8.551 \cdot 10^{-7}$	$4.678 \cdot 10^{-8}$	$6.668 \cdot 10^{-7}$	$6.668 \cdot 10^{-7}$	$-1.05\cdot10^{-7}$	
$b\bar{b}  o \mu^+ \mu^-$	$-7.498 \cdot 10^{-10}$	$-7.498 \cdot 10^{-10}$	$-2.401 \cdot 10^{-7}$	$4.117 \cdot 10^{-10}$	$4.117 \cdot 10^{-10}$	$-1.214 \cdot 10^{-7}$	
$b\bar{t} \to e^- \bar{\nu}_e$	$4.001 \cdot 10^{-15}$	$4.001 \cdot 10^{-15}$	$1.2\cdot 10^{-6}$	$8.494 \cdot 10^{-15}$	$8.494 \cdot 10^{-15}$	$-1.177 \cdot 10^{-7}$	
$c\bar{c} \to \mu^+ \mu^-$	$-1.029 \cdot 10^{-9}$	$-1.029 \cdot 10^{-9}$	$-9.714 \cdot 10^{-8}$	$2.965 \cdot 10^{-10}$	$2.965 \cdot 10^{-10}$	$-1.012 \cdot 10^{-7}$	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-1.124 \cdot 10^{-8}$	$-1.124 \cdot 10^{-8}$	$-1.779 \cdot 10^{-7}$	$3.391 \cdot 10^{-8}$	$3.391 \cdot 10^{-8}$	$-1.18 \cdot 10^{-7}$	
$d\bar{d} \rightarrow e^+e^-$	$-7.191 \cdot 10^{-15}$	$-7.191 \cdot 10^{-15}$	$-4.172 \cdot 10^{-7}$	$1.843 \cdot 10^{-14}$	$1.843 \cdot 10^{-14}$	$-1.085 \cdot 10^{-7}$	
$e^+\nu_\mu \to e^+\nu_\mu$	$1.101 \cdot 10^{-13}$	$1.101 \cdot 10^{-13}$	0	$1.607 \cdot 10^{-13}$	$1.607 \cdot 10^{-13}$	$-1.244 \cdot 10^{-7}$	
$e^+\nu_e \to \mu^+\nu_\mu$	$-2.908 \cdot 10^{-9}$	$-2.908 \cdot 10^{-9}$	$-1.72 \cdot 10^{-7}$	$4.74 \cdot 10^{-9}$	$4.74 \cdot 10^{-9}$	$-1.266 \cdot 10^{-7}$	
$e^+\nu_e \to e^+\nu_e$	$-3.368 \cdot 10^{-14}$	$-3.368 \cdot 10^{-14}$	$-9.797 \cdot 10^{-7}$	$1.152 \cdot 10^{-14}$	$1.152 \cdot 10^{-14}$	$-1.736 \cdot 10^{-7}$	
$e^+\tau^- \to e^+\tau^-$	$9.324 \cdot 10^{-7}$	$9.324 \cdot 10^{-7}$	$-7.293 \cdot 10^{-7}$	$6.508 \cdot 10^{-6}$	$6.508 \cdot 10^{-6}$	$-9.219 \cdot 10^{-8}$	
$e^+e^- \to \mu^+\mu^-$	$-2.038 \cdot 10^{-9}$	$-2.038 \cdot 10^{-9}$	$2.454 \cdot 10^{-7}$	$7.656 \cdot 10^{-10}$	$7.656 \cdot 10^{-10}$	$-1.045 \cdot 10^{-7}$	
$e^+e^- \rightarrow e^+e^-$	$-2.408 \cdot 10^{-13}$	$-2.408 \cdot 10^{-13}$	$3.322 \cdot 10^{-7}$	$3.905 \cdot 10^{-13}$	$3.905 \cdot 10^{-13}$	$-1.28 \cdot 10^{-7}$	
$t\bar{t} \to \tau^+ \tau^-$	$-5.765 \cdot 10^{-7}$	$-5.765 \cdot 10^{-7}$	$-1.735 \cdot 10^{-8}$	$1.244 \cdot 10^{-7}$	$1.244 \cdot 10^{-7}$	$-1.607 \cdot 10^{-7}$	
$u\bar{d} \to \mu^+ \nu_\mu$	$-9.635 \cdot 10^{-10}$	$-9.635 \cdot 10^{-10}$	$-1.661 \cdot 10^{-7}$	$1.579 \cdot 10^{-9}$	$1.579 \cdot 10^{-9}$	$-1.267 \cdot 10^{-7}$	

#### 2.92 ced

 $d\bar{d} \to e^+e^-$  0.01505 0.01505 3.321 · 10<sup>-7</sup> 0.1759 0.1759 0

#### 2.93 cee

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\mu^+\mu^- \to \tau^+\tau^-$	0.1526	0.1526	$3.277 \cdot 10^{-7}$	1.188	1.188	0	
$e^+\tau^- \to e^+\tau^-$	-0.9216	-0.9216	$3.581 \cdot 10^{-7}$	2.053	2.053	0	
$e^+e^- \rightarrow \mu^+\mu^-$	0.004039	0.004039	$3.467 \cdot 10^{-7}$	0.03145	0.03145	0	
$e^+e^- \rightarrow e^+e^-$	-0.01363	-0.01363	$3.67 \cdot 10^{-7}$	0.7705	0.7705	0	

#### 2.94 ceu

#### 2.95 cjQbd1Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-9.977 \cdot 10^{-16}$	$-9.977 \cdot 10^{-16}$	$-6.014 \cdot 10^{-8}$	$7.195 \cdot 10^{-10}$	$7.195 \cdot 10^{-10}$	0		
$b\bar{b} \to d\bar{d}$	$4.402 \cdot 10^{-29}$	$8.893 \cdot 10^{-29}$	-1.02	$1.439 \cdot 10^{-9}$	$1.439 \cdot 10^{-9}$	0		

#### 2.96 cjQbd1Re

$\bar{b}t \to \bar{d}u$	$5.919 \cdot 10^{-12}$	$5.919 \cdot 10^{-12}$	0	$7.195 \cdot 10^{-10}$	$7.195 \cdot 10^{-10}$	0
$b\bar{b} \to d\bar{d}$	$1.038 \cdot 10^{-11}$	$1.038 \cdot 10^{-11}$	0	$1.439 \cdot 10^{-9}$	$1.439 \cdot 10^{-9}$	0

### 2.97 cjQbd8Im

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$\bar{b}t \to \bar{d}u$	$-1.317 \cdot 10^{-15}$	$-1.317 \cdot 10^{-15}$	$-7.594 \cdot 10^{-8}$	$1.599 \cdot 10^{-10}$	$1.599 \cdot 10^{-10}$	0	
$b\bar{b}  o d\bar{d}$	$-1.996 \cdot 10^{-27}$	$-1.255 \cdot 10^{-27}$	0.371	$3.198 \cdot 10^{-10}$	$3.198 \cdot 10^{-10}$	0	

#### 2.98 cjQbd8Re

		interfe	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$7.861 \cdot 10^{-12}$	$7.861 \cdot 10^{-12}$	$1.272 \cdot 10^{-8}$	$1.599 \cdot 10^{-10}$	$1.599 \cdot 10^{-10}$	0		
$b\bar{b}  o d\bar{d}$	$1.583 \cdot 10^{-11}$	$1.583 \cdot 10^{-11}$	0	$3.198 \cdot 10^{-10}$	$3.198 \cdot 10^{-10}$	0		

### 2.99 cjQtu1Im

		interfere	ence		square		
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	$8.568 \cdot 10^{-15}$	$8.568 \cdot 10^{-15}$	$-5.835 \cdot 10^{-8}$	$1.539 \cdot 10^{-10}$	$1.539 \cdot 10^{-10}$	0	
$t\bar{t} \to c\bar{c}$	$-1.251 \cdot 10^{-23}$	$-6.377 \cdot 10^{-24}$	0.4903	0.0001065	0.0001065	0	

#### 2.100 cjQtu1Re

$\bar{b}t \to \bar{d}u$	$5.06 \cdot 10^{-11}$	$5.06 \cdot 10^{-11}$	0	$1.539 \cdot 10^{-10}$	$1.539 \cdot 10^{-10}$	0
$t\bar{t} \to c\bar{c}$	$2.911 \cdot 10^{-5}$	$2.911 \cdot 10^{-5}$	0	0.0001065	0.0001065	0

## $2.101 \quad cjQtu8Im$

		interfer	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	$1.13 \cdot 10^{-14}$	$1.13 \cdot 10^{-14}$	0	$3.42 \cdot 10^{-11}$	$3.42 \cdot 10^{-11}$	0	
$t\bar{t} \to c\bar{c}$	$-1.156 \cdot 10^{-21}$	$1.833 \cdot 10^{-22}$	1.159	$2.367 \cdot 10^{-5}$	$2.367 \cdot 10^{-5}$	0	

# 2.102 cjQtu8Re

		interfe	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$6.795 \cdot 10^{-11}$	$6.795 \cdot 10^{-11}$	0	$3.42 \cdot 10^{-11}$	$3.42 \cdot 10^{-11}$	0		
$t\bar{t} \to c\bar{c}$	$4.612 \cdot 10^{-5}$	$4.612 \cdot 10^{-5}$	0	$2.367 \cdot 10^{-5}$	$2.367 \cdot 10^{-5}$	0		

## $2.103 \quad \mathrm{cjd1}$

		inter	ference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$d\bar{d} \to c\bar{c}$	-0.003328	-0.003328	$3.606 \cdot 10^{-7}$	0.2379	0.2379	0	
$d\bar{d} \to s\bar{s}$	-0.000159	-0.000159	$3.145 \cdot 10^{-7}$	0.01094	0.01094	0	
$s\bar{s} \to s\bar{s}$	0.02434	0.02434	$3.286 \cdot 10^{-7}$	3.006	3.006	0	
$u\bar{d} \to u\bar{d}$	0.02196	0.02196	$3.188 \cdot 10^{-7}$	1	1	0	

## 2.104 cjd8

		inte	rference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$d\bar{d} \to c\bar{c}$	0.2694	0.2694	0	0.09092	0.09092	0	
$d\bar{d} \to s\bar{s}$	0.0004975	0.0004975	0	0.0001679	0.0001679	0	
$s\bar{s} \to s\bar{s}$	-1.817	-1.817	0	0.5949	0.5949	0	
$u\bar{d} \to u\bar{d}$	-1.55	-1.55	0	0.2222	0.2222	0	

# 2.105 cje

		interfe	erence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$c\bar{c} \to \mu^+ \mu^-$	-0.0001532	-0.0001532	$3.263 \cdot 10^{-7}$	0.003648	0.003648	0	
$d\bar{d} \rightarrow e^+e^-$	-0.004272	-0.004272	$3.511 \cdot 10^{-7}$	0.09794	0.09794	0	

# $2.106 \quad \mathrm{cjj} 11$

		terference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$d\bar{d} \to c\bar{c}$	-0.0531	-0.0531	$-1.318 \cdot 10^{-7}$	0.5194	0.5194	0
$d\bar{d} \to s\bar{s}$	0.4212	0.4212	$-9.498 \cdot 10^{-8}$	3.846	3.846	0
$s\bar{s} \to s\bar{s}$	-0.4008	-0.4008	$-2.495 \cdot 10^{-8}$	1.865	1.865	0
$u\bar{d} \to u\bar{d}$	0.4048	0.4048	$-1.235 \cdot 10^{-7}$	1.323	1.323	0
$u\bar{u} \to c\bar{c}$	0.3621	0.3621	$-1.105 \cdot 10^{-7}$	3.315	3.315	0
$u\bar{u} \to u\bar{u}$	-0.2328	-0.2328	0	1.382	1.382	0

# $2.107 \quad \mathrm{cjj} 18$

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$d\bar{d} \to c\bar{c}$	0.3137	0.3137	0	0.2118	0.2118	0
$d\bar{d} \to s\bar{s}$	0.1433	0.1433	0	0.0967	0.0967	0
$s\bar{s} \to s\bar{s}$	-0.01098	-0.01098	$-9.11 \cdot 10^{-8}$	0.04853	0.04853	0
$u\bar{d} \to u\bar{d}$	-2.584	-2.584	0	0.488	0.488	0
$u\bar{u} \to c\bar{c}$	0.103	0.103	0	0.06955	0.06955	0
$u\bar{u} \to u\bar{u}$	-0.0135	-0.0135	0	0.05492	0.05492	0

# $2.108\quad cjj31$

		inter	rference	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
$d\bar{d} \to c\bar{c}$	0.1073	0.1073	$-1.864 \cdot 10^{-7}$	1.05   1.05   0
$d\bar{d} \to s\bar{s}$	0.3756	0.3756	$-1.065 \cdot 10^{-7}$	3.43   3.43   0
$s\bar{s} \to s\bar{s}$	-0.1103	-0.1103	0	0.9017  0.9017  0
$u\bar{d} \to c\bar{s}$	0.1049	0.1049	$-1.907 \cdot 10^{-7}$	0.9914  0.9914  0
$u\bar{d} \to u\bar{d}$	-0.7539	-0.7539	$2.653 \cdot 10^{-8}$	1.647   1.647   0
$u\bar{u} \to c\bar{c}$	0.1908	0.1908	$-1.048 \cdot 10^{-7}$	1.747   1.747   0
$u\bar{u} \to u\bar{u}$	-0.002338	-0.002338	$-4.278 \cdot 10^{-8}$	$0.08228  0.08228 \qquad \qquad 0$

