## 1 By process

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	-0.9367	-0.9367	0	1.833	1.833	0		
cHDD	-0.0822	-0.0822	0	0.013	0.013	0		
cH13	-0.02902	-0.02902	0	0.001759	0.001759	0		
cll1	0.01451	0.01451	0	0.0004399	0.0004399	0		
sm	0	0	0	0.1299	0.1299	0		

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

		interfer	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$3.522 \cdot 10^{-6}$	$3.522 \cdot 10^{-6}$	0	$6.941 \cdot 10^{-5}$	$6.941 \cdot 10^{-5}$	0	
cHDD	$6.437 \cdot 10^{-7}$	$6.437 \cdot 10^{-7}$	0	$3.919 \cdot 10^{-7}$	$3.919 \cdot 10^{-7}$	0	
cH13	$-1.625 \cdot 10^{-8}$	$-1.625 \cdot 10^{-8}$	0	$1.478 \cdot 10^{-9}$	$1.478 \cdot 10^{-9}$	0	
cll1	$8.124 \cdot 10^{-9}$	$8.124 \cdot 10^{-9}$	0	$3.694 \cdot 10^{-10}$	$3.694 \cdot 10^{-10}$	0	
sm	0	0	0	$2.644 \cdot 10^{-7}$	$2.644 \cdot 10^{-7}$	0	

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

		interfere	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$-2.78 \cdot 10^{-10}$	$-2.78 \cdot 10^{-10}$	0	$5.997 \cdot 10^{-10}$	$5.997 \cdot 10^{-10}$	0
cHDD	$-1.536 \cdot 10^{-10}$	$-1.536 \cdot 10^{-10}$	0	$3.378 \cdot 10^{-11}$	$3.378 \cdot 10^{-11}$	0
cH13	$-1.173 \cdot 10^{-11}$	$-1.173 \cdot 10^{-11}$	0	$1.067 \cdot 10^{-12}$	$1.067 \cdot 10^{-12}$	0

ceHIm	$1.188 \cdot 10^{-13}$	$1.188 \cdot 10^{-13}$	0	$1.384 \cdot 10^{-10}$	$1.384 \cdot 10^{-10}$	0
ceHRe	$-2.617 \cdot 10^{-10}$	$-2.617 \cdot 10^{-10}$	0	$9.818 \cdot 10^{-11}$	$9.818 \cdot 10^{-11}$	0
cll1	$5.864 \cdot 10^{-12}$	$5.864 \cdot 10^{-12}$	0	$2.666 \cdot 10^{-13}$	$2.666 \cdot 10^{-13}$	0
sm	0	0	0	$1.746 \cdot 10^{-10}$	$1.746 \cdot 10^{-10}$	0

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$-4.935 \cdot 10^{-9}$	$-4.935 \cdot 10^{-9}$	0	$2.478 \cdot 10^{-8}$	$2.478 \cdot 10^{-8}$	0	
cHDD	$-8.695 \cdot 10^{-12}$	$-8.695 \cdot 10^{-12}$	0	$8.735 \cdot 10^{-11}$	$8.735 \cdot 10^{-11}$	0	
cH13	$-9.016 \cdot 10^{-11}$	$-9.016 \cdot 10^{-11}$	0	$8.199 \cdot 10^{-12}$	$8.199 \cdot 10^{-12}$	0	
cdHIm	$-5.424 \cdot 10^{-12}$	$-5.424 \cdot 10^{-12}$	$3.337 \cdot 10^{-5}$	$1.463 \cdot 10^{-12}$	$1.463 \cdot 10^{-12}$	$6.671 \cdot 10^{-5}$	
cdHRe	$-9.58 \cdot 10^{-9}$	$-9.58 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$1.274 \cdot 10^{-9}$	$1.273 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$	
cll1	$4.508 \cdot 10^{-11}$	$4.508 \cdot 10^{-11}$	0	$2.05 \cdot 10^{-12}$	$2.05 \cdot 10^{-12}$	0	
$\mathtt{sm}$	0	0	0	$1.173 \cdot 10^{-11}$	$1.173 \cdot 10^{-11}$	0	

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

		interfere	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
сН	$-2.039 \cdot 10^{-12}$	$-2.039 \cdot 10^{-12}$	0	$4.702 \cdot 10^{-12}$	$4.702 \cdot 10^{-12}$	0
cHDD	$-4.604 \cdot 10^{-14}$	$-4.604 \cdot 10^{-14}$	0	$4.091 \cdot 10^{-14}$	$4.091 \cdot 10^{-14}$	0
cH13	$-8.041 \cdot 10^{-14}$	$-8.041 \cdot 10^{-14}$	0	$7.312 \cdot 10^{-15}$	$7.312 \cdot 10^{-15}$	0
$\mathtt{cdHIm}$	$7.358 \cdot 10^{-19}$	$7.358 \cdot 10^{-19}$	0	$9.067 \cdot 10^{-14}$	$9.067 \cdot 10^{-14}$	0
cdHRe	$-3.227 \cdot 10^{-12}$	$-3.227 \cdot 10^{-12}$	0	$1.129 \cdot 10^{-12}$	$1.129 \cdot 10^{-12}$	0
cll1	$4.02 \cdot 10^{-14}$	$4.02 \cdot 10^{-14}$	0	$1.828 \cdot 10^{-15}$	$1.828 \cdot 10^{-15}$	0
sm	0	0	0	$1.296 \cdot 10^{-14}$	$1.296 \cdot 10^{-14}$	0

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

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
сН	$3.449 \cdot 10^{-5}$	$3.449 \cdot 10^{-5}$	0	$2.782 \cdot 10^{-5}$	$2.782 \cdot 10^{-5}$	0		
cHDD	$3.853 \cdot 10^{-6}$	$3.853 \cdot 10^{-6}$	0	$1.475 \cdot 10^{-6}$	$1.475 \cdot 10^{-6}$	0		
cHl3	$-1.496 \cdot 10^{-5}$	$-1.496 \cdot 10^{-5}$	0	$1.361 \cdot 10^{-6}$	$1.361 \cdot 10^{-6}$	0		
cll1	$7.481 \cdot 10^{-6}$	$7.481 \cdot 10^{-6}$	0	$3.402 \cdot 10^{-7}$	$3.402 \cdot 10^{-7}$	0		
cuHIm	$-2.795 \cdot 10^{-5}$	$-2.795 \cdot 10^{-5}$	$3.577 \cdot 10^{-8}$	$2.656 \cdot 10^{-5}$	$2.656 \cdot 10^{-5}$	$7.53 \cdot 10^{-8}$		
cuHRe	$4.235 \cdot 10^{-6}$	$4.235 \cdot 10^{-6}$	$4.722 \cdot 10^{-8}$	$1.135 \cdot 10^{-5}$	$1.135 \cdot 10^{-5}$	$8.807 \cdot 10^{-8}$		
sm	0	0	0	0.0001085	0.0001085	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	$-7.418 \cdot 10^{-15}$	$-7.418 \cdot 10^{-15}$	0	$1.869 \cdot 10^{-14}$	$1.869 \cdot 10^{-14}$	0	
cHDD	$-7.536 \cdot 10^{-17}$	$-7.536 \cdot 10^{-17}$	0	$4.082 \cdot 10^{-17}$	$4.082 \cdot 10^{-17}$	0	
cHl3	$-2.677 \cdot 10^{-16}$	$-2.677 \cdot 10^{-16}$	0	$2.435 \cdot 10^{-17}$	$2.435 \cdot 10^{-17}$	0	
cll1	$1.339 \cdot 10^{-16}$	$1.339 \cdot 10^{-16}$	0	$6.087 \cdot 10^{-18}$	$6.087 \cdot 10^{-18}$	0	
cuHIm	$-3.096 \cdot 10^{-25}$	$-3.096 \cdot 10^{-25}$	0	$4.843 \cdot 10^{-16}$	$4.843 \cdot 10^{-16}$	0	
cuHRe	$-3.927 \cdot 10^{-16}$	$-3.927 \cdot 10^{-16}$	0	$4.843 \cdot 10^{-16}$	$4.843 \cdot 10^{-16}$	0	
sm	0	0	0	$3.478 \cdot 10^{-17}$	$3.478 \cdot 10^{-17}$	0	

#### 1.8 $HH \rightarrow Hzz$

сНВ	$-2.425 \cdot 10^{-6}$	$-2.425 \cdot 10^{-6}$	0	$8.161 \cdot 10^{-7}$	$8.161 \cdot 10^{-7}$	0
cHBtil	$1.572 \cdot 10^{-6}$	$1.572 \cdot 10^{-6}$	0	$2.55 \cdot 10^{-7}$	$2.55\cdot 10^{-7}$	0
cHDD	$2.456 \cdot 10^{-6}$	$2.456 \cdot 10^{-6}$	0	$1.271 \cdot 10^{-6}$	$1.271 \cdot 10^{-6}$	0
cHW	$-8.796 \cdot 10^{-6}$	$-8.796 \cdot 10^{-6}$	0	$6.002 \cdot 10^{-6}$	$6.002 \cdot 10^{-6}$	0
cHWB	$-4.392 \cdot 10^{-6}$	$-4.392 \cdot 10^{-6}$	0	$2.678 \cdot 10^{-6}$	$2.678 \cdot 10^{-6}$	0
cHWBtil	$2.848 \cdot 10^{-6}$	$2.848 \cdot 10^{-6}$	0	$8.367 \cdot 10^{-7}$	$8.367 \cdot 10^{-7}$	0
cHWtil	$5.16 \cdot 10^{-6}$	$5.16 \cdot 10^{-6}$	0	$2.746 \cdot 10^{-6}$	$2.746 \cdot 10^{-6}$	0
cH13	$-3.807 \cdot 10^{-6}$	$-3.807 \cdot 10^{-6}$	0	$3.462 \cdot 10^{-7}$	$3.462 \cdot 10^{-7}$	0
cll1	$1.904 \cdot 10^{-6}$	$1.904 \cdot 10^{-6}$	0	$8.656 \cdot 10^{-8}$	$8.656 \cdot 10^{-8}$	0
sm	0	0	0	$6.76 \cdot 10^{-6}$	$6.76 \cdot 10^{-6}$	0

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

		interfere		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	-0.01769	-0.01769	0	0.1331	0.1331	0
cHDD	-0.4159	-0.4159	0	0.1066	0.1066	0
cHW	-0.02107	-0.02107	0	7.9	7.9	0
cHWB	-8.443	-8.443	0	4.772	4.772	0
cHWtil	$-1.176 \cdot 10^{-15}$	$-1.176 \cdot 10^{-15}$	0	7.747	7.747	0
cH13	-2.209	-2.209	0	1.369	1.369	0
cll1	-0.3234	-0.3234	0	0.1547	0.1547	0
sm	0	0	0	0.1124	0.1124	0