# $2.109\quad cjj38$

		interfe	erence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
$d\bar{d} \to c\bar{c}$	-0.7917	-0.7917	0	0.5344  0.5344  0
$d\bar{d} \to s\bar{s}$	0.03671	0.03671	0	$0.02478  0.02478 \qquad 0$
$s\bar{s} \to s\bar{s}$	-0.552	-0.552	$-1.812 \cdot 10^{-8}$	$0.419 \qquad 0.419 \qquad 0$
$u\bar{d} \to c\bar{s}$	$1.165 \cdot 10^{-17}$	$5.485 \cdot 10^{-18}$	0.5293	0.9802  0.9802  0
$u\bar{d} \to u\bar{d}$	1.224	1.224	0	1.44   1.44   0

$u\bar{u} \to c\bar{c}$	0.2624	0.2624	0	0.1771	0.1771	0
$u\bar{u} \to u\bar{u}$	-6.896	-6.896	$-1.45 \cdot 10^{-8}$	0.941	0.941	0

## $2.110 \quad cjtQd1Im$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$2.923 \cdot 10^{-15}$	$2.923 \cdot 10^{-15}$	$-3.421 \cdot 10^{-8}$	$3.887 \cdot 10^{-12}$	$3.887 \cdot 10^{-12}$	0		
$t\bar{t} \to d\bar{d}$	$2.976 \cdot 10^{-27}$	$4.817 \cdot 10^{-27}$	-0.6185	$1.093 \cdot 10^{-10}$	$1.093 \cdot 10^{-10}$	0		
$t\bar{t} \to s\bar{s}$	$2.969 \cdot 10^{-24}$	$6.079 \cdot 10^{-24}$	-1.048	$8.118 \cdot 10^{-8}$	$8.118 \cdot 10^{-8}$	0		

### $2.111 \quad cjtQd1Re$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-1.745 \cdot 10^{-11}$	$-1.745 \cdot 10^{-11}$	0	$3.887 \cdot 10^{-12}$	$3.887 \cdot 10^{-12}$	0		
$t\bar{t} \to d\bar{d}$	$-3.82 \cdot 10^{-11}$	$-3.82 \cdot 10^{-11}$	0	$1.093 \cdot 10^{-10}$	$1.093 \cdot 10^{-10}$	0		
$t\bar{t} \to s\bar{s}$	$-3.009 \cdot 10^{-8}$	$-3.009 \cdot 10^{-8}$	0	$8.118 \cdot 10^{-8}$	$8.118 \cdot 10^{-8}$	0		

### $2.112 \quad cjtQd8Im$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	$1.633 \cdot 10^{-14}$	$1.633 \cdot 10^{-14}$	$-6.123 \cdot 10^{-8}$	$1.495 \cdot 10^{-11}$	$1.495 \cdot 10^{-11}$	0
$t\bar{t} \to d\bar{d}$	$1.157 \cdot 10^{-27}$	$-5.016 \cdot 10^{-27}$	5.335	$7.76 \cdot 10^{-12}$	$7.76 \cdot 10^{-12}$	0
$t\bar{t} \to s\bar{s}$	$-2.994 \cdot 10^{-24}$	$-1.296 \cdot 10^{-24}$	0.5672	$2.049 \cdot 10^{-8}$	$2.049 \cdot 10^{-8}$	0

# $2.113 \quad cjtQd8Re$

		interfere	nce	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	$-1.041 \cdot 10^{-10}$	$-1.041 \cdot 10^{-10}$	0	$1.704 \cdot 10^{-11}$	$1.704 \cdot 10^{-11}$	0	
$t\bar{t} \to d\bar{d}$	$-1.498 \cdot 10^{-10}$	$-1.498 \cdot 10^{-10}$	0	$1.563 \cdot 10^{-11}$	$1.563 \cdot 10^{-11}$	0	
$t\bar{t} \to s\bar{s}$	$-4.633 \cdot 10^{-8}$	$-4.633 \cdot 10^{-8}$	0	$3.728 \cdot 10^{-9}$	$3.728 \cdot 10^{-9}$	0	

### 2.114 cju1

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$d\bar{d} \to c\bar{c}$	0.00762	0.00762	$3.543 \cdot 10^{-7}$	0.262	0.262	0	
$u\bar{d} \to u\bar{d}$	-0.1013	-0.1013	$2.963 \cdot 10^{-7}$	1	1	0	
$u\bar{u} \to c\bar{c}$	0.02904	0.02904	$3.788 \cdot 10^{-7}$	1.038	1.038	0	
$u\bar{u} \to u\bar{u}$	-0.03968	-0.03968	$3.528 \cdot 10^{-7}$	3.232	3.232	0	

# 2.115 cju8

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$d\bar{d} \to c\bar{c}$	0.1726	0.1726	0	0.05823	0.05823	0
$u\bar{d} \to u\bar{d}$	-2.541	-2.541	0	0.2222	0.2222	0
$u\bar{u} \to c\bar{c}$	0.6832	0.6832	0	0.2306	0.2306	0
$u\bar{u} \to u\bar{u}$	-0.8673	-0.8673	0	0.7181	0.7181	0

## 2.116 cjuQb1Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-3.193 \cdot 10^{-16}$	$-3.193 \cdot 10^{-16}$	$-6.263 \cdot 10^{-8}$	$3.848 \cdot 10^{-11}$	$3.848 \cdot 10^{-11}$	0		
$b\bar{b} \to u\bar{u}$	$-3.599 \cdot 10^{-28}$	$-4.577 \cdot 10^{-29}$	0.8728	$7.696 \cdot 10^{-11}$	$7.696 \cdot 10^{-11}$	0		

### 2.117 cjuQb1Re

		interfere	ence		square		
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$\bar{b}t \to \bar{d}u$	$-1.901 \cdot 10^{-12}$	$-1.901 \cdot 10^{-12}$	0	$3.848 \cdot 10^{-11}$	$3.848 \cdot 10^{-11}$	0	
$b\bar{b} \to u\bar{u}$	$-3.715 \cdot 10^{-12}$	$-3.715 \cdot 10^{-12}$	0	$7.696 \cdot 10^{-11}$	$7.696 \cdot 10^{-11}$	0	

### $2.118 \quad cjuQb8Im$

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	$1.097 \cdot 10^{-29}$	$1.167 \cdot 10^{-29}$	-0.06395	$8.551 \cdot 10^{-12}$	$8.551 \cdot 10^{-12}$	0	
$b\bar{b} \to u\bar{u}$	$1.052 \cdot 10^{-29}$	$4.908 \cdot 10^{-30}$	0.5333	$1.71 \cdot 10^{-11}$	$1.71 \cdot 10^{-11}$	0	

### 2.119 cjuQb8Re

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$\bar{b}t \to \bar{d}u$	$-2.373 \cdot 10^{-29}$	$-2.373 \cdot 10^{-29}$	0	$8.551 \cdot 10^{-12}$	$8.551 \cdot 10^{-12}$	0	
$b\bar{b} \to u\bar{u}$	$-2.661 \cdot 10^{-14}$	$-2.661 \cdot 10^{-14}$	0	$1.71 \cdot 10^{-11}$	$1.71 \cdot 10^{-11}$	0	

### 2.120 cjujd11Im

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $			
$d\bar{d} \to c\bar{c}$	$7.014 \cdot 10^{-31}$	$9.932 \cdot 10^{-31}$	-0.416	$7.016 \cdot 10^{-15}  7.016 \cdot 10^{-15} \qquad 0$			
$u\bar{d} \to c\bar{s}$	$-2.487 \cdot 10^{-19}$	$-2.487 \cdot 10^{-19}$	$-4.021 \cdot 10^{-8}$	$4.703 \cdot 10^{-16}  4.703 \cdot 10^{-16} \qquad 0$			
$u\bar{d} \to u\bar{d}$	$1.7 \cdot 10^{-34}$	$1.65 \cdot 10^{-34}$	0.02946	$8.51 \cdot 10^{-20}$ $8.51 \cdot 10^{-20}$ 0			

# 2.121 cjujd11Re

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$d\bar{d} \to c\bar{c}$	$2.561 \cdot 10^{-15}$	$2.561 \cdot 10^{-15}$	0	$3.132 \cdot 10^{-17}$	$3.132 \cdot 10^{-17}$	0	
$u\bar{d} \to c\bar{s}$	$-2.647 \cdot 10^{-15}$	$-2.647 \cdot 10^{-15}$	0	$1.565 \cdot 10^{-15}$	$1.565 \cdot 10^{-15}$	0	
$u\bar{d} \to u\bar{d}$	$-1.642 \cdot 10^{-20}$	$-1.642 \cdot 10^{-20}$	0	$7.973 \cdot 10^{-20}$	$7.973 \cdot 10^{-20}$	0	

# 2.122 cjujd1Im

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$d\bar{d} \to c\bar{c}$	$-2.771 \cdot 10^{-30}$	$-6.669 \cdot 10^{-31}$	0.7593	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0	
$u\bar{d} \to c\bar{s}$	$-3.213 \cdot 10^{-18}$	$-3.213 \cdot 10^{-18}$	$-6.224 \cdot 10^{-8}$	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0	
$u\bar{d} \to u\bar{d}$	$-1.939 \cdot 10^{-35}$	$-3.004 \cdot 10^{-35}$	-0.5497	$1.044 \cdot 10^{-19}$	$1.044 \cdot 10^{-19}$	0	

## 2.123 cjujd $1\mathrm{Re}$

		interfere	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$d\bar{d} \to c\bar{c}$	$-3.863 \cdot 10^{-14}$	$-3.863 \cdot 10^{-14}$	0	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0
$u\bar{d} \to c\bar{s}$	$-1.908 \cdot 10^{-14}$	$-1.908 \cdot 10^{-14}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0
$u\bar{d} \to u\bar{d}$	$-1.599 \cdot 10^{-20}$	$-1.599 \cdot 10^{-20}$	0	$8.105 \cdot 10^{-20}$	$8.105 \cdot 10^{-20}$	0

### 2.124 cjujd81Im

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$d\bar{d} \to c\bar{c}$	$-2.604 \cdot 10^{-31}$	$-3.933 \cdot 10^{-31}$	-0.5103	$1.74 \cdot 10^{-15}$	$1.74 \cdot 10^{-15}$	0	
$u\bar{d} \to c\bar{s}$	$-2.339 \cdot 10^{-19}$	$-2.339 \cdot 10^{-19}$	$-8.55 \cdot 10^{-8}$	$4.951 \cdot 10^{-17}$	$4.951 \cdot 10^{-17}$	0	
$u\bar{d} \to u\bar{d}$	$5.437 \cdot 10^{-35}$	$5.387 \cdot 10^{-35}$	0.009287	$1.104 \cdot 10^{-20}$	$1.104 \cdot 10^{-20}$	0	

### 2.125 cjujd $81\mathrm{Re}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$d\bar{d} \to c\bar{c}$	$-8.011 \cdot 10^{-15}$	$-8.011 \cdot 10^{-15}$	0	$7.468 \cdot 10^{-16}$	$7.468 \cdot 10^{-16}$	0	
$u\bar{d} \to c\bar{s}$	$-2.845 \cdot 10^{-15}$	$-2.845 \cdot 10^{-15}$	0	$2.226 \cdot 10^{-16}$	$2.226 \cdot 10^{-16}$	0	
$u\bar{d} \to u\bar{d}$	$5.848 \cdot 10^{-20}$	$5.848 \cdot 10^{-20}$	0	$1.102 \cdot 10^{-20}$	$1.102 \cdot 10^{-20}$	0	

# 2.126 cjujd8 Im

		interfere	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$d\bar{d} \to c\bar{c}$	$-2.466 \cdot 10^{-31}$	$-4.219 \cdot 10^{-31}$	-0.7109	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0
$u\bar{d} \to c\bar{s}$	$-8.765 \cdot 10^{-32}$	$2.63 \cdot 10^{-31}$	4	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0
$u\bar{d} \to u\bar{d}$	$5.437 \cdot 10^{-35}$	$5.387 \cdot 10^{-35}$	0.009287	$1.104 \cdot 10^{-20}$	$1.104 \cdot 10^{-20}$	0

### 2.127 cjujd $8\mathrm{Re}$

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

$d\bar{d} \to c\bar{c}$	$-1.405 \cdot 10^{-15}$	$-1.405 \cdot 10^{-15}$	0	$4.254 \cdot 10^{-15}  4.254 \cdot 10^{-15}$	0
$u\bar{d} \to c\bar{s}$	$-9.161 \cdot 10^{-32}$	$-9.195 \cdot 10^{-32}$	-0.003737	$2.129 \cdot 10^{-15}$ $2.129 \cdot 10^{-15}$	0
$u\bar{d} \to u\bar{d}$	$3.995 \cdot 10^{-20}$	$3.995 \cdot 10^{-20}$	0	$1.101 \cdot 10^{-20}  1.101 \cdot 10^{-20}$	0

# 2.128 cld

		int	erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$d\bar{d} \to e^+e^-$	0.001061	0.001061	$3.769 \cdot 10^{-7}$	0.02496	0.02496	0	
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.005131	0.005131	$3.508 \cdot 10^{-7}$	0.1191	0.1191	0	