## $\textbf{1.10} \quad HH \rightarrow W^+W^-\gamma$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$4.737 \cdot 10^{-6}$	$4.737 \cdot 10^{-6}$	0	$1.239 \cdot 10^{-6}$	$1.239 \cdot 10^{-6}$	0	

сНВ	$1.842 \cdot 10^{-5}$	$1.842 \cdot 10^{-5}$	0	$7.721 \cdot 10^{-6}$	$7.721 \cdot 10^{-6}$	0
cHBtil	$-4.605 \cdot 10^{-7}$	$-4.605 \cdot 10^{-7}$	0	$7.958 \cdot 10^{-7}$	$7.958 \cdot 10^{-7}$	0
cHDD	$-2.634 \cdot 10^{-7}$	$-2.634 \cdot 10^{-7}$	0	$4.533 \cdot 10^{-8}$	$4.533 \cdot 10^{-8}$	0
cHW	$1.455 \cdot 10^{-6}$	$1.455 \cdot 10^{-6}$	0	0.0001353	0.0001353	0
cHWB	$-9.827 \cdot 10^{-5}$	$-9.827 \cdot 10^{-5}$	0	$8.552 \cdot 10^{-5}$	$8.552 \cdot 10^{-5}$	0
cHWBtil	$1.656 \cdot 10^{-6}$	$1.656 \cdot 10^{-6}$	0	$5.279 \cdot 10^{-5}$	$5.279 \cdot 10^{-5}$	0
cHWtil	$-7.551 \cdot 10^{-7}$	$-7.551 \cdot 10^{-7}$	0	$9.391 \cdot 10^{-5}$	$9.391 \cdot 10^{-5}$	0
cH13	$-4.245 \cdot 10^{-5}$	$-4.245 \cdot 10^{-5}$	0	$1.71\cdot 10^{-5}$	$1.71\cdot 10^{-5}$	0
cW	$3.031 \cdot 10^{-6}$	$3.031 \cdot 10^{-6}$	0	$7.528 \cdot 10^{-7}$	$7.528 \cdot 10^{-7}$	0
cWtil	$-1.517 \cdot 10^{-6}$	$-1.517 \cdot 10^{-6}$	0	$7.528 \cdot 10^{-7}$	$7.528 \cdot 10^{-7}$	0
cll1	$3.048 \cdot 10^{-6}$	$3.048 \cdot 10^{-6}$	0	$2.09 \cdot 10^{-6}$	$2.09 \cdot 10^{-6}$	0
sm	0	0	0	$1.974 \cdot 10^{-6}$	$1.974 \cdot 10^{-6}$	0

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

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$3.266 \cdot 10^{-6}$	$3.266 \cdot 10^{-6}$	0	$2.578 \cdot 10^{-6}$	$2.578 \cdot 10^{-6}$	0
cHDD	-0.0001246	-0.0001246	0	$1.018 \cdot 10^{-5}$	$1.018 \cdot 10^{-5}$	0
cHW	$-6.165 \cdot 10^{-6}$	$-6.165 \cdot 10^{-6}$	0	$2.623 \cdot 10^{-5}$	$2.623 \cdot 10^{-5}$	0
cHWB	$-2.734 \cdot 10^{-5}$	$-2.734 \cdot 10^{-5}$	0	$2.012 \cdot 10^{-5}$	$2.012 \cdot 10^{-5}$	0
cHWtil	$1.934 \cdot 10^{-5}$	$1.934 \cdot 10^{-5}$	0	$1.857 \cdot 10^{-5}$	$1.857 \cdot 10^{-5}$	0
cH13	$-4.093 \cdot 10^{-5}$	$-4.093 \cdot 10^{-5}$	0	$2.179 \cdot 10^{-5}$	$2.179 \cdot 10^{-5}$	0
сНqЗ	$7.356 \cdot 10^{-6}$	$7.356 \cdot 10^{-6}$	0	$1.024 \cdot 10^{-5}$	$1.024 \cdot 10^{-5}$	0
$\mathtt{cHudIm}$	$-1.402 \cdot 10^{-9}$	$-1.402 \cdot 10^{-9}$	$3.344 \cdot 10^{-5}$	$8.448 \cdot 10^{-9}$	$8.447 \cdot 10^{-9}$	$6.691 \cdot 10^{-5}$
cHudRe	$-1.618 \cdot 10^{-7}$	$-1.618 \cdot 10^{-7}$	$3.343 \cdot 10^{-5}$	$9.362 \cdot 10^{-9}$	$9.361 \cdot 10^{-9}$	$6.69 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-7.045 \cdot 10^{-8}$	$-7.045 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	$1.395 \cdot 10^{-8}$	$1.395 \cdot 10^{-8}$	$6.675 \cdot 10^{-5}$
cdHRe	$-1.281 \cdot 10^{-8}$	$-1.281 \cdot 10^{-8}$	$3.333 \cdot 10^{-5}$	$4.156 \cdot 10^{-9}$	$4.156 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$-3.827 \cdot 10^{-7}$	$-3.827 \cdot 10^{-7}$	$3.334 \cdot 10^{-5}$	$4.463 \cdot 10^{-8}$	$4.463 \cdot 10^{-8}$	$6.675 \cdot 10^{-5}$
cdWRe	$2.402 \cdot 10^{-8}$	$2.402 \cdot 10^{-8}$	$3.335 \cdot 10^{-5}$	$9.463 \cdot 10^{-9}$	$9.462 \cdot 10^{-9}$	$6.673 \cdot 10^{-5}$

cll1	$-8.122 \cdot 10^{-7}$	$-8.122 \cdot 10^{-7}$	0	$1.966 \cdot 10^{-6}$	$1.966 \cdot 10^{-6}$	0
cuHIm	$1.175 \cdot 10^{-6}$	$1.175 \cdot 10^{-6}$	0	$7.468 \cdot 10^{-6}$	$7.468 \cdot 10^{-6}$	$5.356 \cdot 10^{-8}$
cuHRe	$6.066 \cdot 10^{-6}$	$6.066 \cdot 10^{-6}$	$3.297 \cdot 10^{-8}$	$3.982 \cdot 10^{-6}$	$3.982 \cdot 10^{-6}$	$7.533 \cdot 10^{-8}$
cuWIm	$-3.363 \cdot 10^{-6}$	$-3.363 \cdot 10^{-6}$	$2.974 \cdot 10^{-8}$	$1.616 \cdot 10^{-5}$	$1.616 \cdot 10^{-5}$	$6.188 \cdot 10^{-8}$
cuWRe	$8.126 \cdot 10^{-5}$	$8.126 \cdot 10^{-5}$	$3.692 \cdot 10^{-8}$	$7.63 \cdot 10^{-5}$	$7.63 \cdot 10^{-5}$	$5.242 \cdot 10^{-8}$
$\mathtt{sm}$	0	0	0	0.0002633	0.0002633	0

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$-2.022 \cdot 10^{-9}$	$-2.022 \cdot 10^{-9}$	0	$9.65 \cdot 10^{-10}$	$9.65 \cdot 10^{-10}$	0
cHDD	$-5.274 \cdot 10^{-8}$	$-5.274 \cdot 10^{-8}$	0	$3.886 \cdot 10^{-9}$	$3.886 \cdot 10^{-9}$	0
cHW	$-4.017 \cdot 10^{-7}$	$-4.017 \cdot 10^{-7}$	0	$1.757 \cdot 10^{-6}$	$1.757 \cdot 10^{-6}$	0
cHWB	$-9.257 \cdot 10^{-7}$	$-9.257 \cdot 10^{-7}$	0	$1.904 \cdot 10^{-7}$	$1.904 \cdot 10^{-7}$	0
cHWtil	$-4.405 \cdot 10^{-8}$	$-4.405 \cdot 10^{-8}$	0	$1.206 \cdot 10^{-6}$	$1.206 \cdot 10^{-6}$	0
cH13	$1.785 \cdot 10^{-7}$	$1.785 \cdot 10^{-7}$	0	$2.244 \cdot 10^{-7}$	$2.244 \cdot 10^{-7}$	0
$\mathtt{ceHIm}$	$6.567 \cdot 10^{-18}$	$6.567 \cdot 10^{-18}$	0	$1.459 \cdot 10^{-17}$	$1.459 \cdot 10^{-17}$	0
ceHRe	$-1.953 \cdot 10^{-17}$	$-1.953 \cdot 10^{-17}$	0	$5.641 \cdot 10^{-18}$	$5.641 \cdot 10^{-18}$	0
$\mathtt{ceWIm}$	$-2.657 \cdot 10^{-17}$	$-2.657 \cdot 10^{-17}$	0	$4.483 \cdot 10^{-17}$	$4.483 \cdot 10^{-17}$	0
ceWRe	$-5.361 \cdot 10^{-17}$	$-5.361 \cdot 10^{-17}$	0	$4.483 \cdot 10^{-17}$	$4.483 \cdot 10^{-17}$	0
cll1	$5.543 \cdot 10^{-9}$	$5.543 \cdot 10^{-9}$	0	$1.487 \cdot 10^{-9}$	$1.487 \cdot 10^{-9}$	0
sm	0	0	0	$1.616 \cdot 10^{-7}$	$1.616 \cdot 10^{-7}$	0