## 2.129 cle

		interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\mu^+\mu^- \to \tau^+\tau^-$	0.2276	0.2276	$3.516 \cdot 10^{-7}$	1.784	1.784	0	
$e^+\nu_\mu \to e^+\nu_\mu$	-0.3552	-0.3552	$3.66 \cdot 10^{-7}$	1	1	0	
$e^+\nu_e \to e^+\nu_e$	-0.1462	-0.1462	$4.103 \cdot 10^{-7}$	1	1	0	
$e^+\tau^- \to e^+\tau^-$	-867.6	-867.6	$2.536 \cdot 10^{-7}$	2	2	0	
$e^+e^-  o \mu^+\mu^-$	0.1397	0.1397	$3.58 \cdot 10^{-7}$	1.095	1.095	0	
$e^+e^- \rightarrow e^+e^-$	-0.3895	-0.3895	$3.594 \cdot 10^{-7}$	2.611	2.611	0	

## $2.130 \quad cleQt1Im$

	interference				square		
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{t} \to e^- \bar{\nu}_e$	$2.373 \cdot 10^{-16}$	$2.373 \cdot 10^{-16}$	$-4.214\cdot 10^{-8}$	$7.179 \cdot 10^{-13}$	$7.179 \cdot 10^{-13}$	0	
$t\bar{t} \to \tau^+ \tau^-$	$1.119 \cdot 10^{-21}$	$1.139 \cdot 10^{-21}$	-0.01764	$1.738 \cdot 10^{-5}$	$1.738 \cdot 10^{-5}$	0	

## 2.131 cleQt1Re

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $		
$b\bar{t} \to e^- \bar{\nu}_e$	$1.434 \cdot 10^{-12}$	$1.434 \cdot 10^{-12}$	0	$7.179 \cdot 10^{-13}  7.179 \cdot 10^{-13} \qquad 0$		
$t\bar{t} \to \tau^+ \tau^-$	$3.433 \cdot 10^{-5}$	$3.433 \cdot 10^{-5}$	0	$1.738 \cdot 10^{-5}$ $1.738 \cdot 10^{-5}$ 0		

### $2.132 \quad cleQt3Im$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$b\bar{t} \to e^- \bar{\nu}_e$	$-8.216 \cdot 10^{-16}$	$-8.216 \cdot 10^{-16}$	$-4.868 \cdot 10^{-8}$	$9.197 \cdot 10^{-12}$	$9.197 \cdot 10^{-12}$	0	
$t\bar{t} \to \tau^+ \tau^-$	$-7.027 \cdot 10^{-21}$	$-3.535 \cdot 10^{-21}$	0.4969	0.0001401	0.0001401	0	

### $2.133 \quad {\rm cleQt3Re}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{t} \to e^- \bar{\nu}_e$	$-4.905 \cdot 10^{-12}$	$-4.905 \cdot 10^{-12}$	0	$9.197 \cdot 10^{-12}$	$9.197 \cdot 10^{-12}$	0	
$t\bar{t} \to \tau^+ \tau^-$	$9.669 \cdot 10^{-5}$	$9.669 \cdot 10^{-5}$	$1.034 \cdot 10^{-8}$	0.0001401	0.0001401	0	

### 2.134 clebQIm

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$b\bar{b}  o \mu^+\mu^-$	$-3.675 \cdot 10^{-25}$	$-5.053 \cdot 10^{-25}$	-0.3752	$6.138 \cdot 10^{-8}$	$6.138 \cdot 10^{-8}$	0	
$b\bar{t} \to e^- \bar{\nu}_e$	$-5.916 \cdot 10^{-18}$	$-5.916 \cdot 10^{-18}$	$-5.071 \cdot 10^{-8}$	$7.179 \cdot 10^{-13}$	$7.179 \cdot 10^{-13}$	0	

### 2.135 clebQRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to \mu^+\mu^-$	$-2.979 \cdot 10^{-9}$	$-2.979 \cdot 10^{-9}$	0	$6.138 \cdot 10^{-8}$	$3.138 \cdot 10^{-8}$	0	
$b\bar{t} \to e^- \bar{\nu}_e$	$-3.569 \cdot 10^{-14}$	$-3.569 \cdot 10^{-14}$	0	$7.179 \cdot 10^{-13}$ 7	$1.179 \cdot 10^{-13}$	0	

### 2.136 cledjIm

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$8.253 \cdot 10^{-16}$	$8.253 \cdot 10^{-16}$	$-6.058 \cdot 10^{-8}$	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	0	
$d\bar{d} \rightarrow e^+e^-$	$2.971 \cdot 10^{-44}$	$-1.045 \cdot 10^{-38}$	$3.516\cdot 10^5$	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	0	
$u\bar{d} \to \mu^+ \nu_\mu$	$7.358 \cdot 10^{-21}$	$7.358 \cdot 10^{-21}$	$-5.436 \cdot 10^{-8}$	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	0	

## 2.137 cledjRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-4.929 \cdot 10^{-12}$	$-4.929 \cdot 10^{-12}$	0	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	0	
$d\bar{d} \rightarrow e^+e^-$	$-2.074 \cdot 10^{-21}$	$-2.074 \cdot 10^{-21}$	0	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	0	
$u\bar{d} \rightarrow \mu^+ \nu_\mu$	$-4.397 \cdot 10^{-17}$	$-4.397 \cdot 10^{-17}$	0	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	0	

## 2.138 cleju1Im

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$c\bar{c} \to \mu^+\mu^-$	$-3.596 \cdot 10^{-28}$	$-8.084 \cdot 10^{-28}$	-1.248	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	0	

#### 2.139 cleju1Re

		interfe	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$c\bar{c} \to \mu^+ \mu^-$	$6.596 \cdot 10^{-12}$	$6.596 \cdot 10^{-12}$	0	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	0		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$9.275 \cdot 10^{-10}$	$9.275 \cdot 10^{-10}$	0	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	0		
$u\bar{d} \to \mu^+ \nu_\mu$	$9.475 \cdot 10^{-18}$	$9.475 \cdot 10^{-18}$	0	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	0		

#### 2.140 cleju3Im

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$c\bar{c} \to \mu^+ \mu^-$	$8.394 \cdot 10^{-28}$	$1.521 \cdot 10^{-27}$	-0.8119	$3.268 \cdot 10^{-11}$	$3.268 \cdot 10^{-11}$	0	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-5.994 \cdot 10^{-13}$	$-5.994 \cdot 10^{-13}$	$-6.673 \cdot 10^{-8}$	$6.832 \cdot 10^{-9}$	$6.832 \cdot 10^{-9}$	0	
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-5.127 \cdot 10^{-22}$	$-5.127 \cdot 10^{-22}$	$-7.802 \cdot 10^{-8}$	$2.957 \cdot 10^{-19}$	$2.957 \cdot 10^{-19}$	0	

#### 2.141 cleju3Re

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$c\bar{c} \to \mu^+ \mu^-$	$-2.405 \cdot 10^{-11}$	$-2.405 \cdot 10^{-11}$	0	$4.667 \cdot 10^{-11}$	$4.667 \cdot 10^{-11}$	0	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$2.897 \cdot 10^{-9}$	$2.897 \cdot 10^{-9}$	0	$4.435 \cdot 10^{-9}$	$4.435 \cdot 10^{-9}$	0	
$u\bar{d} \to \mu^+ \nu_{\mu}$	$2.589 \cdot 10^{-17}$	$2.589 \cdot 10^{-17}$	0	$3.439 \cdot 10^{-17}$	$3.439 \cdot 10^{-17}$	0	

# 2.142 clj1

		inte	erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$c\bar{c} \to \mu^+ \mu^-$	-0.01203	-0.01203	$-8.313 \cdot 10^{-8}$	0.05175	0.05175	0	
$d\bar{d} \rightarrow e^+e^-$	0.02762	0.02762	$-1.448 \cdot 10^{-7}$	0.1454	0.1454	0	
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	-0.04911	-0.04911	$-6.109 \cdot 10^{-8}$	0.2103	0.2103	0	
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.0192	0.0192	$-1.562 \cdot 10^{-7}$	0.1008	0.1008	0	

## 2.143 clj3

		interf	erence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
$c\bar{c} \to \mu^+ \mu^-$	0.02101	0.02101	$-4.76 \cdot 10^{-8}$	0.09038  0.09038  0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0.1484	0.1484	$-1.348 \cdot 10^{-7}$	$0.7013 \qquad 0.7013 \qquad 0$
$d\bar{d} \rightarrow e^+e^-$	0.0334	0.0334	$-1.497 \cdot 10^{-7}$	$0.1759 \qquad 0.1759 \qquad 0$
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.01259	0.01259	0	0.05393  0.05393  0
$u\bar{d} \to \mu^+ \nu_{\mu}$	$3.871 \cdot 10^{-5}$	$3.871 \cdot 10^{-5}$	$-1.033 \cdot 10^{-7}$	$0.000183  0.000183 \qquad 0$
$u\bar{u} \rightarrow \nu_e \bar{\nu}_e$	0.003411	0.003411	$-1.466 \cdot 10^{-7}$	0.01791  0.01791  0

## 2.144 cll

		int	erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$\mu^+\mu^- \to \tau^+\tau^-$	0.3857	0.3857	0	2.806	2.806	0		
$\nu_{ au} \bar{\nu}_{ au}  o \nu_{ au} \bar{\nu}_{ au}$	-0.2592	-0.2592	0	3.971	3.971	0		
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	0.4264	0.4264	0	3.083	3.083	0		
$e^+\nu_\mu \to e^+\nu_\mu$	0.834	0.834	$-3.117 \cdot 10^{-7}$	2.495	2.495	0		
$e^+\nu_e \to e^+\nu_e$	0.2286	0.2286	$-1.749 \cdot 10^{-7}$	0.6836	0.6836	0		

$e^+\tau^- \to e^+\tau^-$	-1.375	-1.375	0	2.356	2.356	0
$e^+e^-  o \mu^+\mu^-$	0.005474	0.005474	0	0.03982	0.03982	0
$e^+e^- \rightarrow e^+e^-$	-0.0337	-0.0337	$2.967 \cdot 10^{-8}$	1.273	1.273	0

## 2.145 cll1

		inter	rference		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$\mu^+\mu^- \to \tau^+\tau^-$	0.0017	0.0017	0	0.01236	0.01236	0		
$\nu_{\tau}\bar{\nu}_{\tau} \to \nu_{\tau}\bar{\nu}_{\tau}$	-0.649	-0.649	0	6.102	6.102	0		
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$9.18 \cdot 10^{-5}$	$9.18 \cdot 10^{-5}$	0	0.0006637	0.0006637	0		
$e^+\nu_e \to \mu^+\nu_\mu$	0.2516	0.2516	$-1.192 \cdot 10^{-7}$	1.189	1.189	0		
$e^+\nu_e \to e^+\nu_e$	0.02054	0.02054	$-1.947 \cdot 10^{-7}$	0.06963	0.06963	0		
$e^+\tau^- \to e^+\tau^-$	-900.1	-900.1	$2.333 \cdot 10^{-7}$	3.996	3.996	0		
$e^+e^- \to \mu^+\mu^-$	0.03722	0.03722	0	0.2707	0.2707	0		
$e^+e^- \rightarrow e^+e^-$	-0.1756	-0.1756	$5.694 \cdot 10^{-8}$	3.202	3.202	0		

#### 2.146 clu

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$c\bar{c} \to \mu^+ \mu^-$	-0.0004433	-0.0004433	$3.61 \cdot 10^{-7}$	0.00521	0.00521	0	
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.02677	-0.02677	$3.361 \cdot 10^{-7}$	0.3108	0.3108	0	

#### 2.147 ctBIm

$HH \to z t \bar{t}$	$1.718 \cdot 10^{-6}$	$1.718 \cdot 10^{-6}$	$-4.075 \cdot 10^{-7}$	$9.098 \cdot 10^{-6}$	$9.098 \cdot 10^{-6}$	$3.627 \cdot 10^{-7}$
$HW^+  o \gamma t \bar b$	$-1.346 \cdot 10^{-7}$	$-1.346 \cdot 10^{-7}$	0	$2.346 \cdot 10^{-7}$	$2.346 \cdot 10^{-7}$	$-1.279 \cdot 10^{-7}$
$H\gamma \to t\bar{t}$	$-3.288 \cdot 10^{-17}$	$6.153 \cdot 10^{-18}$	1.187	1.862	1.862	$-1.074 \cdot 10^{-7}$
$Hz \to t\bar{t}$	$4.453 \cdot 10^{-6}$	$4.453 \cdot 10^{-6}$	$1.797 \cdot 10^{-7}$	0.3779	0.3779	$3.705 \cdot 10^{-7}$
$W^+W^-  o Htar t$	$1.647 \cdot 10^{-7}$	$1.647 \cdot 10^{-7}$	0	$1.545 \cdot 10^{-8}$	$1.545 \cdot 10^{-8}$	$3.884 \cdot 10^{-7}$
$b\bar{b}  o t\bar{t}$	$-1.461 \cdot 10^{-18}$	$-1.961 \cdot 10^{-18}$	-0.3426	0.000492	0.000492	$3.659 \cdot 10^{-7}$
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$2.096 \cdot 10^{-19}$	$-2.06 \cdot 10^{-19}$	1.983	0.000619	0.000619	$3.554 \cdot 10^{-7}$
$t\bar{t} \to \tau^+ \tau^-$	$-6.81 \cdot 10^{-19}$	$-1.404 \cdot 10^{-18}$	-1.061	0.001609	0.001609	$3.728 \cdot 10^{-7}$
$t\bar{t} \to c\bar{c}$	$-7.74 \cdot 10^{-19}$	$1.389 \cdot 10^{-19}$	1.179	0.00178	0.00178	$3.933 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	$3.968 \cdot 10^{-20}$	$-9.203 \cdot 10^{-19}$	24.19	0.001004	0.001004	$2.987 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	$1.452 \cdot 10^{-18}$	$5.421 \cdot 10^{-19}$	0.6266	0.0008982	0.0008982	$3.563 \cdot 10^{-7}$
$t \bar t  o t \bar t$	$-1.07 \cdot 10^{-17}$	$-5.154 \cdot 10^{-18}$	0.5183	0.0301	0.0301	$3.323 \cdot 10^{-7}$