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

	interterence			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$7.013 \cdot 10^{-8}$	$7.013 \cdot 10^{-8}$	0	$4.219 \cdot 10^{-9}$	$4.219 \cdot 10^{-9}$	0

cHDD	$-1.545 \cdot 10^{-7}$	$-1.545 \cdot 10^{-7}$	0	$1.131 \cdot 10^{-8}$	$1.131 \cdot 10^{-8}$	0
cHW	$1.67 \cdot 10^{-6}$	$1.67 \cdot 10^{-6}$	0	$1.615 \cdot 10^{-5}$	$1.615 \cdot 10^{-5}$	0
cHWB	$-2.554 \cdot 10^{-6}$	$-2.554 \cdot 10^{-6}$	0	$3.21 \cdot 10^{-7}$	$3.21 \cdot 10^{-7}$	0
cHWtil	$-6.519 \cdot 10^{-7}$	$-6.519 \cdot 10^{-7}$	0	$9.652 \cdot 10^{-7}$	$9.652 \cdot 10^{-7}$	0
cH13	$-9.643 \cdot 10^{-7}$	$-9.643 \cdot 10^{-7}$	0	$2.169 \cdot 10^{-7}$	$2.169 \cdot 10^{-7}$	0
сНqЗ	$3.334 \cdot 10^{-6}$	$3.334 \cdot 10^{-6}$	0	$3.273 \cdot 10^{-6}$	$3.273 \cdot 10^{-6}$	0
$\mathtt{cHudIm}$	$1.617 \cdot 10^{-26}$	$1.617 \cdot 10^{-26}$	0	$5.793 \cdot 10^{-24}$	$5.793 \cdot 10^{-24}$	0
cHudRe	$-3.417 \cdot 10^{-24}$	$-3.417 \cdot 10^{-24}$	0	$3.275 \cdot 10^{-25}$	$3.275 \cdot 10^{-25}$	0
$\mathtt{cdHIm}$	$-5.894 \cdot 10^{-16}$	$-5.894 \cdot 10^{-16}$	0	$2.287 \cdot 10^{-15}$	$2.287 \cdot 10^{-15}$	0
cdHRe	$-1.004 \cdot 10^{-14}$	$-1.004 \cdot 10^{-14}$	0	$1.317 \cdot 10^{-14}$	$1.317 \cdot 10^{-14}$	0
$\operatorname{cdWIm}$	$4.553 \cdot 10^{-17}$	$4.553 \cdot 10^{-17}$	0	$1.908 \cdot 10^{-16}$	$1.908 \cdot 10^{-16}$	0
cdWRe	$6.494 \cdot 10^{-16}$	$6.494 \cdot 10^{-16}$	0	$3.913 \cdot 10^{-15}$	$3.913 \cdot 10^{-15}$	0
cll1	$3.039 \cdot 10^{-7}$	$3.039 \cdot 10^{-7}$	0	$3.599 \cdot 10^{-8}$	$3.599 \cdot 10^{-8}$	0
cuHIm	$1.29 \cdot 10^{-17}$	$1.29 \cdot 10^{-17}$	0	$4.772 \cdot 10^{-15}$	$4.772 \cdot 10^{-15}$	0
cuHRe	$-2.895 \cdot 10^{-15}$	$-2.895 \cdot 10^{-15}$	0	$4.772 \cdot 10^{-15}$	$4.772 \cdot 10^{-15}$	0
cuWIm	$3.356 \cdot 10^{-15}$	$3.356 \cdot 10^{-15}$	0	$8.388 \cdot 10^{-16}$	$8.388 \cdot 10^{-16}$	0
cuWRe	$-2.209 \cdot 10^{-16}$	$-2.209 \cdot 10^{-16}$	0	$4.085 \cdot 10^{-17}$	$4.085 \cdot 10^{-17}$	0
sm	0	0	0	$4.802 \cdot 10^{-7}$	$4.802 \cdot 10^{-7}$	0

### **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	$6.29 \cdot 10^{-9}$	$6.29 \cdot 10^{-9}$	0	$3.206 \cdot 10^{-10}$	$3.206 \cdot 10^{-10}$	0
сНВ	$1.318 \cdot 10^{-7}$	$1.318 \cdot 10^{-7}$	0	$1.882 \cdot 10^{-7}$	$1.882 \cdot 10^{-7}$	0
cHBtil	$4.583 \cdot 10^{-6}$	$4.583 \cdot 10^{-6}$	0	$5.83 \cdot 10^{-6}$	$5.83 \cdot 10^{-6}$	0
cHDD	$-1.578 \cdot 10^{-6}$	$-1.578 \cdot 10^{-6}$	0	$9.066 \cdot 10^{-6}$	$9.066 \cdot 10^{-6}$	0
cHW	$8.004 \cdot 10^{-7}$	$8.004 \cdot 10^{-7}$	0	$5.038 \cdot 10^{-7}$	$5.038 \cdot 10^{-7}$	0
cHWB	$3.681 \cdot 10^{-7}$	$3.681 \cdot 10^{-7}$	0	$6.066 \cdot 10^{-7}$	$6.066 \cdot 10^{-7}$	0

cHWBtil	$1.063 \cdot 10^{-5}$	$1.063 \cdot 10^{-5}$	0	$2.315 \cdot 10^{-5}$	$2.315 \cdot 10^{-5}$	0
cHWtil	$2.348 \cdot 10^{-5}$	$2.348 \cdot 10^{-5}$	0	0.0001127	0.0001127	0
cHd	$-2.457 \cdot 10^{-7}$	$-2.457 \cdot 10^{-7}$	0	$1.351 \cdot 10^{-7}$	$1.351 \cdot 10^{-7}$	0
cH13	$-3.735 \cdot 10^{-7}$	$-3.735 \cdot 10^{-7}$	0	$3.999 \cdot 10^{-8}$	$3.999 \cdot 10^{-8}$	0
cHq1	$1.532 \cdot 10^{-6}$	$1.532 \cdot 10^{-6}$	0	$1.698 \cdot 10^{-6}$	$1.698 \cdot 10^{-6}$	0
сНqЗ	$1.008 \cdot 10^{-5}$	$1.008 \cdot 10^{-5}$	0	$2.92 \cdot 10^{-5}$	$2.92\cdot10^{-5}$	0
$\mathtt{cdBIm}$	$1.446 \cdot 10^{-10}$	$1.446 \cdot 10^{-10}$	$3.333 \cdot 10^{-5}$	$6.148 \cdot 10^{-11}$	$6.148 \cdot 10^{-11}$	$6.674 \cdot 10^{-5}$
cdBRe	$-1.475 \cdot 10^{-9}$	$-1.475 \cdot 10^{-9}$	$3.335 \cdot 10^{-5}$	$2.991 \cdot 10^{-10}$	$2.991 \cdot 10^{-10}$	$6.674 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$3.855 \cdot 10^{-10}$	$3.855 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$2.932 \cdot 10^{-10}$	$2.932 \cdot 10^{-10}$	$6.671 \cdot 10^{-5}$
cdHRe	$-1.435 \cdot 10^{-9}$	$-1.435 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$1.466 \cdot 10^{-9}$	$1.466 \cdot 10^{-9}$	$6.677 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$2.62 \cdot 10^{-10}$	$2.62 \cdot 10^{-10}$	$3.336 \cdot 10^{-5}$	$2.017 \cdot 10^{-10}$	$2.017 \cdot 10^{-10}$	$6.672 \cdot 10^{-5}$
cdWRe	$-2.673 \cdot 10^{-9}$	$-2.673 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$9.814 \cdot 10^{-10}$	$9.813 \cdot 10^{-10}$	$6.674 \cdot 10^{-5}$
cll1	$1.868 \cdot 10^{-7}$	$1.868 \cdot 10^{-7}$	0	$9.998 \cdot 10^{-9}$	$9.998 \cdot 10^{-9}$	0
sm	0	0	0	$3.662 \cdot 10^{-6}$	$3.662 \cdot 10^{-6}$	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$5.094 \cdot 10^{-9}$	$5.094 \cdot 10^{-9}$	0	$5.09 \cdot 10^{-10}$	$5.09 \cdot 10^{-10}$	0	
сНВ	$1.01 \cdot 10^{-7}$	$1.01\cdot 10^{-7}$	0	$5.535 \cdot 10^{-7}$	$5.535 \cdot 10^{-7}$	0	
cHBtil	$-3.726 \cdot 10^{-8}$	$-3.726 \cdot 10^{-8}$	0	$8.946 \cdot 10^{-9}$	$8.946 \cdot 10^{-9}$	0	
cHDD	$2.201 \cdot 10^{-9}$	$2.201 \cdot 10^{-9}$	0	$3.596 \cdot 10^{-10}$	$3.596 \cdot 10^{-10}$	0	
cHW	$3.028 \cdot 10^{-7}$	$3.028 \cdot 10^{-7}$	0	$1.997 \cdot 10^{-6}$	$1.997 \cdot 10^{-6}$	0	
cHWB	$1.83 \cdot 10^{-7}$	$1.83 \cdot 10^{-7}$	0	$1.816 \cdot 10^{-6}$	$1.816 \cdot 10^{-6}$	0	
cHWBtil	$-6.75 \cdot 10^{-8}$	$-6.75 \cdot 10^{-8}$	0	$2.936 \cdot 10^{-8}$	$2.936 \cdot 10^{-8}$	0	
cHWtil	$-1.223 \cdot 10^{-7}$	$-1.223 \cdot 10^{-7}$	0	$9.633 \cdot 10^{-8}$	$9.633 \cdot 10^{-8}$	0	
cHl1	$-4.332 \cdot 10^{-7}$	$-4.332 \cdot 10^{-7}$	0	$1.522 \cdot 10^{-7}$	$1.522 \cdot 10^{-7}$	0	
cH13	$4.991 \cdot 10^{-7}$	$4.991 \cdot 10^{-7}$	0	$3.361 \cdot 10^{-7}$	$3.361 \cdot 10^{-7}$	0	