## **2.148** ctBRe

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z t \bar t$	$-2.594 \cdot 10^{-6}$	$-2.594 \cdot 10^{-6}$	$-4.24 \cdot 10^{-7}$	$2.271 \cdot 10^{-5}$	$2.271 \cdot 10^{-5}$	$3.523 \cdot 10^{-7}$		
$HW^+ \to \gamma t \bar{b}$	$-2.974 \cdot 10^{-6}$	$-2.974 \cdot 10^{-6}$	$6.725 \cdot 10^{-8}$	$1.089 \cdot 10^{-6}$	$1.089 \cdot 10^{-6}$	$-1.837 \cdot 10^{-7}$		
$H\gamma \to t\bar{t}$	0.31	0.31	$6.452 \cdot 10^{-8}$	2.4	2.4	$-1.25 \cdot 10^{-7}$		
Hz  o t ar t	-0.02135	-0.02135	$-3.746 \cdot 10^{-7}$	0.8205	0.8205	$3.656 \cdot 10^{-7}$		
$W^+W^-  o H t \bar t$	$-6.03 \cdot 10^{-7}$	$-6.03 \cdot 10^{-7}$	$-1.327 \cdot 10^{-7}$	$3.923 \cdot 10^{-8}$	$3.923 \cdot 10^{-8}$	$4.079 \cdot 10^{-7}$		
$b\bar{b} \to t\bar{t}$	0.003605	0.003605	$5.547 \cdot 10^{-8}$	0.00122	0.00122	$4.1 \cdot 10^{-7}$		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0002618	-0.0002618	$1.031 \cdot 10^{-6}$	0.0004987	0.0004987	$3.609 \cdot 10^{-7}$		
$t\bar{t} \to \tau^+ \tau^-$	-0.00216	-0.00216	$4.167 \cdot 10^{-7}$	0.003296	0.003296	$3.641 \cdot 10^{-7}$		
$t\bar{t} \to c\bar{c}$	-0.001206	-0.001206	$4.976 \cdot 10^{-7}$	0.001099	0.001099	$3.64 \cdot 10^{-7}$		
$t\bar{t} \to d\bar{d}$	0.0006215	0.0006215	$-5.792 \cdot 10^{-7}$	0.0004245	0.0004245	$3.769 \cdot 10^{-7}$		
$t\bar{t} \to s\bar{s}$	$-7.393 \cdot 10^{-5}$	$-7.393 \cdot 10^{-5}$	$3.706 \cdot 10^{-6}$	0.001127	0.001127	$3.548 \cdot 10^{-7}$		
$t\bar{t} \to t\bar{t}$	0.02078	0.02078	$9.627 \cdot 10^{-8}$	0.01916	0.01916	$3.653 \cdot 10^{-7}$		

## 2.149 ctGIm

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$b\bar{b} \to t\bar{t}$	$7.856 \cdot 10^{-18}$	$8.561 \cdot 10^{-18}$	-0.08971	0.01504	0.01504	0
$gg \to t\bar{t}$	$-8.296 \cdot 10^{-18}$	$-8.296 \cdot 10^{-18}$	0	0.08644	0.08644	0
$t\bar{t} \to c\bar{c}$	$2.616 \cdot 10^{-23}$	$1.536 \cdot 10^{-23}$	0.4128	0.03013	0.03013	0
$t\bar{t} \to d\bar{d}$	$3.676 \cdot 10^{-24}$	$-2.819 \cdot 10^{-28}$	1	0.0329	0.0329	0
$t\bar{t} \to s\bar{s}$	$7.864 \cdot 10^{-25}$	$5.933 \cdot 10^{-24}$	-6.544	0.03614	0.03614	0
$t\bar{t} \to t\bar{t}$	$-6.316 \cdot 10^{-17}$	$-4.78 \cdot 10^{-17}$	0.2432	0.2744	0.2744	0

### 2.150 ctGRe

		$in^{1}$	terference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o t\bar{t}$	-0.1246	-0.1246	0	0.01662	0.01662	0	
$gg \to t\bar{t}$	-1.187	-1.187	0	0.1384	0.1384	0	
$t\bar{t} \to c\bar{c}$	-0.1986	-0.1986	0	0.0471	0.0471	0	
$t\bar{t} \to d\bar{d}$	-0.1986	-0.1986	0	0.04689	0.04689	0	
$t\bar{t} \to s\bar{s}$	-0.1986	-0.1986	0	0.03795	0.03795	0	
$t\bar{t} \to t\bar{t}$	-0.1374	-0.1374	0	0.1517	0.1517	0	

#### 2.151 ctHIm

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to H t \bar t$	$1.601 \cdot 10^{-5}$	$1.601 \cdot 10^{-5}$	0	$5.286 \cdot 10^{-5}$	$5.286 \cdot 10^{-5}$	0		
$HH  o W^+ \bar t b$	$9.777 \cdot 10^{-7}$	$9.777 \cdot 10^{-7}$	$-1.125 \cdot 10^{-7}$	$1.486 \cdot 10^{-5}$	$1.486 \cdot 10^{-5}$	$-6.728 \cdot 10^{-8}$		
$HH \to z t \bar{t}$	$1.742 \cdot 10^{-7}$	$1.742 \cdot 10^{-7}$	$-1.148 \cdot 10^{-7}$	$3.625 \cdot 10^{-6}$	$3.625 \cdot 10^{-6}$	$-8.275 \cdot 10^{-8}$		

$HW^+ \to \gamma t \bar{b}$	$-1.34 \cdot 10^{-8}$	$-1.34 \cdot 10^{-8}$	$2.239 \cdot 10^{-7}$	$4.372 \cdot 10^{-10}$	$4.372 \cdot 10^{-10}$	$2.059 \cdot 10^{-7}$
$HW^-  o \bar{t}b$	-0.002504	-0.002504	0	0.05362	0.05362	0
$H\gamma \to t\bar{t}$	$1.306 \cdot 10^{-18}$	$-2.342 \cdot 10^{-19}$	1.179	0.002037	0.002037	$2.454 \cdot 10^{-7}$
$Hz \to t\bar{t}$	-0.0002125	-0.0002125	$-6.118 \cdot 10^{-7}$	0.06737	0.06737	0
$W^+W^- \to Hb\bar{b}$	$3.321 \cdot 10^{-7}$	$3.321 \cdot 10^{-7}$	$-9.034 \cdot 10^{-8}$	$1.331 \cdot 10^{-8}$	$1.331 \cdot 10^{-8}$	0
$W^+W^-  o H t \bar t$	$-1.55\cdot10^{-7}$	$-1.55 \cdot 10^{-7}$	$-1.935 \cdot 10^{-7}$	$5.622 \cdot 10^{-7}$	$5.622 \cdot 10^{-7}$	$1.779 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	$1.372 \cdot 10^{-21}$	$9.662 \cdot 10^{-22}$	0.2958	$5.466 \cdot 10^{-7}$	$5.466 \cdot 10^{-7}$	0
$t\bar{t} \to \tau^+ \tau^-$	$4.172 \cdot 10^{-23}$	$1.175 \cdot 10^{-22}$	-1.815	$3.492 \cdot 10^{-8}$	$3.492 \cdot 10^{-8}$	0
$t\bar{t} \to c\bar{c}$	$-1.336 \cdot 10^{-22}$	$-1.305 \cdot 10^{-22}$	0.02338	$5.351 \cdot 10^{-8}$	$5.351 \cdot 10^{-8}$	0
$t\bar{t} \to d\bar{d}$	$-3.562 \cdot 10^{-28}$	$7.208 \cdot 10^{-28}$	3.024	$7.236 \cdot 10^{-13}$	$7.236 \cdot 10^{-13}$	0
$t\bar{t} \to s\bar{s}$	$1.066 \cdot 10^{-25}$	$4.132 \cdot 10^{-25}$	-2.875	$2.87 \cdot 10^{-10}$	$2.87 \cdot 10^{-10}$	0
$t\bar{t} \to t\bar{t}$	$-7.14 \cdot 10^{-20}$	$1.194 \cdot 10^{-18}$	17.72	0.004852	0.004852	0

## 2.152 ctHRe

		interfere	ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o Ht ar{t}$	$3.678 \cdot 10^{-5}$	$3.678 \cdot 10^{-5}$	0	$1.84 \cdot 10^{-5}$	$1.84 \cdot 10^{-5}$	0		
$HH \to W^+ \bar{t} b$	$-2.008 \cdot 10^{-7}$	$-2.008 \cdot 10^{-7}$	$1.992 \cdot 10^{-7}$	$2.593 \cdot 10^{-6}$	$2.593 \cdot 10^{-6}$	$-3.856 \cdot 10^{-8}$		
$HH \to zt\bar{t}$	$1.142 \cdot 10^{-6}$	$1.142 \cdot 10^{-6}$	$8.758 \cdot 10^{-8}$	$9.21 \cdot 10^{-7}$	$9.21\cdot10^{-7}$	$-1.412 \cdot 10^{-7}$		
$HW^+  o \gamma t \bar{b}$	$-3.17 \cdot 10^{-7}$	$-3.17 \cdot 10^{-7}$	$1.893 \cdot 10^{-7}$	$9.362 \cdot 10^{-9}$	$9.362 \cdot 10^{-9}$	$1.923 \cdot 10^{-7}$		
$HW^-  o \bar{t}b$	0.09548	0.09548	$2.095 \cdot 10^{-8}$	0.05204	0.05204	0		
$H\gamma \to t\bar{t}$	-0.05036	-0.05036	$2.581 \cdot 10^{-7}$	0.001539	0.001539	$2.6 \cdot 10^{-7}$		
$Hz \to t\bar{t}$	-0.1656	-0.1656	$-1.812 \cdot 10^{-7}$	0.04417	0.04417	$-2.264 \cdot 10^{-8}$		
$W^+W^- \to H b \bar b$	$9.427 \cdot 10^{-7}$	$9.427 \cdot 10^{-7}$	$-2.016 \cdot 10^{-7}$	$2.287 \cdot 10^{-8}$	$2.287 \cdot 10^{-8}$	$-4.372 \cdot 10^{-8}$		
$W^+W^-  o H t \bar t$	$-1.509 \cdot 10^{-6}$	$-1.509 \cdot 10^{-6}$	$-1.326 \cdot 10^{-7}$	$1.193 \cdot 10^{-6}$	$1.193 \cdot 10^{-6}$	0		
$b\bar{b}  o t\bar{t}$	$-9.971 \cdot 10^{-6}$	$-9.971 \cdot 10^{-6}$	0	$4.813 \cdot 10^{-7}$	$4.813 \cdot 10^{-7}$	0		
$t\bar{t} \to \tau^+ \tau^-$	$-1.006 \cdot 10^{-6}$	$-1.006 \cdot 10^{-6}$	0	$3.099 \cdot 10^{-8}$	$3.099 \cdot 10^{-8}$	0		
$t\bar{t} \to c\bar{c}$	$-1.542 \cdot 10^{-6}$	$-1.542 \cdot 10^{-6}$	0	$4.749 \cdot 10^{-8}$	$4.749 \cdot 10^{-8}$	0		

$t\bar{t} \to d\bar{d}$	$-2.112 \cdot 10^{-11}  -2.112 \cdot 10^{-1}$	-11 0	$6.421 \cdot 10^{-13}  6.421 \cdot 10^{-13}$	0
$t\bar{t} \to s\bar{s}$	$-8.394 \cdot 10^{-9}$ $-8.394 \cdot 10^{-9}$	-9 0	$2.547 \cdot 10^{-10}$ $2.547 \cdot 10^{-10}$	0
$t\bar{t} \to t\bar{t}$	0.4769   0.4769	$-2.097 \cdot 10^{-8}$	$0.01115 \qquad 0.01115$	0