cll1	$3.369 \cdot 10^{-8}$	$3.369 \cdot 10^{-8}$	0	$1.532 \cdot 10^{-9}$	$1.532 \cdot 10^{-9}$	0
sm	0	0	0	$1.926 \cdot 10^{-7}$	$1.926 \cdot 10^{-7}$	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cН	$2.981 \cdot 10^{-9}$	$2.981 \cdot 10^{-9}$	0	$1.58 \cdot 10^{-10}$	$1.58 \cdot 10^{-10}$	0	
сНВ	$2.163 \cdot 10^{-8}$	$2.163 \cdot 10^{-8}$	0	$1.102 \cdot 10^{-7}$	$1.102 \cdot 10^{-7}$	0	
cHBtil	$-1.284 \cdot 10^{-7}$	$-1.284 \cdot 10^{-7}$	0	$1.497 \cdot 10^{-6}$	$1.497 \cdot 10^{-6}$	0	
cHDD	$-8.561 \cdot 10^{-7}$	$-8.561 \cdot 10^{-7}$	0	$7.969 \cdot 10^{-8}$	$7.969 \cdot 10^{-8}$	0	
cHW	$5.05 \cdot 10^{-7}$	$5.05 \cdot 10^{-7}$	0	$9.283 \cdot 10^{-7}$	$9.283 \cdot 10^{-7}$	0	
cHWB	$7.434 \cdot 10^{-8}$	$7.434 \cdot 10^{-8}$	0	$1.119 \cdot 10^{-7}$	$1.119 \cdot 10^{-7}$	0	
cHWBtil	$-4.716 \cdot 10^{-7}$	$-4.716 \cdot 10^{-7}$	0	$1.513 \cdot 10^{-6}$	$1.513 \cdot 10^{-6}$	0	
cHWtil	$-1.287 \cdot 10^{-6}$	$-1.287 \cdot 10^{-6}$	0	$8.815 \cdot 10^{-6}$	$8.815 \cdot 10^{-6}$	0	
cH13	$-1.403 \cdot 10^{-7}$	$-1.403 \cdot 10^{-7}$	0	$1.82 \cdot 10^{-8}$	$1.82 \cdot 10^{-8}$	0	
cHq1	$-4.385 \cdot 10^{-6}$	$-4.385 \cdot 10^{-6}$	0	$1.395 \cdot 10^{-5}$	$1.395 \cdot 10^{-5}$	0	
cHq3	$2.955 \cdot 10^{-6}$	$2.955 \cdot 10^{-6}$	0	$8.168 \cdot 10^{-6}$	$8.168 \cdot 10^{-6}$	0	
cHu	$3.182 \cdot 10^{-6}$	$3.182 \cdot 10^{-6}$	0	$4.901 \cdot 10^{-6}$	$4.901 \cdot 10^{-6}$	0	
cll1	$7.016 \cdot 10^{-8}$	$7.016 \cdot 10^{-8}$	0	$4.55 \cdot 10^{-9}$	$4.55 \cdot 10^{-9}$	0	
cuBIm	$8.097 \cdot 10^{-10}$	$8.097 \cdot 10^{-10}$	0	$2.38 \cdot 10^{-10}$	$2.38 \cdot 10^{-10}$	0	
cuBRe	$4.911 \cdot 10^{-10}$	$4.911 \cdot 10^{-10}$	0	$2.38 \cdot 10^{-10}$	$2.38 \cdot 10^{-10}$	0	
cuHIm	$4.878 \cdot 10^{-11}$	$4.878 \cdot 10^{-11}$	0	$2.199 \cdot 10^{-10}$	$2.199 \cdot 10^{-10}$	0	
cuHRe	$-1.795 \cdot 10^{-10}$	$-1.795 \cdot 10^{-10}$	0	$2.199 \cdot 10^{-10}$	$2.199 \cdot 10^{-10}$	0	
cuWIm	$1.467 \cdot 10^{-11}$	$1.467 \cdot 10^{-11}$	0	$7.377 \cdot 10^{-11}$	$7.377 \cdot 10^{-11}$	0	
cuWRe	$-8.896 \cdot 10^{-10}$	$-8.896 \cdot 10^{-10}$	0	$7.809 \cdot 10^{-10}$	$7.809 \cdot 10^{-10}$	0	
sm	0	0	0	$3.047 \cdot 10^{-6}$	$3.047 \cdot 10^{-6}$	0	

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

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
сН	$1.306 \cdot 10^{-8}$	$1.306 \cdot 10^{-8}$	0	$1.186 \cdot 10^{-9}$	$1.186 \cdot 10^{-9}$	0
cHB	$2.964 \cdot 10^{-8}$	$2.964 \cdot 10^{-8}$	0	$6.327 \cdot 10^{-8}$	$6.327 \cdot 10^{-8}$	0
cHBtil	$2.855 \cdot 10^{-7}$	$2.855 \cdot 10^{-7}$	0	$6.638 \cdot 10^{-7}$	$6.638 \cdot 10^{-7}$	0
cHDD	$-3.808 \cdot 10^{-7}$	$-3.808 \cdot 10^{-7}$	0	$1.604 \cdot 10^{-7}$	$1.604 \cdot 10^{-7}$	0
cHW	$1.444 \cdot 10^{-7}$	$1.444 \cdot 10^{-7}$	0	$3.577 \cdot 10^{-6}$	$3.577 \cdot 10^{-6}$	0
cHWB	$6.667 \cdot 10^{-8}$	$6.667 \cdot 10^{-8}$	0	$2.024 \cdot 10^{-7}$	$2.024 \cdot 10^{-7}$	0
cHWBtil	$7.656 \cdot 10^{-7}$	$7.656 \cdot 10^{-7}$	0	$2.241 \cdot 10^{-6}$	$2.241 \cdot 10^{-6}$	0
cHWtil	$1.837 \cdot 10^{-6}$	$1.837 \cdot 10^{-6}$	0	$1.296 \cdot 10^{-5}$	$1.296 \cdot 10^{-5}$	0
cHd	$-2.655 \cdot 10^{-7}$	$-2.655 \cdot 10^{-7}$	0	$5.854 \cdot 10^{-7}$	$5.854 \cdot 10^{-7}$	0
cH13	$-1.066 \cdot 10^{-7}$	$-1.066 \cdot 10^{-7}$	0	$1.139 \cdot 10^{-8}$	$1.139 \cdot 10^{-8}$	0
cHq1	$7.573 \cdot 10^{-6}$	$7.573 \cdot 10^{-6}$	0	$1.408 \cdot 10^{-5}$	$1.408 \cdot 10^{-5}$	0
сНqЗ	$1.261 \cdot 10^{-6}$	$1.261 \cdot 10^{-6}$	0	$1.599 \cdot 10^{-6}$	$1.599 \cdot 10^{-6}$	0
cdBIm	$5.021 \cdot 10^{-15}$	$5.021 \cdot 10^{-15}$	0	$7.01 \cdot 10^{-16}$	$7.01 \cdot 10^{-16}$	0
cdBRe	$1.388 \cdot 10^{-15}$	$1.388 \cdot 10^{-15}$	0	$4.544 \cdot 10^{-16}$	$4.544 \cdot 10^{-16}$	0
$\mathtt{cdHIm}$	$4.523 \cdot 10^{-15}$	$4.523 \cdot 10^{-15}$	0	$1.206 \cdot 10^{-15}$	$1.206 \cdot 10^{-15}$	0
cdHRe	$-5.438 \cdot 10^{-15}$	$-5.438 \cdot 10^{-15}$	0	$4.327 \cdot 10^{-15}$	$4.327 \cdot 10^{-15}$	0
$\mathtt{cdWIm}$	$9.095 \cdot 10^{-15}$	$9.095 \cdot 10^{-15}$	0	$2.3 \cdot 10^{-15}$	$2.3 \cdot 10^{-15}$	0
cdWRe	$2.515 \cdot 10^{-15}$	$2.515 \cdot 10^{-15}$	0	$1.491 \cdot 10^{-15}$	$1.491 \cdot 10^{-15}$	0
cll1	$5.329 \cdot 10^{-8}$	$5.329 \cdot 10^{-8}$	0	$2.848 \cdot 10^{-9}$	$2.848 \cdot 10^{-9}$	0
sm	0	0	0	$9.177 \cdot 10^{-7}$	$9.177 \cdot 10^{-7}$	0

### **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	$5.966 \cdot 10^{-9}$	$5.966 \cdot 10^{-9}$	0	$1.599 \cdot 10^{-10}$	$1.599 \cdot 10^{-10}$	0
сНВ	$1.863 \cdot 10^{-8}$	$1.863 \cdot 10^{-8}$	0	$2.718 \cdot 10^{-7}$	$2.718 \cdot 10^{-7}$	0
cHBtil	$7.858 \cdot 10^{-8}$	$7.858 \cdot 10^{-8}$	0	$1.611 \cdot 10^{-6}$	$1.611 \cdot 10^{-6}$	0
cHDD	$-7.374 \cdot 10^{-10}$	$-7.374 \cdot 10^{-10}$	0	$4.877 \cdot 10^{-8}$	$4.877 \cdot 10^{-8}$	0
cHW	$-6.999 \cdot 10^{-9}$	$-6.999 \cdot 10^{-9}$	0	$9.839 \cdot 10^{-7}$	$9.839 \cdot 10^{-7}$	0
cHWB	$3.856 \cdot 10^{-8}$	$3.856 \cdot 10^{-8}$	0	$1.898 \cdot 10^{-7}$	$1.898 \cdot 10^{-7}$	0
cHWBtil	$1.639 \cdot 10^{-7}$	$1.639 \cdot 10^{-7}$	0	$1.104 \cdot 10^{-6}$	$1.104 \cdot 10^{-6}$	0
cHWtil	$3.358 \cdot 10^{-7}$	$3.358 \cdot 10^{-7}$	0	$3.647 \cdot 10^{-6}$	$3.647 \cdot 10^{-6}$	0
сНе	$-4.161 \cdot 10^{-7}$	$-4.161 \cdot 10^{-7}$	0	$1.288 \cdot 10^{-6}$	$1.288 \cdot 10^{-6}$	0
cHl1	$4.748 \cdot 10^{-7}$	$4.748 \cdot 10^{-7}$	0	$1.288 \cdot 10^{-6}$	$1.288 \cdot 10^{-6}$	0
cH13	$6.79 \cdot 10^{-7}$	$6.79 \cdot 10^{-7}$	0	$1.619 \cdot 10^{-6}$	$1.619 \cdot 10^{-6}$	0
ceBIm	$3.963 \cdot 10^{-20}$	$3.963 \cdot 10^{-20}$	0	$1.969 \cdot 10^{-18}$	$1.969 \cdot 10^{-18}$	0
ceBRe	$-2.346 \cdot 10^{-19}$	$-2.346 \cdot 10^{-19}$	0	$2.655 \cdot 10^{-19}$	$2.655 \cdot 10^{-19}$	0
ceHIm	$-1.279 \cdot 10^{-17}$	$-1.279 \cdot 10^{-17}$	0	$5.897 \cdot 10^{-18}$	$5.897 \cdot 10^{-18}$	0
ceHRe	$2.38 \cdot 10^{-18}$	$2.38 \cdot 10^{-18}$	0	$1.018 \cdot 10^{-18}$	$1.018 \cdot 10^{-18}$	0
$\mathtt{ceWIm}$	$7.179 \cdot 10^{-20}$	$7.179 \cdot 10^{-20}$	0	$6.463 \cdot 10^{-18}$	$6.463 \cdot 10^{-18}$	0
ceWRe	$7.295 \cdot 10^{-19}$	$7.295 \cdot 10^{-19}$	0	$6.463 \cdot 10^{-18}$	$6.463 \cdot 10^{-18}$	0
cll1	$2.43 \cdot 10^{-8}$	$2.43 \cdot 10^{-8}$	0	$2 \cdot 10^{-9}$	$2 \cdot 10^{-9}$	0
sm	0	0	0	$9.034 \cdot 10^{-8}$	$9.034 \cdot 10^{-8}$	0