#### 2.153 ctWIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^+ \bar{t} b$	$-4.574 \cdot 10^{-6}$	$-4.574 \cdot 10^{-6}$	$-4.372 \cdot 10^{-8}$	$2.027 \cdot 10^{-5}$	$2.027 \cdot 10^{-5}$	$-4.933 \cdot 10^{-8}$		
$HH \to zt\bar{t}$	$-5.866 \cdot 10^{-8}$	$-5.866 \cdot 10^{-8}$	$-3.75 \cdot 10^{-7}$	0.0001156	0.0001156	$-1.731 \cdot 10^{-7}$		
$HW^+  o \gamma t \bar{b}$	$6.8 \cdot 10^{-7}$	$6.8 \cdot 10^{-7}$	$2.647 \cdot 10^{-7}$	$2.576 \cdot 10^{-6}$	$2.576 \cdot 10^{-6}$	$3.494 \cdot 10^{-7}$		
$HW^-  o \bar{t}b$	$9.506 \cdot 10^{-5}$	$9.506 \cdot 10^{-5}$	$-6.312 \cdot 10^{-8}$	2.234	2.234	0		
$H\gamma \to t\bar{t}$	$3.109 \cdot 10^{-17}$	$-3.223 \cdot 10^{-17}$	2.037	0.5734	0.5734	$3.663 \cdot 10^{-7}$		
$Hz \to t\bar{t}$	-0.002388	-0.002388	$-4.188 \cdot 10^{-8}$	0.8323	0.8323	$-1.081 \cdot 10^{-7}$		
$W^+W^- \to H b \bar b$	$2.293 \cdot 10^{-6}$	$2.293 \cdot 10^{-6}$	$-1.308 \cdot 10^{-7}$	$9.262 \cdot 10^{-6}$	$9.262 \cdot 10^{-6}$	0		
$W^+W^-  o H t \bar t$	$5.422 \cdot 10^{-7}$	$5.422 \cdot 10^{-7}$	$-1.476 \cdot 10^{-7}$	$3.157 \cdot 10^{-5}$	$3.157 \cdot 10^{-5}$	$3.168 \cdot 10^{-8}$		
$\bar{b}t \to \bar{d}u$	$-3.57 \cdot 10^{-19}$	$2.474 \cdot 10^{-18}$	7.928	0.007172	0.007172	$-1.116 \cdot 10^{-7}$		
$b\bar{b}  o t\bar{t}$	$-4.017 \cdot 10^{-17}$	$-5.064 \cdot 10^{-17}$	-0.2607	0.005091	0.005091	$-1.179 \cdot 10^{-7}$		
$b\bar{t} \to e^-\bar{\nu}_e$	$6.607 \cdot 10^{-19}$	$9.016 \cdot 10^{-20}$	0.8635	0.0007642	0.0007642	$-1.047 \cdot 10^{-7}$		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$1.939 \cdot 10^{-19}$	$-8.352 \cdot 10^{-19}$	5.308	0.0009369	0.0009369	$-1.067 \cdot 10^{-7}$		
$t\bar{t} \to \tau^+ \tau^-$	$3.994 \cdot 10^{-18}$	$7.757 \cdot 10^{-19}$	0.8058	0.002013	0.002013	$-1.49 \cdot 10^{-7}$		
$t\bar{t} \to c\bar{c}$	$2.582 \cdot 10^{-20}$	$3.908 \cdot 10^{-20}$	-0.5134	0.006068	0.006068	$-1.154 \cdot 10^{-7}$		
$t\bar{t}  o d\bar{d}$	$1.457 \cdot 10^{-19}$	$-7.503 \cdot 10^{-18}$	52.5	0.00605	0.00605	$-1.157 \cdot 10^{-7}$		
$t\bar{t} \to s\bar{s}$	$-9.046 \cdot 10^{-18}$	$-5.725 \cdot 10^{-18}$	0.3672	0.004601	0.004601	$-1.087 \cdot 10^{-7}$		
$t\bar{t} \to t\bar{t}$	$-3.026 \cdot 10^{-17}$	$-3.622 \cdot 10^{-18}$	0.8803	0.02391	0.02391	$-1.255 \cdot 10^{-7}$		

#### 2.154 ctWRe

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$HH  o W^+ \bar t b$	$1.937 \cdot 10^{-5}$	$1.937 \cdot 10^{-5}$	$-5.164 \cdot 10^{-8}$	$1.292 \cdot 10^{-5}$	$1.292 \cdot 10^{-5}$	$-7.741 \cdot 10^{-8}$
$HH \to z t \bar{t}$	$4.699 \cdot 10^{-6}$	$4.699 \cdot 10^{-6}$	$-6.384 \cdot 10^{-7}$	$7.451 \cdot 10^{-5}$	$7.451 \cdot 10^{-5}$	$-1.208 \cdot 10^{-7}$
$HW^+  o \gamma t \bar{b}$	$-1.342 \cdot 10^{-6}$	$-1.342 \cdot 10^{-6}$	$2.981 \cdot 10^{-7}$	$6.891 \cdot 10^{-6}$	$6.891 \cdot 10^{-6}$	$2.612 \cdot 10^{-7}$
$HW^- \to \bar{t}b$	0.04608	0.04608	$2.17 \cdot 10^{-8}$	0.8744	0.8744	$-1.144 \cdot 10^{-8}$
$H\gamma \to t\bar{t}$	0.1711	0.1711	$2.922 \cdot 10^{-7}$	0.7313	0.7313	$3.556 \cdot 10^{-7}$
$Hz \to t\bar{t}$	0.03868	0.03868	$-6.463 \cdot 10^{-7}$	2.693	2.693	$-1.114 \cdot 10^{-7}$
$W^+W^-  o Hbar b$	$9.109 \cdot 10^{-7}$	$9.109 \cdot 10^{-7}$	$3.293 \cdot 10^{-8}$	$1.82 \cdot 10^{-6}$	$1.82 \cdot 10^{-6}$	$5.494 \cdot 10^{-8}$
$W^+W^-  o Ht\bar{t}$	$-5.613 \cdot 10^{-5}$	$-5.613 \cdot 10^{-5}$	$-1.781 \cdot 10^{-8}$	0.0001142	0.0001142	0
$\bar{b}t \to \bar{d}u$	-0.00705	-0.00705	$-1.702 \cdot 10^{-7}$	0.01289	0.01289	$-1.551 \cdot 10^{-7}$
$b\bar{b}  o t\bar{t}$	-0.001029	-0.001029	$2.236 \cdot 10^{-6}$	0.07719	0.07719	$-1.166 \cdot 10^{-7}$
$b\bar{t} \to e^- \bar{\nu}_e$	$-1.084 \cdot 10^{-5}$	$-1.084 \cdot 10^{-5}$	$-9.224 \cdot 10^{-8}$	$3.363 \cdot 10^{-5}$	$3.363 \cdot 10^{-5}$	$-1.189 \cdot 10^{-7}$
$t\bar{t}  ightarrow  u_{\mu} \bar{ u}_{\mu}$	0.0004742	0.0004742	$8.225 \cdot 10^{-7}$	0.001637	0.001637	$-1.222 \cdot 10^{-7}$
$t\bar{t} \to \tau^+ \tau^-$	-0.001743	-0.001743	$5.739 \cdot 10^{-8}$	0.00218	0.00218	$-9.176 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	-0.001467	-0.001467	$2.044 \cdot 10^{-7}$	0.001928	0.001928	$-1.037 \cdot 10^{-7}$
$t\bar{t} \to d\bar{d}$	-0.007625	-0.007625	$-1.967 \cdot 10^{-7}$	0.002514	0.002514	$-1.193 \cdot 10^{-7}$
$t\bar{t} \to s\bar{s}$	-0.001786	-0.001786	$-3.92 \cdot 10^{-7}$	0.006675	0.006675	$-1.199 \cdot 10^{-7}$
$t\bar{t} \to t\bar{t}$	0.02268	0.02268	$-1.323 \cdot 10^{-7}$	0.02778	0.02778	$-1.08 \cdot 10^{-7}$

#### 2.155 ctb1

#### 2.156 ctb8

b ar b  o t ar t	0.1695	0 1695	0	0.05058	0.05058	0
$00 \rightarrow \iota\iota$	0.1090	0.1099	U	0.0000	0.00000	U

### $2.157 \quad {\rm ctd} 1$

		interfe	erence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$t\bar{t} \to d\bar{d}$	-0.003079	-0.003079	$3.573 \cdot 10^{-7}$	0.04663	0.04663	0	
$t\bar{t} \to s\bar{s}$	-0.0007423	-0.0007423	$3.637 \cdot 10^{-7}$	0.005691	0.005691	0	

## $2.158 \quad ctd8$

		in	nterference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$t\bar{t} \to d\bar{d}$	0.05036	0.05036	0	0.01036	0.01036	0	
$t\bar{t} \to s\bar{s}$	0.0234	0.0234	0	0.001265	0.001265	0	

#### 2.159 cte

		terference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to \tau^+ \tau^-$	-0.0484	-0.0484	$3.513 \cdot 10^{-7}$	0.2803	0.2803	0

## $\mathbf{2.160}\quad\mathbf{ctj1}$

		erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to c\bar{c}$	0.01395	0.01395	$1.434 \cdot 10^{-7}$	0.2655	0.2655	0
$t\bar{t} \to d\bar{d}$	0.002733	0.002733	$1.427 \cdot 10^{-6}$	0.3038	0.3038	0

 $t\bar{t} \to s\bar{s}$  0.01045 0.01045 6.701 · 10<sup>-7</sup> 0.5691 0.5691 0

#### $2.161 \quad ctj8$

			interference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$t\bar{t} \to c\bar{c}$	0.6575	0.6575	0	0.2153	0.2153	0		
$t\bar{t} \to d\bar{d}$	0.0229	0.0229	0	0.001096	0.001096	0		
$t \bar t  o s \bar s$	0.3486	0.3486	0	0.111	0.111	0		

#### 2.162 ctl

		inter	rference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$t \bar t  o  u_\mu ar u_\mu$	0.00177	0.00177	$-2.26 \cdot 10^{-7}$	0.001452	0.001452	0	
$t\bar{t} \to \tau^+ \tau^-$	-0.004359	-0.004359	$1.377 \cdot 10^{-7}$	0.02405	0.02405	0	

#### 2.163 ctt

		nterference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to t\bar{t}$	-5.684	-5.684	$3.518 \cdot 10^{-8}$	17.53	17.53	0

#### 2.164 ctu1

## 2.165 ctu8

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$t\bar{t} \to c\bar{c}$	0.194	0.194	0	0.05884	0.05884	0	

### 2.166 cuBIm

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to zc\bar{c}$	$-7.343 \cdot 10^{-13}$	$-7.343 \cdot 10^{-13}$	$1.321 \cdot 10^{-6}$	$3.98 \cdot 10^{-11}$	$3.98 \cdot 10^{-11}$	$3.517 \cdot 10^{-7}$	
$HW^+  o \gamma u \bar{d}$	$-5.104 \cdot 10^{-17}$	$-5.104 \cdot 10^{-17}$	$-1.959 \cdot 10^{-8}$	$2.551 \cdot 10^{-17}$	$2.551 \cdot 10^{-17}$	$-2.352 \cdot 10^{-7}$	
$H\gamma \to c\bar{c}$	$7.845 \cdot 10^{-22}$	$7.84 \cdot 10^{-22}$	0.000692	$5.471 \cdot 10^{-5}$	$5.471 \cdot 10^{-5}$	$-1.097 \cdot 10^{-7}$	
$Hz \to u\bar{u}$	$1.598 \cdot 10^{-14}$	$1.598 \cdot 10^{-14}$	$1.877 \cdot 10^{-7}$	$4.252 \cdot 10^{-11}$	$4.252 \cdot 10^{-11}$	$3.528 \cdot 10^{-7}$	
$W^+W^-  o Hc\bar{c}$	$1.83 \cdot 10^{-10}$	$1.83 \cdot 10^{-10}$	$-5.465 \cdot 10^{-8}$	$8.9 \cdot 10^{-13}$	$8.9 \cdot 10^{-13}$	$1.461 \cdot 10^{-7}$	
$b\bar{b} \to u\bar{u}$	$1.195 \cdot 10^{-30}$	$9.838 \cdot 10^{-30}$	-7.233	$1.625 \cdot 10^{-13}$	$1.625 \cdot 10^{-13}$	$3.691 \cdot 10^{-7}$	
$c\bar{c} \to \mu^+ \mu^-$	$6.835 \cdot 10^{-23}$	$1.129 \cdot 10^{-22}$	-0.6522	$1.647 \cdot 10^{-7}$	$1.647 \cdot 10^{-7}$	$3.643 \cdot 10^{-7}$	
$d\bar{d} \to c\bar{c}$	$-3.848 \cdot 10^{-24}$	$8.733 \cdot 10^{-24}$	3.27	$5.355 \cdot 10^{-8}$	$5.355 \cdot 10^{-8}$	$3.548 \cdot 10^{-7}$	
$t\bar{t} \to c\bar{c}$	$4.595 \cdot 10^{-22}$	$-2.369 \cdot 10^{-22}$	1.515	$1.117 \cdot 10^{-7}$	$1.117 \cdot 10^{-7}$	$3.582 \cdot 10^{-7}$	
$u\bar{d} \to u\bar{d}$	$-2.741 \cdot 10^{-25}$	$-2.736 \cdot 10^{-25}$	0.00164	$8.756 \cdot 10^{-13}$	$8.756 \cdot 10^{-13}$	$3.655 \cdot 10^{-7}$	
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-3.185 \cdot 10^{-29}$	$2.93 \cdot 10^{-28}$	10.2	$1.003 \cdot 10^{-13}$	$1.003 \cdot 10^{-13}$	$3.988 \cdot 10^{-7}$	
$u\bar{u} \to c\bar{c}$	$-7.445 \cdot 10^{-24}$	$-5.454 \cdot 10^{-24}$	0.2674	$6.38 \cdot 10^{-8}$	$6.38 \cdot 10^{-8}$	$3.605 \cdot 10^{-7}$	
$u\bar{u} \to u\bar{u}$	$2.168 \cdot 10^{-27}$	$-6.424 \cdot 10^{-28}$	1.296	$4.66 \cdot 10^{-12}$	$4.66 \cdot 10^{-12}$	$3.434 \cdot 10^{-7}$	

## 2.167 cuBRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$HH \to z c \bar{c}$	$1.413 \cdot 10^{-10}$	$1.413 \cdot 10^{-10}$	$-4.246 \cdot 10^{-7}$	$8.292 \cdot 10^{-11}$	$8.292 \cdot 10^{-11}$	$3.618 \cdot 10^{-7}$	