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$-2.469 \cdot 10^{-6}$	$-2.469 \cdot 10^{-6}$	0	$5.123 \cdot 10^{-7}$	$5.123 \cdot 10^{-7}$	0		
сНВ	$-2.052 \cdot 10^{-6}$	$-2.052 \cdot 10^{-6}$	0	$9.765 \cdot 10^{-7}$	$9.765 \cdot 10^{-7}$	0		
cHBtil	$-2.317 \cdot 10^{-7}$	$-2.317 \cdot 10^{-7}$	0	$1.69 \cdot 10^{-6}$	$1.69 \cdot 10^{-6}$	0		
cHDD	$1.39 \cdot 10^{-5}$	$1.39 \cdot 10^{-5}$	0	$3.748 \cdot 10^{-5}$	$3.748 \cdot 10^{-5}$	0		
cHW	$-5.054 \cdot 10^{-6}$	$-5.054 \cdot 10^{-6}$	0	$3.186 \cdot 10^{-6}$	$3.186 \cdot 10^{-6}$	0		

cHWB	$-4.556 \cdot 10^{-6}$	$-4.556 \cdot 10^{-6}$	0	$9.672 \cdot 10^{-7}$	$9.672 \cdot 10^{-7}$	0
cHWBtil	$-1.104 \cdot 10^{-7}$	$-1.104 \cdot 10^{-7}$	0	$1.203 \cdot 10^{-6}$	$1.203 \cdot 10^{-6}$	0
cHWtil	$3.604 \cdot 10^{-7}$	$3.604 \cdot 10^{-7}$	0	$8.866 \cdot 10^{-6}$	$8.866 \cdot 10^{-6}$	0
cH13	$-4.243 \cdot 10^{-6}$	$-4.243 \cdot 10^{-6}$	0	$4.136 \cdot 10^{-7}$	$4.136 \cdot 10^{-7}$	0
cHq1	$2.061 \cdot 10^{-5}$	$2.061 \cdot 10^{-5}$	0	$2.625 \cdot 10^{-5}$	$2.625 \cdot 10^{-5}$	0
cHq3	$-2.266 \cdot 10^{-5}$	$-2.266 \cdot 10^{-5}$	0	$3.51\cdot 10^{-5}$	$3.51\cdot10^{-5}$	0
cHu	$-3.912 \cdot 10^{-6}$	$-3.912 \cdot 10^{-6}$	0	$1.066 \cdot 10^{-5}$	$1.066 \cdot 10^{-5}$	0
cll1	$2.122 \cdot 10^{-6}$	$2.122 \cdot 10^{-6}$	0	$1.034 \cdot 10^{-7}$	$1.034 \cdot 10^{-7}$	0
cuBIm	$-3.392 \cdot 10^{-7}$	$-3.392 \cdot 10^{-7}$	$2.949 \cdot 10^{-8}$	$8.962 \cdot 10^{-6}$	$8.962 \cdot 10^{-6}$	$6.695 \cdot 10^{-8}$
cuBRe	$1.987 \cdot 10^{-7}$	$1.987 \cdot 10^{-7}$	$5.034 \cdot 10^{-8}$	$1.19 \cdot 10^{-5}$	$1.19 \cdot 10^{-5}$	$8.403 \cdot 10^{-8}$
cuHIm	$3.679 \cdot 10^{-6}$	$3.679 \cdot 10^{-6}$	$2.718 \cdot 10^{-8}$	$1.135 \cdot 10^{-6}$	$1.135 \cdot 10^{-6}$	$8.809 \cdot 10^{-8}$
cuHRe	$-3.497 \cdot 10^{-6}$	$-3.497 \cdot 10^{-6}$	$2.859 \cdot 10^{-8}$	$1.148 \cdot 10^{-6}$	$1.148 \cdot 10^{-6}$	$8.712 \cdot 10^{-8}$
cuWIm	$-7.828 \cdot 10^{-7}$	$-7.828 \cdot 10^{-7}$	$2.555 \cdot 10^{-8}$	$2.565 \cdot 10^{-5}$	$2.565 \cdot 10^{-5}$	$3.898 \cdot 10^{-8}$
cuWRe	$-3.599 \cdot 10^{-7}$	$-3.599 \cdot 10^{-7}$	$2.779 \cdot 10^{-8}$	$3.905 \cdot 10^{-5}$	$3.905 \cdot 10^{-5}$	$5.122 \cdot 10^{-8}$
sm	0	0	0	$3.198 \cdot 10^{-6}$	$3.198 \cdot 10^{-6}$	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	0.1348	0.1348	0	0.06606	0.06606	0	
сНВ	0.009704	0.009704	0	0.2114	0.2114	0	
cHBtil	$1.065 \cdot 10^{-16}$	$1.065 \cdot 10^{-16}$	0	0.2364	0.2364	0	
cHDD	-1.182	-1.182	0	0.4168	0.4168	0	
cHW	0.03518	0.03518	0	2.296	2.296	0	
cHWB	0.01758	0.01758	0	0.6936	0.6936	0	
cHWBtil	$1.908 \cdot 10^{-16}$	$1.908 \cdot 10^{-16}$	0	0.7757	0.7757	0	
cHWtil	$3.487 \cdot 10^{-16}$	$3.487 \cdot 10^{-16}$	0	2.546	2.546	0	
cH13	-0.0353	-0.0353	0	0.00214	0.00214	0	

cll1	0.01765	0.01765	0	0.0005351  0.0005351	0
sm	0	0	0	$0.9258 \qquad 0.9258$	0

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

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	$-5.866 \cdot 10^{-7}$	$-5.866 \cdot 10^{-7}$	0	$2.47 \cdot 10^{-7}$	$2.47\cdot 10^{-7}$	0
cHBtil	$-5.455 \cdot 10^{-8}$	$-5.455 \cdot 10^{-8}$	0	$1.116 \cdot 10^{-6}$	$1.116 \cdot 10^{-6}$	0
cHDD	$-1.264 \cdot 10^{-7}$	$-1.264 \cdot 10^{-7}$	0	$4.539 \cdot 10^{-9}$	$4.539 \cdot 10^{-9}$	0
cHW	$-1.741 \cdot 10^{-6}$	$-1.741 \cdot 10^{-6}$	0	$1.017 \cdot 10^{-6}$	$1.017 \cdot 10^{-6}$	0
cHWB	$-1.441 \cdot 10^{-5}$	$-1.441 \cdot 10^{-5}$	0	$3.013 \cdot 10^{-6}$	$3.013 \cdot 10^{-6}$	0
cHWBtil	$1.445 \cdot 10^{-7}$	$1.445 \cdot 10^{-7}$	0	$1.422 \cdot 10^{-5}$	$1.422 \cdot 10^{-5}$	0
cHWtil	$4.165 \cdot 10^{-8}$	$4.165 \cdot 10^{-8}$	0	$3.519 \cdot 10^{-6}$	$3.519 \cdot 10^{-6}$	0
cH13	$-1.763 \cdot 10^{-6}$	$-1.763 \cdot 10^{-6}$	0	$1.721 \cdot 10^{-7}$	$1.721 \cdot 10^{-7}$	0
сНqЗ	$-8.987 \cdot 10^{-8}$	$-8.987 \cdot 10^{-8}$	0	$3.976 \cdot 10^{-8}$	$3.976 \cdot 10^{-8}$	0
cHudIm	$-1.403 \cdot 10^{-10}$	$-1.403 \cdot 10^{-10}$	$3.35\cdot 10^{-5}$	$6.315 \cdot 10^{-11}$	$6.314 \cdot 10^{-11}$	$6.691 \cdot 10^{-5}$
cHudRe	$-6.732 \cdot 10^{-12}$	$-6.732 \cdot 10^{-12}$	$3.345 \cdot 10^{-5}$	$2.275 \cdot 10^{-12}$	$2.275 \cdot 10^{-12}$	$6.689 \cdot 10^{-5}$
cM	$1.938 \cdot 10^{-6}$	$1.938 \cdot 10^{-6}$	0	$8.601 \cdot 10^{-6}$	$8.601 \cdot 10^{-6}$	0
cWtil	$2.369 \cdot 10^{-7}$	$2.369 \cdot 10^{-7}$	0	$8.601 \cdot 10^{-6}$	$8.601 \cdot 10^{-6}$	0
cdBIm	$-1.58 \cdot 10^{-10}$	$-1.58 \cdot 10^{-10}$	$3.334 \cdot 10^{-5}$	$4.828 \cdot 10^{-9}$	$4.827 \cdot 10^{-9}$	$6.672 \cdot 10^{-5}$
cdBRe	$8.807 \cdot 10^{-9}$	$8.806 \cdot 10^{-9}$	$3.336 \cdot 10^{-5}$	$2.291 \cdot 10^{-9}$	$2.291 \cdot 10^{-9}$	$6.673 \cdot 10^{-5}$
cdHIm	$-1.602 \cdot 10^{-12}$	$-1.602 \cdot 10^{-12}$	$3.34 \cdot 10^{-5}$	$9.085 \cdot 10^{-14}$	$9.085 \cdot 10^{-14}$	$6.673 \cdot 10^{-5}$
cdHRe	$2.021 \cdot 10^{-9}$	$2.021 \cdot 10^{-9}$	$3.34 \cdot 10^{-5}$	$8.072 \cdot 10^{-11}$	$8.071 \cdot 10^{-11}$	$6.674 \cdot 10^{-5}$
cdWIm	$1.577 \cdot 10^{-11}$	$1.577 \cdot 10^{-11}$	$3.341 \cdot 10^{-5}$	$1.11 \cdot 10^{-9}$	$1.11\cdot 10^{-9}$	$6.667 \cdot 10^{-5}$
cdWRe	$-3.37 \cdot 10^{-9}$	$-3.37 \cdot 10^{-9}$	$3.335 \cdot 10^{-5}$	$3.769 \cdot 10^{-10}$	$3.768 \cdot 10^{-10}$	$6.674 \cdot 10^{-5}$
cll1	$7.112 \cdot 10^{-7}$	$7.112 \cdot 10^{-7}$	0	$3.461 \cdot 10^{-8}$	$3.461 \cdot 10^{-8}$	0
cuBIm	$-6.077 \cdot 10^{-7}$	$-6.077 \cdot 10^{-7}$	$3.291 \cdot 10^{-8}$	$2.688 \cdot 10^{-5}$	$2.688 \cdot 10^{-5}$	$7.441 \cdot 10^{-8}$
cuBRe	$-1.575 \cdot 10^{-6}$	$-1.575 \cdot 10^{-6}$	$6.35 \cdot 10^{-8}$	$2.688 \cdot 10^{-5}$	$2.688 \cdot 10^{-5}$	$7.441 \cdot 10^{-8}$

cuHIm	$1.032 \cdot 10^{-6}$	$1.032 \cdot 10^{-6}$	0	$1.118 \cdot 10^{-7}$	$1.118 \cdot 10^{-7}$	0
cuHRe	$-3.898 \cdot 10^{-6}$	$-3.898 \cdot 10^{-6}$	$2.566 \cdot 10^{-8}$	$9.221 \cdot 10^{-8}$	$9.221 \cdot 10^{-8}$	$5.422 \cdot 10^{-8}$
cuWIm	$-1.194 \cdot 10^{-6}$	$-1.194 \cdot 10^{-6}$	$8.377 \cdot 10^{-8}$	$5.031 \cdot 10^{-6}$	$5.031 \cdot 10^{-6}$	$5.963 \cdot 10^{-8}$
cuWRe	$-4.852 \cdot 10^{-7}$	$-4.852 \cdot 10^{-7}$	$2.061 \cdot 10^{-8}$	$7.283 \cdot 10^{-6}$	$7.283 \cdot 10^{-6}$	$5.492 \cdot 10^{-8}$
sm	0	0	0	$8.042 \cdot 10^{-7}$	$8.042 \cdot 10^{-7}$	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHB	$6.914 \cdot 10^{-10}$	$6.914 \cdot 10^{-10}$	0	$2.642 \cdot 10^{-8}$	$2.642 \cdot 10^{-8}$	0	
cHBtil	$1.424 \cdot 10^{-9}$	$1.424 \cdot 10^{-9}$	0	$2.367 \cdot 10^{-8}$	$2.367 \cdot 10^{-8}$	0	
cHDD	$-1.431 \cdot 10^{-9}$	$-1.431 \cdot 10^{-9}$	0	$5.762 \cdot 10^{-11}$	$5.762 \cdot 10^{-11}$	0	
cHW	$7.81 \cdot 10^{-9}$	$7.81 \cdot 10^{-9}$	0	$6.591 \cdot 10^{-8}$	$6.591 \cdot 10^{-8}$	0	
cHWB	$-3.387 \cdot 10^{-7}$	$-3.387 \cdot 10^{-7}$	0	$1.545 \cdot 10^{-6}$	$1.545 \cdot 10^{-6}$	0	
cHWBtil	$-4.696 \cdot 10^{-8}$	$-4.696 \cdot 10^{-8}$	0	$7.427 \cdot 10^{-7}$	$7.427 \cdot 10^{-7}$	0	
cHWtil	$6.941 \cdot 10^{-9}$	$6.941 \cdot 10^{-9}$	0	$7.396 \cdot 10^{-8}$	$7.396 \cdot 10^{-8}$	0	
cH13	$-2.016 \cdot 10^{-8}$	$-2.016 \cdot 10^{-8}$	0	$2.026 \cdot 10^{-9}$	$2.026 \cdot 10^{-9}$	0	
cHq3	$9.65 \cdot 10^{-7}$	$9.65 \cdot 10^{-7}$	0	$4.955 \cdot 10^{-6}$	$4.955 \cdot 10^{-6}$	0	
$\mathtt{cHudIm}$	$2.156 \cdot 10^{-25}$	$2.156 \cdot 10^{-25}$	0	$2.053 \cdot 10^{-25}$	$2.053 \cdot 10^{-25}$	0	
cHudRe	$-2.308 \cdot 10^{-26}$	$-2.308 \cdot 10^{-26}$	0	$4.819 \cdot 10^{-27}$	$4.819 \cdot 10^{-27}$	0	
cW	$1.547 \cdot 10^{-8}$	$1.547 \cdot 10^{-8}$	0	$3.393 \cdot 10^{-9}$	$3.393 \cdot 10^{-9}$	0	
cWtil	$-5.631 \cdot 10^{-9}$	$-5.631 \cdot 10^{-9}$	0	$3.393 \cdot 10^{-9}$	$3.393 \cdot 10^{-9}$	0	
cdBIm	$-6.272 \cdot 10^{-17}$	$-6.272 \cdot 10^{-17}$	0	$9.778 \cdot 10^{-17}$	$9.778 \cdot 10^{-17}$	0	
cdBRe	$9.13 \cdot 10^{-17}$	$9.13 \cdot 10^{-17}$	0	$4.369 \cdot 10^{-16}$	$4.369 \cdot 10^{-16}$	0	
$\mathtt{cdHIm}$	$-3.579 \cdot 10^{-17}$	$-3.579 \cdot 10^{-17}$	0	$2.336 \cdot 10^{-18}$	$2.336 \cdot 10^{-18}$	0	
cdHRe	$-6.713 \cdot 10^{-16}$	$-6.713 \cdot 10^{-16}$	0	$1.592 \cdot 10^{-16}$	$1.592 \cdot 10^{-16}$	0	
$\mathtt{cdWIm}$	$-1.318 \cdot 10^{-17}$	$-1.318 \cdot 10^{-17}$	0	$2.553 \cdot 10^{-16}$	$2.553 \cdot 10^{-16}$	0	
cdWRe	$1.852 \cdot 10^{-16}$	$1.852 \cdot 10^{-16}$	0	$3.958 \cdot 10^{-15}$	$3.958 \cdot 10^{-15}$	0	

cll1	$9.331 \cdot 10^{-9}$	$9.331 \cdot 10^{-9}$	0	$4.688 \cdot 10^{-10}$	$4.688 \cdot 10^{-10}$	0
cuBIm	$-1.908 \cdot 10^{-16}$	$-1.908 \cdot 10^{-16}$	0	$9.236 \cdot 10^{-16}$	$9.236 \cdot 10^{-16}$	0
cuBRe	$2.012 \cdot 10^{-17}$	$2.012 \cdot 10^{-17}$	0	$9.236 \cdot 10^{-16}$	$9.236 \cdot 10^{-16}$	0
cuHIm	$1.029 \cdot 10^{-16}$	$1.029 \cdot 10^{-16}$	0	$3.373 \cdot 10^{-17}$	$3.373 \cdot 10^{-17}$	0
cuHRe	$-1.664 \cdot 10^{-16}$	$-1.664 \cdot 10^{-16}$	0	$3.373 \cdot 10^{-17}$	$3.373 \cdot 10^{-17}$	0
cuWIm	$-2.033 \cdot 10^{-17}$	$-2.033 \cdot 10^{-17}$	0	$6.228 \cdot 10^{-16}$	$6.228 \cdot 10^{-16}$	0
cuWRe	$3.885 \cdot 10^{-17}$	$3.885 \cdot 10^{-17}$	0	$3.859 \cdot 10^{-16}$	$3.859 \cdot 10^{-16}$	0
sm	0	0	0	$8.551 \cdot 10^{-9}$	$8.551 \cdot 10^{-9}$	0

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

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
cHDD	-0.003854	-0.003854	0	0.0001552	0.0001552	0
cHW	0.01191	0.01191	0	0.05665	0.05665	0
cHWB	-0.005794	-0.005794	0	0.0004183	0.0004183	0
cHWtil	$-4.304 \cdot 10^{-15}$	$-4.304 \cdot 10^{-15}$	0	0.05171	0.05171	0
cH13	-0.008821	-0.008821	0	0.0008864	0.0008864	0
сНqЗ	0.3965	0.3965	0	1.886	1.886	0
$\mathtt{cHudIm}$	$3.735 \cdot 10^{-23}$	$3.735 \cdot 10^{-23}$	0	$4.575 \cdot 10^{-20}$	$4.575 \cdot 10^{-20}$	0
cHudRe	$-2.344 \cdot 10^{-19}$		0	$5.744 \cdot 10^{-20}$		0
$\mathtt{cdHIm}$		$-2.395 \cdot 10^{-13}$	0	$4.422 \cdot 10^{-11}$	$4.422 \cdot 10^{-11}$	0
cdHRe	$-3.186 \cdot 10^{-11}$	$-3.186 \cdot 10^{-11}$	0	$4.514 \cdot 10^{-11}$	$4.514 \cdot 10^{-11}$	0
$\mathtt{cdWIm}$	$7.487 \cdot 10^{-15}$	$7.487 \cdot 10^{-15}$	0	$1.474 \cdot 10^{-9}$	$1.474 \cdot 10^{-9}$	0
cdWRe	$-4.597 \cdot 10^{-11}$	$-4.597 \cdot 10^{-11}$	0	$1.335 \cdot 10^{-9}$	$1.335 \cdot 10^{-9}$	0
cll1	0.004084	0.004084	0	0.0002052	0.0002052	0
cuHIm	$5.123 \cdot 10^{-14}$	$5.123 \cdot 10^{-14}$	0	$9.375 \cdot 10^{-12}$	$9.375 \cdot 10^{-12}$	0
cuHRe	$-1.229 \cdot 10^{-12}$	$-1.229 \cdot 10^{-12}$	0	$9.375 \cdot 10^{-12}$	$9.375 \cdot 10^{-12}$	0
cuWIm	$-1.051 \cdot 10^{-14}$		0	$2.856 \cdot 10^{-10}$	$2.856 \cdot 10^{-10}$	0
cuWRe	$-9.129 \cdot 10^{-12}$	$-9.129 \cdot 10^{-12}$	0	$3.154 \cdot 10^{-10}$	$3.154 \cdot 10^{-10}$	0

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

		interfer	rence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cHDD	-0.5374	-0.5374	0	0.05033	0.05033	0		
cHW	-0.04024	-0.04024	0	0.05194	0.05194	0		
cHWB	-0.6529	-0.6529	0	0.2251	0.2251	0		
cHWtil	0.0001386	0.0001386	0	0.07128	0.07128	0		
cH13	-0.5421	-0.5421	0	0.1122	0.1122	0		
сНq3	-1.712	-1.712	0	1.92	1.92	0		
$\mathtt{cHudIm}$	$-1.881 \cdot 10^{-7}$	$-1.881 \cdot 10^{-7}$	$3.344 \cdot 10^{-5}$	0.0001709	0.0001709	$6.69 \cdot 10^{-5}$		
cHudRe	-0.001019	-0.001019	$3.346 \cdot 10^{-5}$	0.0001525	0.0001524	$6.684 \cdot 10^{-5}$		
$\mathtt{cdHIm}$	$4.619 \cdot 10^{-8}$	$4.619 \cdot 10^{-8}$	$3.336 \cdot 10^{-5}$	$3.638 \cdot 10^{-5}$	$3.637 \cdot 10^{-5}$	$6.672 \cdot 10^{-5}$		
cdHRe	-0.0003391	-0.0003391	$3.338 \cdot 10^{-5}$	$4.458 \cdot 10^{-5}$	$4.458 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$		
$\mathtt{cdWIm}$	$-3.272 \cdot 10^{-7}$	$-3.272 \cdot 10^{-7}$	$3.334 \cdot 10^{-5}$	0.0006449	0.0006448	$6.674 \cdot 10^{-5}$		
cdWRe	-0.0001139	-0.0001139	$3.344 \cdot 10^{-5}$	0.001254	0.001254	$6.673 \cdot 10^{-5}$		
cll1	0.1386	0.1386	0	0.01721	0.01721	0		
cuHIm	-0.0008253	-0.0008253	$3.635 \cdot 10^{-8}$	0.05774	0.05774	$6.928 \cdot 10^{-8}$		
cuHRe	0.09508	0.09508	$2.103 \cdot 10^{-8}$	0.05117	0.05117	$5.863 \cdot 10^{-8}$		
cuWIm	0.0001586	0.0001586	0	2.143	2.143	$4.667 \cdot 10^{-8}$		
cuWRe	0.1057	0.1057	0	1.101	1.101	$9.079 \cdot 10^{-8}$		
sm	0	0	0	2.575	2.575	0		