$HW^+ \to \gamma u \bar{d}$	$-2.724 \cdot 10^{-16}$	$-2.724 \cdot 10^{-16}$	0	$2.185 \cdot 10^{-17}$	$2.185 \cdot 10^{-17}$	$-2.288 \cdot 10^{-7}$
$H\gamma \to c\bar{c}$	$9.178 \cdot 10^{-10}$	$9.178 \cdot 10^{-10}$	$7.627 \cdot 10^{-8}$	0.0001004	0.0001004	$-1.991 \cdot 10^{-7}$
$Hz \to u\bar{u}$	$2.466 \cdot 10^{-12}$	$2.466 \cdot 10^{-12}$	$-4.056 \cdot 10^{-7}$	$4.249 \cdot 10^{-12}$	$4.249 \cdot 10^{-12}$	$3.765 \cdot 10^{-7}$
$W^+W^-  o Hc\bar{c}$	$-8.618 \cdot 10^{-12}$	$-8.618 \cdot 10^{-12}$	$3.481 \cdot 10^{-8}$	$3.226 \cdot 10^{-13}$	$3.226 \cdot 10^{-13}$	$2.79 \cdot 10^{-7}$
$b\bar{b} \to u\bar{u}$	$-2.321 \cdot 10^{-14}$	$-2.321 \cdot 10^{-14}$	$1.723 \cdot 10^{-6}$	$1.238 \cdot 10^{-13}$	$1.238 \cdot 10^{-13}$	$3.232 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	$-2.168 \cdot 10^{-7}$	$-2.168 \cdot 10^{-7}$	$3.69 \cdot 10^{-7}$	$1.846 \cdot 10^{-8}$	$1.846 \cdot 10^{-8}$	$3.793 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	$7.787 \cdot 10^{-9}$	$7.787 \cdot 10^{-9}$	$-2.029 \cdot 10^{-6}$	$5.805 \cdot 10^{-8}$	$5.805 \cdot 10^{-8}$	$3.618 \cdot 10^{-7}$
$t\bar{t} \to c\bar{c}$	$8.203 \cdot 10^{-7}$	$8.203 \cdot 10^{-7}$	$1.585 \cdot 10^{-7}$	$2.886 \cdot 10^{-8}$	$2.886 \cdot 10^{-8}$	$3.465 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	$-1.903 \cdot 10^{-13}$	$-1.903 \cdot 10^{-13}$	$1.577 \cdot 10^{-7}$	$3.291 \cdot 10^{-13}$	$3.291 \cdot 10^{-13}$	$3.646 \cdot 10^{-7}$
$u\bar{u} \to \nu_e \bar{\nu}_e$	$5.253 \cdot 10^{-14}$	$5.253 \cdot 10^{-14}$	$-4.759 \cdot 10^{-7}$	$1.012 \cdot 10^{-13}$	$1.012 \cdot 10^{-13}$	$3.954 \cdot 10^{-7}$
$u\bar{u} \to c\bar{c}$	$-1.892 \cdot 10^{-7}$	$-1.892 \cdot 10^{-7}$	$3.7 \cdot 10^{-7}$	$1.753 \cdot 10^{-7}$	$1.753 \cdot 10^{-7}$	$3.993 \cdot 10^{-7}$
$u\bar{u} \to u\bar{u}$	$-1.521 \cdot 10^{-11}$	$-1.521 \cdot 10^{-11}$	$1.972 \cdot 10^{-7}$	$1.061 \cdot 10^{-12}$	$1.061 \cdot 10^{-12}$	$3.77 \cdot 10^{-7}$

### 2.168 cuGIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to u\bar{u}$	$-8.835 \cdot 10^{-29}$	$-7.818 \cdot 10^{-29}$	0.1151	$4.527 \cdot 10^{-12}$	$4.527 \cdot 10^{-12}$	0		
$d\bar{d} \to c\bar{c}$	$6.015 \cdot 10^{-22}$	$6.081 \cdot 10^{-22}$	-0.011	$2.123 \cdot 10^{-6}$	$2.123 \cdot 10^{-6}$	0		
$gg \to u\bar{u}$	$-1.732 \cdot 10^{-27}$	$-1.732 \cdot 10^{-27}$	0	$1.398 \cdot 10^{-11}$	$1.398 \cdot 10^{-11}$	0		
$t\bar{t} \to c\bar{c}$	$4.676 \cdot 10^{-23}$	$2.448 \cdot 10^{-23}$	0.4766	$3.816 \cdot 10^{-7}$	$3.816 \cdot 10^{-7}$	0		
$u\bar{d} \to u\bar{d}$	$2.739 \cdot 10^{-26}$	$2.922 \cdot 10^{-26}$	-0.06695	$1.239 \cdot 10^{-11}$	$1.239 \cdot 10^{-11}$	0		
$u\bar{u} \to c\bar{c}$	$2.435 \cdot 10^{-22}$	$1.714 \cdot 10^{-22}$	0.2959	$1.904 \cdot 10^{-6}$	$1.904 \cdot 10^{-6}$	0		
$u\bar{u} \to u\bar{u}$	$2.733 \cdot 10^{-27}$	$4.214 \cdot 10^{-27}$	-0.5418	$5.793 \cdot 10^{-12}$	$5.793 \cdot 10^{-12}$	0		

### **2.169** cuGRe

$b\bar{b} \to u\bar{u}$	$-2.992 \cdot 10^{-11}$	$-2.992 \cdot 10^{-11}$	0	$4.527 \cdot 10^{-12}$	$4.527 \cdot 10^{-12}$	0
$d\bar{d} \to c\bar{c}$	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$2.123 \cdot 10^{-6}$	$2.123 \cdot 10^{-6}$	0
$gg \to u\bar{u}$	$-4.528 \cdot 10^{-11}$	$-4.528 \cdot 10^{-11}$	0	$1.398 \cdot 10^{-11}$	$1.398 \cdot 10^{-11}$	0
$t\bar{t} \to c\bar{c}$	$-1.159 \cdot 10^{-5}$	$-1.159 \cdot 10^{-5}$	0	$3.817 \cdot 10^{-7}$	$3.817 \cdot 10^{-7}$	0
$u\bar{d} \to u\bar{d}$	$-3.135 \cdot 10^{-11}$	$-3.135 \cdot 10^{-11}$	0	$1.239 \cdot 10^{-11}$	$1.239 \cdot 10^{-11}$	0
$u\bar{u} \to c\bar{c}$	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$1.904 \cdot 10^{-6}$	$1.904 \cdot 10^{-6}$	0
$u\bar{u} \to u\bar{u}$	$-1.011 \cdot 10^{-10}$	$-1.011 \cdot 10^{-10}$	0	$5.793 \cdot 10^{-12}$	$5.793 \cdot 10^{-12}$	0

#### 2.170 cuHIm

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to Hu\bar{u}$	$-9.449 \cdot 10^{-25}$	$-9.449 \cdot 10^{-25}$	0	$2.454 \cdot 10^{-16}$	$2.454 \cdot 10^{-16}$	0	
$HH \to W^- u \bar{d}$	$-2.917 \cdot 10^{-16}$	$-2.917 \cdot 10^{-16}$	$-1.371 \cdot 10^{-7}$	$3.764 \cdot 10^{-16}$	$3.764 \cdot 10^{-16}$	$-2.657 \cdot 10^{-8}$	
$HH \to zc\bar{c}$		$2.89 \cdot 10^{-10}$	0	$1.379 \cdot 10^{-10}$	$1.379 \cdot 10^{-10}$	$-2.9 \cdot 10^{-7}$	
$HW^+  o \gamma u \bar{d}$	$-2.719 \cdot 10^{-18}$	$-2.719 \cdot 10^{-18}$	$2.207 \cdot 10^{-7}$	$1.171 \cdot 10^{-18}$	$1.171 \cdot 10^{-18}$	$2.561 \cdot 10^{-7}$	
$HW^+ \to u\bar{d}$	$5.122 \cdot 10^{-14}$	$5.122 \cdot 10^{-14}$	$-5.858 \cdot 10^{-8}$	$9.631 \cdot 10^{-12}$	$9.631 \cdot 10^{-12}$	0	
$H\gamma \to c\bar{c}$	$4.235 \cdot 10^{-22}$	$2.118 \cdot 10^{-22}$	0.5	$1.025 \cdot 10^{-7}$	$1.025 \cdot 10^{-7}$	$2.927 \cdot 10^{-7}$	
$Hz \to u\bar{u}$	$9.185 \cdot 10^{-18}$	$9.185 \cdot 10^{-18}$	$-5.879 \cdot 10^{-7}$	$9.406 \cdot 10^{-12}$	$9.406 \cdot 10^{-12}$	$-1.063 \cdot 10^{-8}$	
$W^+W^- \to H c \bar c$	$-3.921 \cdot 10^{-12}$	$-3.921 \cdot 10^{-12}$	$-1.275 \cdot 10^{-7}$	$2.152 \cdot 10^{-12}$	$2.152 \cdot 10^{-12}$	$4.647 \cdot 10^{-8}$	
$W^+W^- \to H d\bar{d}$	$1.229 \cdot 10^{-18}$	$1.229 \cdot 10^{-18}$	$-8.134 \cdot 10^{-8}$	$1.767 \cdot 10^{-29}$	$1.767 \cdot 10^{-29}$	0	
$b\bar{b} \to u\bar{u}$	$2.526 \cdot 10^{-32}$	$4.163 \cdot 10^{-31}$	-15.48	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0	
$c\bar{c} \to \mu^+ \mu^-$	$-7.294 \cdot 10^{-30}$	$1.047 \cdot 10^{-29}$	2.435	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0	
$d\bar{d} \to c\bar{c}$	$4.488 \cdot 10^{-32}$	$5.823 \cdot 10^{-32}$	-0.2975	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0	
$t\bar{t} \to c\bar{c}$	$-3.768 \cdot 10^{-23}$	$-2.989 \cdot 10^{-23}$	0.2067	$4.676 \cdot 10^{-8}$	$4.676 \cdot 10^{-8}$	0	
$u\bar{d} \to u\bar{d}$	$-3.699 \cdot 10^{-35}$	$-3.689 \cdot 10^{-35}$	0.002899	$9.56 \cdot 10^{-23}$	$9.56 \cdot 10^{-23}$	0	
$u\bar{u} \to c\bar{c}$	$-1.416 \cdot 10^{-32}$	$-1.02 \cdot 10^{-32}$	0.2796	$1.553 \cdot 10^{-17}$	$1.553 \cdot 10^{-17}$	0	
$u\bar{u} \to u\bar{u}$	$7.529 \cdot 10^{-29}$	$7.529 \cdot 10^{-29}$	0	$1.04 \cdot 10^{-22}$	$1.04 \cdot 10^{-22}$	0	

### 2.171 cuHRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to Hu\bar{u}$	$-4.984 \cdot 10^{-15}$	$-4.984 \cdot 10^{-15}$	0	$3.25 \cdot 10^{-16}$	$3.25 \cdot 10^{-16}$	0	
$HH \to W^- u \bar{d}$	$-1.037 \cdot 10^{-15}$	$-1.037 \cdot 10^{-15}$	$-9.641 \cdot 10^{-8}$	$2.229 \cdot 10^{-16}$	$2.229 \cdot 10^{-16}$	$-4.487 \cdot 10^{-8}$	
$HH \to zc\bar{c}$	$1.729 \cdot 10^{-10}$	$1.729 \cdot 10^{-10}$	$4.626 \cdot 10^{-7}$	$9.785 \cdot 10^{-10}$	$9.785 \cdot 10^{-10}$	$-2.044 \cdot 10^{-8}$	
$HW^+ \to \gamma u \bar{d}$	$-1.876 \cdot 10^{-15}$	$-1.876 \cdot 10^{-15}$	$2.132 \cdot 10^{-7}$	$9.458 \cdot 10^{-17}$	$9.458 \cdot 10^{-17}$	$1.797 \cdot 10^{-7}$	
$HW^+  o u \bar d$	$-3.142 \cdot 10^{-12}$	$-3.142 \cdot 10^{-12}$	$-9.547 \cdot 10^{-8}$	$9.513 \cdot 10^{-12}$	$9.513 \cdot 10^{-12}$	0	
$H\gamma \to c\bar{c}$	$-3.811 \cdot 10^{-6}$	$-3.811 \cdot 10^{-6}$	$2.362 \cdot 10^{-7}$	$1.155 \cdot 10^{-7}$	$1.155 \cdot 10^{-7}$	$2.597 \cdot 10^{-7}$	
$Hz \to u\bar{u}$	$-9.573 \cdot 10^{-12}$	$-9.573 \cdot 10^{-12}$	$-2.612 \cdot 10^{-7}$	$9.708 \cdot 10^{-12}$	$9.708 \cdot 10^{-12}$	$-1.03 \cdot 10^{-8}$	
$W^+W^- \to Hc\bar{c}$	$-1.493 \cdot 10^{-11}$	$-1.493 \cdot 10^{-11}$	$-1.339 \cdot 10^{-7}$	$3.518 \cdot 10^{-12}$	$3.518 \cdot 10^{-12}$	$5.685 \cdot 10^{-8}$	
$W^+W^-  o Hd\bar{d}$	$1.677 \cdot 10^{-16}$	$1.677 \cdot 10^{-16}$	$-1.193 \cdot 10^{-7}$	$1.492 \cdot 10^{-25}$	$1.492 \cdot 10^{-25}$	0	
$b\bar{b} \to u\bar{u}$	$-2.761 \cdot 10^{-15}$	$-2.761 \cdot 10^{-15}$	0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0	
$c\bar{c} \to \mu^+ \mu^-$	$-2.019 \cdot 10^{-13}$	$-2.019 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0	
$d\bar{d} \to c\bar{c}$	$-1.19 \cdot 10^{-15}$	$-1.19 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0	
$t\bar{t} \to c\bar{c}$	$-1.551 \cdot 10^{-6}$	$-1.551 \cdot 10^{-6}$	0	$4.676 \cdot 10^{-8}$	$4.676 \cdot 10^{-8}$	0	
$u\bar{d} \to u\bar{d}$	$-1.748 \cdot 10^{-21}$	$-1.748 \cdot 10^{-21}$	0	$9.439 \cdot 10^{-23}$	$9.439 \cdot 10^{-23}$	0	
$u\bar{u} \to c\bar{c}$	$-5.156 \cdot 10^{-16}$	$-5.156 \cdot 10^{-16}$	0	$3.107 \cdot 10^{-17}$	$3.107 \cdot 10^{-17}$	0	
$u\bar{u} \to u\bar{u}$	$3.113 \cdot 10^{-11}$	$3.113 \cdot 10^{-11}$	0	$2.003 \cdot 10^{-22}$	$2.003 \cdot 10^{-22}$	0	