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

сНВ	$1.381 \cdot 10^{-9}$	$1.381 \cdot 10^{-9}$	0	$2.392 \cdot 10^{-8}$	$2.392 \cdot 10^{-8}$	0
cHBtil	$1.524 \cdot 10^{-9}$	$1.524 \cdot 10^{-9}$	0	$4.847 \cdot 10^{-8}$	$4.847 \cdot 10^{-8}$	0
cHDD	$-2.68 \cdot 10^{-9}$	$-2.68 \cdot 10^{-9}$	0	$1.08 \cdot 10^{-10}$	$1.08 \cdot 10^{-10}$	0
cHW	$2.118 \cdot 10^{-8}$	$2.118 \cdot 10^{-8}$	0	$1.026 \cdot 10^{-7}$	$1.026 \cdot 10^{-7}$	0
cHWB	$-1.274 \cdot 10^{-8}$	$-1.274 \cdot 10^{-8}$	0	$5.653 \cdot 10^{-8}$	$5.653 \cdot 10^{-8}$	0
cHWBtil	$-9.836 \cdot 10^{-8}$	$-9.836 \cdot 10^{-8}$	0	$1.272 \cdot 10^{-6}$	$1.272 \cdot 10^{-6}$	0
cHWtil	$2.077 \cdot 10^{-8}$	$2.077 \cdot 10^{-8}$	0	$1.922 \cdot 10^{-7}$	$1.922 \cdot 10^{-7}$	0
cH13	$7.31 \cdot 10^{-8}$	$7.31 \cdot 10^{-8}$	0	$2.574 \cdot 10^{-7}$	$2.574 \cdot 10^{-7}$	0
cM	$-2.565 \cdot 10^{-9}$	$-2.565 \cdot 10^{-9}$	0	$3.089 \cdot 10^{-9}$	$3.089 \cdot 10^{-9}$	0
cWtil	$-7.011 \cdot 10^{-10}$	$-7.011 \cdot 10^{-10}$	0	$3.089 \cdot 10^{-9}$	$3.089 \cdot 10^{-9}$	0
ceBIm	$1.065 \cdot 10^{-20}$	$1.065 \cdot 10^{-20}$	0	$2.515 \cdot 10^{-20}$	$2.515 \cdot 10^{-20}$	0
ceBRe	$-1.767 \cdot 10^{-18}$	$-1.767 \cdot 10^{-18}$	0	$1.942 \cdot 10^{-17}$	$1.942 \cdot 10^{-17}$	0
$\mathtt{ceHIm}$	$-7.633 \cdot 10^{-20}$	$-7.633 \cdot 10^{-20}$	0	$3.013 \cdot 10^{-19}$	$3.013 \cdot 10^{-19}$	0
ceHRe	$2.669 \cdot 10^{-19}$	$2.669 \cdot 10^{-19}$	0	$5.36 \cdot 10^{-21}$	$5.36 \cdot 10^{-21}$	0
ceWIm	$-3.839 \cdot 10^{-19}$	$-3.839 \cdot 10^{-19}$	0	$1.643 \cdot 10^{-18}$	$1.643 \cdot 10^{-18}$	0
ceWRe	$-4.535 \cdot 10^{-22}$	$-4.535 \cdot 10^{-22}$	0	$1.643 \cdot 10^{-18}$	$1.643 \cdot 10^{-18}$	0
cll1	$1.013 \cdot 10^{-9}$	$1.013 \cdot 10^{-9}$	0	$5.091 \cdot 10^{-11}$	$5.091 \cdot 10^{-11}$	0
sm	0	0	0	$1.615 \cdot 10^{-8}$	$1.615 \cdot 10^{-8}$	0

### 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	-0.0006847	-0.0006847	0	$2.758 \cdot 10^{-5}$	$2.758 \cdot 10^{-5}$	0	
cHW	0.004583	0.004583	0	0.0218	0.0218	0	
cHWB	-0.002109	-0.002109	0	0.0001523	0.0001523	0	
cHWtil	$-3.888 \cdot 10^{-12}$	$-3.888 \cdot 10^{-12}$	0	0.02567	0.02567	0	
cH13	0.112	0.112	0	0.5218	0.5218	0	
ceHTm	$4.086 \cdot 10^{-11}$	$4.086 \cdot 10^{-11}$	0	$7.486 \cdot 10^{-9}$	$7.486 \cdot 10^{-9}$	0	

ceHRe	$-1.383 \cdot 10^{-8}$	$-1.383 \cdot 10^{-8}$	0	$7.982 \cdot 10^{-9}$	$7.982 \cdot 10^{-9}$	0
ceWIm	$9.275 \cdot 10^{-12}$	$9.275 \cdot 10^{-12}$	0	$2.174 \cdot 10^{-7}$	$2.174 \cdot 10^{-7}$	0
ceWRe	$-7.968 \cdot 10^{-9}$	$-7.968 \cdot 10^{-9}$	0	$2.174 \cdot 10^{-7}$	$2.174 \cdot 10^{-7}$	0
cll1	0.00112	0.00112	0	$5.628 \cdot 10^{-5}$	$5.628 \cdot 10^{-5}$	0
sm	0	0	0	0.004081	0.004081	0

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

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
сНВ	$-2.173 \cdot 10^{-5}$	$-2.173 \cdot 10^{-5}$	0	0.009179	0.009179	0		
cHBtil	$-4.973 \cdot 10^{-10}$	$-4.973 \cdot 10^{-10}$	0	0.005137	0.005137	0		
cHDD	$-2.342 \cdot 10^{-6}$	$-2.342 \cdot 10^{-6}$	0	$1.775 \cdot 10^{-8}$	$1.775 \cdot 10^{-8}$	0		
cHW	$-8.254 \cdot 10^{-5}$	$-8.254 \cdot 10^{-5}$	0	0.01682	0.01682	0		
cHWB	$6.644 \cdot 10^{-5}$	$6.644 \cdot 10^{-5}$	0	0.01148	0.01148	0		
cHWBtil	$-3.131 \cdot 10^{-10}$	$-3.131 \cdot 10^{-10}$	0	0.006426	0.006426	0		
cHWtil	$4.973 \cdot 10^{-10}$	$4.973 \cdot 10^{-10}$	0	0.00927	0.00927	0		
cH13	$-6.385 \cdot 10^{-5}$	$-6.385 \cdot 10^{-5}$	0	$1.935 \cdot 10^{-6}$	$1.935 \cdot 10^{-6}$	0		
$\mathtt{cdBIm}$	$-3.943 \cdot 10^{-24}$	$-3.115 \cdot 10^{-24}$	0.2098	0.001295	0.001295	$6.674 \cdot 10^{-5}$		
cdBRe	$-3.085 \cdot 10^{-7}$	$-3.085 \cdot 10^{-7}$	$3.336 \cdot 10^{-5}$	0.0001902	0.0001901	$6.674 \cdot 10^{-5}$		
cdHIm	$-4.235 \cdot 10^{-22}$	$-4.235 \cdot 10^{-22}$	$3.814 \cdot 10^{-5}$	$2.841 \cdot 10^{-7}$	$2.841 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$		
cdHRe	$-5.337 \cdot 10^{-5}$	$-5.337 \cdot 10^{-5}$	$3.337 \cdot 10^{-5}$	$1.618 \cdot 10^{-6}$	$1.618 \cdot 10^{-6}$	$6.675 \cdot 10^{-5}$		
cdWIm	$1.134 \cdot 10^{-24}$	$1.134 \cdot 10^{-24}$	$-3.175 \cdot 10^{-6}$	0.0003945	0.0003945	$6.674 \cdot 10^{-5}$		
cdWRe	$1.703 \cdot 10^{-7}$	$1.703 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$5.795 \cdot 10^{-5}$	$5.794 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$		
cll1	$3.192 \cdot 10^{-5}$	$3.192 \cdot 10^{-5}$	0	$4.838 \cdot 10^{-7}$	$4.838 \cdot 10^{-7}$	0		
sm	0	0	0	$7.728 \cdot 10^{-5}$	$7.728 \cdot 10^{-5}$	0		