## 2.172 cuWIm

		interfere	nce		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^- u \bar{d}$	$-3.439 \cdot 10^{-16}$	$-3.439 \cdot 10^{-16}$	$8.724 \cdot 10^{-8}$	$1.459 \cdot 10^{-16}$	$1.459 \cdot 10^{-16}$	$-6.854 \cdot 10^{-8}$		
$HH \to zc\bar{c}$	$1.248 \cdot 10^{-10}$	$1.248 \cdot 10^{-10}$	$-7.212 \cdot 10^{-7}$	$1.783 \cdot 10^{-10}$	$1.783 \cdot 10^{-10}$	$-1.121 \cdot 10^{-7}$		
$HW^+ \to \gamma u \bar{d}$	$-2.212 \cdot 10^{-17}$	$-2.212 \cdot 10^{-17}$	$1.808 \cdot 10^{-7}$	$3.459 \cdot 10^{-17}$	$3.459 \cdot 10^{-17}$	$2.313 \cdot 10^{-7}$		
$HW^+  o u \bar d$	$6.61 \cdot 10^{-16}$	$6.61 \cdot 10^{-16}$	$-3.026 \cdot 10^{-8}$	$3.155 \cdot 10^{-10}$	$3.155 \cdot 10^{-10}$	0		

$H\gamma \to c\bar{c}$	$-4.524 \cdot 10^{-26}$	0	1	$3.193 \cdot 10^{-5}$	$3.193 \cdot 10^{-5}$	$3.759 \cdot 10^{-7}$
$Hz \to u\bar{u}$	$-2.364 \cdot 10^{-14}$	$-2.364 \cdot 10^{-14}$	$-8.461 \cdot 10^{-8}$	$1.743 \cdot 10^{-10}$	$1.743 \cdot 10^{-10}$	$-5.736 \cdot 10^{-8}$
$W^+W^- \to H c \bar c$	$1.106 \cdot 10^{-10}$	$1.106 \cdot 10^{-10}$	$-2.712 \cdot 10^{-7}$	$1.684 \cdot 10^{-10}$	$1.684 \cdot 10^{-10}$	$-1.187 \cdot 10^{-7}$
$W^+W^-  o Hd\bar{d}$	$-4.016 \cdot 10^{-17}$	$-4.016 \cdot 10^{-17}$	$-9.462 \cdot 10^{-7}$	$1.577 \cdot 10^{-24}$	$1.577 \cdot 10^{-24}$	0
$\bar{b}t \to \bar{d}u$	$-2.389 \cdot 10^{-26}$	$-1.578 \cdot 10^{-26}$	0.3395	$1.901 \cdot 10^{-12}$	$1.901 \cdot 10^{-12}$	$-1.052 \cdot 10^{-7}$
$b\bar{b} \to u\bar{u}$	$-2.68 \cdot 10^{-30}$	$-1.339 \cdot 10^{-29}$	-3.997	$1.32 \cdot 10^{-14}$	$1.32 \cdot 10^{-14}$	$-1.515 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	$-1.758 \cdot 10^{-23}$	$-6.46 \cdot 10^{-23}$	-2.674	$1.139 \cdot 10^{-7}$	$1.139 \cdot 10^{-7}$	$-8.783 \cdot 10^{-8}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-3.141 \cdot 10^{-23}$	$2.131 \cdot 10^{-23}$	1.678	$1.825 \cdot 10^{-7}$	$1.825 \cdot 10^{-7}$	$-1.096 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	$6.781 \cdot 10^{-25}$	$2.006 \cdot 10^{-23}$	-28.58	$3.349 \cdot 10^{-7}$	$3.349 \cdot 10^{-7}$	$-1.194 \cdot 10^{-7}$
$t\bar{t} \to c\bar{c}$	$8.905 \cdot 10^{-24}$	$-1.502 \cdot 10^{-23}$	2.687	$2.286 \cdot 10^{-7}$	$2.286 \cdot 10^{-7}$	$-1.312 \cdot 10^{-7}$
$u\bar{d} \to \mu^+ \nu_\mu$	$1.247 \cdot 10^{-29}$	$1.028 \cdot 10^{-29}$	0.1751	$3.067 \cdot 10^{-14}$	$3.067 \cdot 10^{-14}$	$-1.304 \cdot 10^{-7}$
$u\bar{d} \to c\bar{s}$	$-1.47 \cdot 10^{-23}$	$2.353 \cdot 10^{-23}$	2.6	$6.012 \cdot 10^{-7}$	$6.012 \cdot 10^{-7}$	$-1.164 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	$3.241 \cdot 10^{-25}$	$2.669 \cdot 10^{-25}$	0.1766	$1.015 \cdot 10^{-11}$	$1.015 \cdot 10^{-11}$	$-9.853 \cdot 10^{-8}$
$u\bar{u} \to \nu_e \bar{\nu}_e$	$5.426 \cdot 10^{-28}$	$2.928 \cdot 10^{-28}$	0.4603	$2.368 \cdot 10^{-13}$	$2.368 \cdot 10^{-13}$	$-8.445 \cdot 10^{-8}$
$u\bar{u} \to c\bar{c}$	$-2.03 \cdot 10^{-23}$	$-1.516 \cdot 10^{-23}$	0.2531	$2.876 \cdot 10^{-7}$	$2.876 \cdot 10^{-7}$	$-1.391 \cdot 10^{-7}$
$u\bar{u} \to u\bar{u}$	$-7.942 \cdot 10^{-26}$	$1.645 \cdot 10^{-26}$	1.207	$3.556 \cdot 10^{-11}$	$3.556 \cdot 10^{-11}$	$-1.125 \cdot 10^{-7}$

#### 2.173 cuWRe

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to W^- u \bar{d}$	$2.374 \cdot 10^{-15}$	$2.374 \cdot 10^{-15}$	$-1.685 \cdot 10^{-7}$	$1.075 \cdot 10^{-15}$	$1.075 \cdot 10^{-15}$	$-9.305 \cdot 10^{-8}$	
$HH \to zc\bar{c}$	$-2.56 \cdot 10^{-10}$	$-2.56 \cdot 10^{-10}$	$-6.641 \cdot 10^{-7}$	$2.721 \cdot 10^{-10}$	$2.721 \cdot 10^{-10}$	$-1.103 \cdot 10^{-7}$	
$HW^+ \to \gamma u \bar{d}$	$-1.844 \cdot 10^{-15}$	$-1.844 \cdot 10^{-15}$	$2.169 \cdot 10^{-7}$	$9.164 \cdot 10^{-16}$	$9.164 \cdot 10^{-16}$	$2.619 \cdot 10^{-7}$	
$HW^+ \to u\bar{d}$	$-7.814 \cdot 10^{-12}$	$-7.814 \cdot 10^{-12}$	$-1.664 \cdot 10^{-7}$	$2.448 \cdot 10^{-10}$	$2.448 \cdot 10^{-10}$	0	
$H\gamma \to c\bar{c}$	$5.067 \cdot 10^{-10}$	$5.067 \cdot 10^{-10}$	$2.961 \cdot 10^{-7}$	$3.061 \cdot 10^{-5}$	$3.061 \cdot 10^{-5}$	$3.594 \cdot 10^{-7}$	
$Hz \to u\bar{u}$	$-4.467 \cdot 10^{-12}$	$-4.467 \cdot 10^{-12}$	$-6.269 \cdot 10^{-7}$	$1.394 \cdot 10^{-11}$	$1.394 \cdot 10^{-11}$	$-7.172 \cdot 10^{-8}$	
$W^+W^- \to H c \bar c$	$-1.042 \cdot 10^{-11}$	$-1.042 \cdot 10^{-11}$	$-1.919 \cdot 10^{-7}$	$2.071 \cdot 10^{-10}$	$2.071 \cdot 10^{-10}$	$-9.658 \cdot 10^{-8}$	
$W^+W^- \to H d\bar{d}$	$-4.84 \cdot 10^{-16}$	$-4.84 \cdot 10^{-16}$	$-2.273 \cdot 10^{-7}$	$1.583 \cdot 10^{-25}$	$1.583 \cdot 10^{-25}$	$-6.315 \cdot 10^{-8}$	

$\bar{b}t \to \bar{d}u$	$-6.594 \cdot 10^{-13}$	$-6.594 \cdot 10^{-13}$	$-2.275 \cdot 10^{-7}$	$1.943 \cdot 10^{-12}$	$1.943 \cdot 10^{-12}$	$-1.029 \cdot 10^{-7}$
$b\bar{b} \to u\bar{u}$	$-1.7 \cdot 10^{-13}$	$-1.7 \cdot 10^{-13}$	$-5.296 \cdot 10^{-7}$	$7.329 \cdot 10^{-13}$	$7.329 \cdot 10^{-13}$	$-1.092 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	$-1.595 \cdot 10^{-7}$	$-1.595 \cdot 10^{-7}$	$-1.254 \cdot 10^{-7}$	$1.22 \cdot 10^{-8}$	$1.22\cdot10^{-8}$	$-8.194 \cdot 10^{-8}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-3.348 \cdot 10^{-8}$	$-3.348 \cdot 10^{-8}$	$-1.792 \cdot 10^{-7}$	$9.156 \cdot 10^{-8}$	$9.156 \cdot 10^{-8}$	$-1.092 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	$-1.907 \cdot 10^{-7}$	$-1.907 \cdot 10^{-7}$	$-2.622 \cdot 10^{-7}$	$3.437 \cdot 10^{-7}$	$3.437 \cdot 10^{-7}$	$-1.164 \cdot 10^{-7}$
$t\bar{t} \to c\bar{c}$	$8.983 \cdot 10^{-7}$	$8.983 \cdot 10^{-7}$	$-8.905 \cdot 10^{-8}$	$4.105 \cdot 10^{-8}$	$4.105 \cdot 10^{-8}$	$-9.743 \cdot 10^{-8}$
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-1.398 \cdot 10^{-13}$	$-1.398 \cdot 10^{-13}$	$-2.146 \cdot 10^{-7}$	$3.61 \cdot 10^{-13}$	$3.61 \cdot 10^{-13}$	$-1.108 \cdot 10^{-7}$
$u\bar{d} \to c\bar{s}$	$-2.218 \cdot 10^{-7}$	$-2.218 \cdot 10^{-7}$	$-1.353 \cdot 10^{-7}$	$5.137 \cdot 10^{-7}$	$5.137 \cdot 10^{-7}$	$-1.168 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	$3.078 \cdot 10^{-12}$	$3.078 \cdot 10^{-12}$	0	$3.732 \cdot 10^{-12}$	$3.732 \cdot 10^{-12}$	$-1.072 \cdot 10^{-7}$
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-9.516 \cdot 10^{-14}$	$-9.516 \cdot 10^{-14}$	$-7.04 \cdot 10^{-7}$	$3.32 \cdot 10^{-13}$	$3.32 \cdot 10^{-13}$	$-9.037 \cdot 10^{-8}$
$u\bar{u} \to c\bar{c}$	$-3.232 \cdot 10^{-7}$	$-3.232 \cdot 10^{-7}$	$-1.237 \cdot 10^{-7}$	$3.075 \cdot 10^{-7}$	$3.075 \cdot 10^{-7}$	$-1.301 \cdot 10^{-7}$
$u\bar{u} \to u\bar{u}$	$-1.65 \cdot 10^{-11}$	$-1.65 \cdot 10^{-11}$	0	$1.841 \cdot 10^{-12}$	$1.841 \cdot 10^{-12}$	$-1.086 \cdot 10^{-7}$

#### $2.174 \quad \mathrm{cud1}$

		inte		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$d\bar{d} \to c\bar{c}$	-0.03431	-0.03431	$3.498 \cdot 10^{-7}$	0.6012	0.6012	0
$u\bar{d} \to u\bar{d}$	0.02935	0.02935	$3.747 \cdot 10^{-7}$	0.2558	0.2558	0

#### $2.175 \quad {\rm cud8}$

		in	terference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$d\bar{d} \to c\bar{c}$	0.6063	0.6063	0	0.2046	0.2046	0		
$u\bar{d} \to u\bar{d}$	-0.5623	-0.5623	0	0.07761	0.07761	0		

### 2.176 cutbd1Im

#### interference

square  $\verb|mod1| \qquad \verb|mod2| \qquad 1-\verb|mod2/mod1|$ mod1 mod2 1 - mod2/mod1 $8.759 \cdot 10^{-27}$   $8.759 \cdot 10^{-27}$   $-4.567 \cdot 10^{-8}$   $2.075 \cdot 10^{-20}$   $2.075 \cdot 10^{-20}$ 

#### 2.177 cutbd1Re

interference

 $\bmod 1 \qquad \mod 2 \qquad 1-\bmod 2/\bmod 1$  $\verb|mod1| & \verb|mod2| & 1 - \verb|mod2/mod1|$  $\bar{b}t \to \bar{d}u$   $-5.229 \cdot 10^{-23}$   $-5.229 \cdot 10^{-23}$  0  $3.75 \cdot 10^{-20}$   $3.75 \cdot 10^{-20}$ 

square

square

square

#### 2.178 cutbd8Im

interference

 $\bmod 1 \qquad \mod 2 \qquad 1- \bmod 2/ \bmod 1 \qquad \mod 1$ mod2 1 - mod2/mod1 $\bar{b}t \to \bar{d}u$  1.168 · 10<sup>-26</sup> 1.168 · 10<sup>-26</sup> -8.563 · 10<sup>-8</sup> 1.851 · 10<sup>-20</sup> 1.851 · 10<sup>-20</sup> 0

#### 2.179 cutbd8Re

interference

square mod1 mod2  $\bmod 1 \qquad \mod 2 \qquad 1-\bmod 2/\bmod 1$ 1 - mod2/mod1 $\bar{b}t \to \bar{d}u$   $-6.972 \cdot 10^{-23}$   $-6.972 \cdot 10^{-23}$  0  $8.333 \cdot 10^{-21}$   $8.333 \cdot 10^{-21}$ 

#### 2.180 cuu1

interference

mod2 1 - mod2/mod1 $mod1 \quad mod2 \quad 1 - mod2/mod1$ mod1  $0.1892 3.7 \cdot 10^{-7}$ 0.18923.315 3.315 0  $u\bar{u} \to c\bar{c}$  $-0.2137 \quad -0.2137 \quad 4.678 \cdot 10^{-8}$ 1.382 1.382  $u\bar{u} \to u\bar{u}$ 

### 2.181 cuu8

		interfe	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$u\bar{u} \to c\bar{c}$	0.5752	0.5752	0	0.3882	0.3882	0		
$u\bar{u} \to u\bar{u}$	-0.0007239	-0.0007239	$4.144 \cdot 10^{-8}$	0.009142	0.009142	0		

#### 2.182 sm

			interference		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to HH$	0	0	0	0.05621	0.05621	0
$HH \rightarrow HHH$	0	0	0	$2.685 \cdot 10^{-6}$	$2.685 \cdot 10^{-6}$	0
$HH \to H \tau^+ \tau^-$	0	0	0	$8.216 \cdot 10^{-9}$	$8.216 \cdot 10^{-9}$	0
$HH \to Hb\bar{b}$	0	0	0	$5.993 \cdot 10^{-10}$	$5.993 \cdot 10^{-10}$	0
$HH \to Hs\bar{s}$	0	0	0	$4.243 \cdot 10^{-12}$	$4.243 \cdot 10^{-12}$	0
$HH \to Ht\bar{t}$	0	0	0	$1.929 \cdot 10^{-5}$	$1.929 \cdot 10^{-5}$	0
$HH \to Hu\bar{u}$	0	0	0	$3.234 \cdot 10^{-15}$	$3.234 \cdot 10^{-15}$	0
$HH \rightarrow Hzz$	0	0	0	$1.322 \cdot 10^{-5}$	$1.322 \cdot 10^{-5}$	0
$HH \to W^+W^-$	0	0	0	0.1031	0.1031	0
$HH  o W^+W^-\gamma$	0	0	0	0.0001721	0.0001721	$1.743 \cdot 10^{-7}$
$HH \to W^+ \bar{t} b$	0	0	0	$1.22 \cdot 10^{-5}$	$1.22\cdot 10^{-5}$	$-8.199 \cdot 10^{-8}$
$HH  o W^+ e^- \bar{\nu}_e$	0	0	0	$1.267 \cdot 10^{-7}$	$1.267 \cdot 10^{-7}$	$-3.158 \cdot 10^{-7}$
$HH \to W^- u \bar{d}$	0	0	0	$2.369 \cdot 10^{-7}$	$2.369 \cdot 10^{-7}$	$-3.8 \cdot 10^{-7}$
$HH \to z\bar{b}b$	0	0	0	$3.552 \cdot 10^{-7}$	$3.552 \cdot 10^{-7}$	$-8.445 \cdot 10^{-8}$
$HH \to z \nu_e \bar{\nu}_e$	0	0	0	$1.984 \cdot 10^{-7}$	$1.984 \cdot 10^{-7}$	0
$HH \to zc\bar{c}$	0	0	0	$7.711 \cdot 10^{-7}$	$7.711 \cdot 10^{-7}$	$-1.556 \cdot 10^{-7}$
$HH \to z d\bar{d}$	0	0	0	$3.728 \cdot 10^{-7}$	$3.728 \cdot 10^{-7}$	$-1.073 \cdot 10^{-7}$
$HH \rightarrow ze^+e^-$	0	0	0	$2.694 \cdot 10^{-8}$	$2.694 \cdot 10^{-8}$	$-3.712 \cdot 10^{-8}$

$HH \to z t \bar{t}$	0	0	0	$6.444 \cdot 10^{-6}$	$6.444 \cdot 10^{-6}$	$-7.76 \cdot 10^{-8}$
$HH \rightarrow zz$	0	0	0	0.08915	0.08915	0
$HW^+ \to \gamma t \bar{b}$	0	0	0	$8.492 \cdot 10^{-6}$	$8.492 \cdot 10^{-6}$	$2.355 \cdot 10^{-7}$
$HW^+ \to \gamma u \bar{d}$	0	0	0	$2.624 \cdot 10^{-7}$	$2.624 \cdot 10^{-7}$	0
$HW^+ \to u\bar{d}$	0	0	0	0.0229	0.0229	$-2.183 \cdot 10^{-7}$
$HW^-  o \bar{t}b$	0	0	0	0.1017	0.1017	0
$HW^- \to \gamma e^- \bar{\nu}_e$	0	0	0	$1.663 \cdot 10^{-8}$	$1.663 \cdot 10^{-8}$	$6.012 \cdot 10^{-8}$
$HW^-  o \mu^- \bar{\nu}_\mu$	0	0	0	0.00765	0.00765	$-2.222 \cdot 10^{-7}$
$H\gamma  ightarrow bar{b}$	0	0	0	0.0001097	0.0001097	$1.823 \cdot 10^{-7}$
$H\gamma \to c\bar{c}$	0	0	0	$6.233 \cdot 10^{-5}$	$6.233 \cdot 10^{-5}$	$2.407 \cdot 10^{-7}$
$H\gamma \to d\bar{d}$	0	0	0	$9.531 \cdot 10^{-11}$	$9.531 \cdot 10^{-11}$	$2.518 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	0	0	0	$5.401 \cdot 10^{-12}$	$5.401 \cdot 10^{-12}$	$2.407 \cdot 10^{-7}$
$H\gamma \to t\bar{t}$	0	0	0	0.4122	0.4122	$2.426 \cdot 10^{-7}$
$Hz \rightarrow \mu^{+}\mu^{-}$	0	0	0	0.0009842	0.0009842	$-5.08 \cdot 10^{-8}$
$Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$	0	0	0	0.001595	0.001595	0
$Hz  o b ar{b}$	0	0	0	0.009572	0.009572	$-1.149 \cdot 10^{-7}$
$Hz \to s\bar{s}$	0	0	0	0.005243	0.005243	$-9.537 \cdot 10^{-8}$
$Hz \to t\bar{t}$	0	0	0	11.31	11.31	$-8.841 \cdot 10^{-8}$
$Hz \to u\bar{u}$	0	0	0	0.006691	0.006691	$-1.494 \cdot 10^{-7}$
$W^+W^- \to H b \bar b$	0	0	0	$3.199 \cdot 10^{-5}$	$3.199 \cdot 10^{-5}$	$-3.126 \cdot 10^{-7}$
$W^+W^-  o Hc\bar{c}$	0	0	0	$6.903 \cdot 10^{-5}$	$6.903 \cdot 10^{-5}$	$-2.897 \cdot 10^{-7}$
$W^+W^- \to H d\bar{d}$	0	0	0	$3.49 \cdot 10^{-6}$	$3.49 \cdot 10^{-6}$	$-2.292 \cdot 10^{-7}$
$W^+W^-  o H t \bar t$	0	0	0	$1.073 \cdot 10^{-5}$	$1.073 \cdot 10^{-5}$	$-9.319 \cdot 10^{-8}$
$W^+W^- \rightarrow W^+W^-$	0	0	0	5.417	5.417	$-3.508 \cdot 10^{-7}$
$W^+W^- \to \gamma\gamma$	0	0	0	0.09616	0.09616	$4.991 \cdot 10^{-7}$
$W^+W^- \to \gamma\gamma\gamma$	0	0	0	$8.333 \cdot 10^{-7}$	$8.333 \cdot 10^{-7}$	$7.68 \cdot 10^{-7}$
$\bar{b}t \to \bar{d}u$	0	0	0	$5.154 \cdot 10^{-5}$	$5.154 \cdot 10^{-5}$	$-2.134 \cdot 10^{-7}$
$\gamma W^+ \to z W^+$	0	0	0	0.2133	0.2133	$4.688 \cdot 10^{-8}$
$\mu^+\mu^- \to \tau^+\tau^-$	0	0	0	0.02469	0.02469	$3.24\cdot10^{-7}$

$ u_{ au}ar{ u}_{ au}  ightarrow  u_{ au}ar{ u}_{ au}$	0	0	0	$5.178 \cdot 10^{-9}$	$5.178 \cdot 10^{-9}$	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	0	0	0	0.001653	0.001653	0
$b\bar{b}  o \gamma \gamma$	0	0	0	0.001292	0.001292	$5.416 \cdot 10^{-7}$
$b\bar{b} \rightarrow \mu^{+}\mu^{-}$	0	0	0	0.0004494	0.0004494	$1.558 \cdot 10^{-7}$
$b\bar{b}  o \nu_e \bar{\nu}_e$	0	0	0	0.0001591	0.0001591	$5.658 \cdot 10^{-7}$
$bar{b}  o bar{b}$	0	0	0	45.63	45.63	0
$b\bar{b}  o d\bar{d}$	0	0	0	0.8471	0.8471	0
$b\bar{b}  o t\bar{t}$	0	0	0	4.395	4.395	$-2.048 \cdot 10^{-7}$
$b\bar{b} \to u\bar{u}$	0	0	0	0.5077	0.5077	0
$b\bar{t} \to e^- \bar{\nu}_e$	0	0	0	0.001437	0.001437	$-2.088 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	0	0	0	0.001354	0.001354	$2.955 \cdot 10^{-7}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	0	0	0	0.0005661	0.0005661	$-2.297 \cdot 10^{-7}$
$d\bar{d} \to c\bar{c}$	0	0	0	0.5274	0.5274	0
$d\bar{d} \to e^+e^-$	0	0	0	0.001613	0.001613	$-1.24 \cdot 10^{-7}$
$d\bar{d} \to s\bar{s}$	0	0	0	0.9501	0.9501	0
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	0	0	0	0.00509	0.00509	$6.876 \cdot 10^{-7}$
$e^+\nu_e \to \mu^+\nu_\mu$	0	0	0	$1.73 \cdot 10^{-6}$	$1.73 \cdot 10^{-6}$	$-2.313 \cdot 10^{-7}$
$e^+\nu_e \to e^+\nu_e$	0	0	0	0.01062	0.01062	$2.826 \cdot 10^{-7}$
$e^+\tau^- \to e^+\tau^-$	0	0	0	0.008985	0.008985	$7.123 \cdot 10^{-7}$
$e^+e^- \to \mu^+\mu^-$	0	0	0	0.00687	0.006869	$5.823 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	0	0	0	0.01672	0.01672	$7.177 \cdot 10^{-7}$
gg  o gg	0	0	0	49.25	49.25	0
gg  o ggg	0	0	0	0.0299	0.0299	0
gg  o t ar t	0	0	0	1.089	1.089	0
$gg \to u\bar{u}$	0	0	0	0.5304	0.5304	0
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	0	0	0	0.002874	0.002874	$-1.392 \cdot 10^{-7}$
$s\bar{s} \to s\bar{s}$	0	0	0	3.991	3.991	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0	0	0	0.00273	0.00273	$-3.297 \cdot 10^{-7}$
$t\bar{t} \to \tau^+ \tau^-$	0	0	0	0.004229	0.004229	$1.892 \cdot 10^{-7}$

$t\bar{t} \to c\bar{c}$	0	0	0	0.7996	0.7996	0
$t\bar{t}  o d\bar{d}$	0	0	0	0.7506	0.7506	0
$t\bar{t} \to s\bar{s}$	0	0	0	0.9527	0.9527	0
$t\bar{t} \to t\bar{t}$	0	0	0	108.9	108.9	0
$u\bar{d} \to \mu^+ \nu_\mu$	0	0	0	0.001173	0.001173	$-1.705 \cdot 10^{-7}$
$u\bar{d} \to c\bar{s}$	0	0	0	0.03216	0.03216	$-2.177 \cdot 10^{-7}$
$u\bar{d} \to u\bar{d}$	0	0	0	7.021	7.021	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0	0	0	0.00104	0.00104	$-1.924 \cdot 10^{-7}$
$u\bar{u} \to c\bar{c}$	0	0	0	0.829	0.829	0
$u\bar{u} \to u\bar{u}$	0	0	0	3.265	3.265	0
$zz \to W^+W^-$	0	0	0	30.76	30.76	$-5.201 \cdot 10^{-7}$
$zz \to zz$	0	0	0	0.08141	0.08141	0