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

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сНВ	$-8.712 \cdot 10^{-6}$	$-8.712 \cdot 10^{-6}$	0	0.02829	0.02829	0	
cHBtil	$-6.611 \cdot 10^{-10}$	$-6.611 \cdot 10^{-10}$	0	0.02405	0.02405	0	
cHDD	$-1.464 \cdot 10^{-6}$	$-1.464 \cdot 10^{-6}$	0	$1.11 \cdot 10^{-8}$	$1.11 \cdot 10^{-8}$	0	
cHW	$-7.727 \cdot 10^{-6}$	$-7.727 \cdot 10^{-6}$	0	0.01583	0.01583	0	
cHWB	$7.163 \cdot 10^{-6}$	$7.163 \cdot 10^{-6}$	0	0.017	0.017	0	
cHWBtil	$-4.163 \cdot 10^{-10}$	$-4.163 \cdot 10^{-10}$	0	0.01445	0.01445	0	
cHWtil	$6.611 \cdot 10^{-10}$	$6.611 \cdot 10^{-10}$	0	0.01286	0.01286	0	
cH13	$-1.365 \cdot 10^{-5}$	$-1.365 \cdot 10^{-5}$	0	$4.137 \cdot 10^{-7}$	$4.137 \cdot 10^{-7}$	0	
cll1	$6.825 \cdot 10^{-6}$	$6.825 \cdot 10^{-6}$	0	$1.034 \cdot 10^{-7}$	$1.034 \cdot 10^{-7}$	0	
cuBIm	$-3.815 \cdot 10^{-22}$	$-3.815 \cdot 10^{-22}$	0	$7.059 \cdot 10^{-5}$	$7.059 \cdot 10^{-5}$	0	
cuBRe	$1.306 \cdot 10^{-9}$	$1.306 \cdot 10^{-9}$	0	$7.059 \cdot 10^{-5}$	$7.059 \cdot 10^{-5}$	0	
$\mathtt{cuHIm}$	$-4.235 \cdot 10^{-22}$	$-4.235 \cdot 10^{-22}$	0	$3.141 \cdot 10^{-7}$	$3.141 \cdot 10^{-7}$	0	
cuHRe	$-1.036 \cdot 10^{-5}$	$-1.036 \cdot 10^{-5}$	0	$3.141 \cdot 10^{-7}$	$3.141 \cdot 10^{-7}$	0	
cuWIm	$5.789 \cdot 10^{-23}$	$5.789 \cdot 10^{-23}$	0	$9.231 \cdot 10^{-6}$	$9.231 \cdot 10^{-6}$	0	
cuWRe	$7.209 \cdot 10^{-10}$	$7.209 \cdot 10^{-10}$	0	$2.151 \cdot 10^{-5}$	$2.151 \cdot 10^{-5}$	0	
sm	0	0	0	$4.831 \cdot 10^{-5}$	$4.831 \cdot 10^{-5}$	0	

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	$-9.289 \cdot 10^{-12}$	$-9.289 \cdot 10^{-12}$	0	0.008149	0.008149	0	
cHBtil	$1.386 \cdot 10^{-15}$	$1.386 \cdot 10^{-15}$	0	0.005518	0.005518	0	
cHDD	$-3.17 \cdot 10^{-12}$	$-3.17 \cdot 10^{-12}$	0	$2.403 \cdot 10^{-14}$	$2.403 \cdot 10^{-14}$	0	
cHW	$-3.161 \cdot 10^{-12}$	$-3.161 \cdot 10^{-12}$	0	0.01046	0.01046	0	
cHWB	$2.84 \cdot 10^{-11}$	$2.84 \cdot 10^{-11}$	0	0.01019	0.01019	0	
cHWBtil	$8.73 \cdot 10^{-16}$	$8.73 \cdot 10^{-16}$	0	0.006901	0.006901	0	

cHWtil	$-1.386 \cdot 10^{-15}$	$-1.386 \cdot 10^{-15}$	0	0.009957	0.009957	0
cH13	$-1.352 \cdot 10^{-11}$	$-1.352 \cdot 10^{-11}$	0	$4.098 \cdot 10^{-13}$	$4.098 \cdot 10^{-13}$	0
cdBIm	$-4.368 \cdot 10^{-36}$	$-4.368 \cdot 10^{-36}$	0	$1.49 \cdot 10^{-9}$	$1.49 \cdot 10^{-9}$	0
cdBRe	$-8.147 \cdot 10^{-20}$	$-8.147 \cdot 10^{-20}$	0	$1.398 \cdot 10^{-9}$	$1.398 \cdot 10^{-9}$	0
$\mathtt{cdHIm}$	$-4.039 \cdot 10^{-28}$	$-4.039 \cdot 10^{-28}$	0	$3.844 \cdot 10^{-13}$	$3.844 \cdot 10^{-13}$	0
cdHRe	$-3.033 \cdot 10^{-11}$	$-3.033 \cdot 10^{-11}$	0	$9.194 \cdot 10^{-13}$	$9.194 \cdot 10^{-13}$	0
cdWIm	$2.958 \cdot 10^{-37}$	$2.958 \cdot 10^{-37}$	0	$4.541 \cdot 10^{-10}$	$4.541 \cdot 10^{-10}$	0
cdWRe	$4.498 \cdot 10^{-20}$	$4.498 \cdot 10^{-20}$	0	$4.26 \cdot 10^{-10}$	$4.26 \cdot 10^{-10}$	0
cll1	$6.759 \cdot 10^{-12}$	$6.759 \cdot 10^{-12}$	0	$1.024 \cdot 10^{-13}$	$1.024 \cdot 10^{-13}$	0
sm	0	0	0	$1.046 \cdot 10^{-10}$	$1.046 \cdot 10^{-10}$	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	$-2.554 \cdot 10^{-13}$	$-2.554 \cdot 10^{-13}$	0	0.01928	0.01928	0	
cHBtil	$-1.032 \cdot 10^{-17}$	$-1.032 \cdot 10^{-17}$	0	0.01555	0.01555	0	
cHDD	$-1.072 \cdot 10^{-13}$	$-1.072 \cdot 10^{-13}$	0	$8.126 \cdot 10^{-16}$	$8.126 \cdot 10^{-16}$	0	
cHW	$-1.206 \cdot 10^{-13}$	$-1.206 \cdot 10^{-13}$	0	0.004115	0.004115	0	
cHWB	$1.477 \cdot 10^{-13}$	$1.477 \cdot 10^{-13}$	0	0.006566	0.006566	0	
cHWBtil	$-6.501 \cdot 10^{-18}$	$-6.501 \cdot 10^{-18}$	0	0.005296	0.005296	0	
cHWtil	$1.032 \cdot 10^{-17}$	$1.032 \cdot 10^{-17}$	0	0.003134	0.003134	0	
cH13	$-6.514 \cdot 10^{-13}$	$-6.514 \cdot 10^{-13}$	0	$1.974 \cdot 10^{-14}$	$1.974 \cdot 10^{-14}$	0	
ceBIm	$2.984 \cdot 10^{-29}$	$2.984 \cdot 10^{-29}$	0	$4.666 \cdot 10^{-12}$	$4.666 \cdot 10^{-12}$	0	
ceBRe	$2.895 \cdot 10^{-23}$	$2.895 \cdot 10^{-23}$	0	$6.317 \cdot 10^{-12}$	$6.317 \cdot 10^{-12}$	0	
ceHIm	$1.262 \cdot 10^{-29}$	$1.262 \cdot 10^{-29}$	0	$1.76 \cdot 10^{-14}$	$1.76 \cdot 10^{-14}$	0	
ceHRe	$-4.289 \cdot 10^{-13}$	$-4.289 \cdot 10^{-13}$	0	$1.3 \cdot 10^{-14}$	$1.3 \cdot 10^{-14}$	0	
ceWIm	$-1.647 \cdot 10^{-29}$	$-1.647 \cdot 10^{-29}$	0	$1.422 \cdot 10^{-12}$	$1.422 \cdot 10^{-12}$	0	
ceWRe	$4.757 \cdot 10^{-24}$	$4.757 \cdot 10^{-24}$	0	$1.422 \cdot 10^{-12}$	$1.422 \cdot 10^{-12}$	0	

cll1	$3.257 \cdot 10^{-13}$	$3.257 \cdot 10^{-13}$	0	$4.936 \cdot 10^{-15}  4.936 \cdot 10^{-15}$	0
sm	0	0	0	$3.537 \cdot 10^{-12}  3.537 \cdot 10^{-12}$	0

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

	interference			square
	mod1	mod2	$1-{\tt mod2/mod1}$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
сНВ	-0.02012	-0.02012	0	$0.01969 \qquad 0.01969 \qquad 0$
cHBtil	0.0003687	0.0003687	0	$0.02963 \qquad 0.02963 \qquad 0$
cHDD	-0.04433	-0.04433	0	0.0003359  0.0003359  0
cHW	-0.01591	-0.01591	0	$0.01051 \qquad 0.01051 \qquad 0$
cHWB	0.01654	0.01654	0	$0.01205 \qquad 0.01205 \qquad 0$
cHWBtil	0.0002322	0.0002322	0	$0.01803 \qquad 0.01803 \qquad 0$
cHWtil	-0.0003687	-0.0003687	0	$0.01534 \qquad 0.01534 \qquad 0$
cH13	-0.05945	-0.05945	0	0.001802  0.001802  0
cll1	0.02973	0.02973	0	$0.0004505  0.0004505 \qquad 0$
cuBIm	$-1.293 \cdot 10^{-16}$	$2.342 \cdot 10^{-17}$	1.181	1.01 1.01 $9.902 \cdot 10^{-8}$
cuBRe	0.855	0.855	$2.339 \cdot 10^{-8}$	1.01 1.01 $9.902 \cdot 10^{-8}$
$\mathtt{cuHIm}$	$-2.602 \cdot 10^{-18}$	$9.458 \cdot 10^{-20}$	1.036	$0.00213 \qquad 0.00213 \qquad 9.39 \cdot 10^{-8}$
cuHRe	-0.05574	-0.05574	$3.588 \cdot 10^{-8}$	$0.00169 \qquad 0.00169 \qquad 5.918 \cdot 10^{-8}$
cuWIm	$4.013 \cdot 10^{-17}$	$4.272 \cdot 10^{-17}$	-0.06467	$0.7184 \qquad 0.7184 \qquad 5.568 \cdot 10^{-8}$
cuWRe	0.472	0.472	$4.238 \cdot 10^{-8}$	$0.3078 \qquad 0.3078 \qquad 6.498 \cdot 10^{-8}$
sm	0	0	0	1.462   1.462   0

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	0.0003232	0.0003232	0	0.003368	0.003368	0

cHBtil	$2.648 \cdot 10^{-7}$	$2.648 \cdot 10^{-7}$	0	0.003865	0.003865	0
cHDD	$-1.308 \cdot 10^{-5}$	$-1.308 \cdot 10^{-5}$	0	$4.055 \cdot 10^{-6}$	$4.055 \cdot 10^{-6}$	0
cHW	0.001512	0.001512	0	0.007871	0.007871	0
cHWB	0.0006057	0.0006057	0	0.002473	0.002473	0
cHWBtil	$1.668 \cdot 10^{-7}$	$1.668 \cdot 10^{-7}$	0	0.002553	0.002553	0
cHWtil	$-2.648 \cdot 10^{-7}$	$-2.648 \cdot 10^{-7}$	0	0.008387	0.008387	0
сНе	-0.04016	-0.04016	0	0.3134	0.3134	0
cHl1	0.04581	0.04581	0	0.3134	0.3134	0
cH13	0.04101	0.04101	0	0.2741	0.2741	0
ceBIm	$6.477 \cdot 10^{-12}$	$6.477 \cdot 10^{-12}$	0	$5.275 \cdot 10^{-8}$	$5.275 \cdot 10^{-8}$	0
ceBRe	$-3.428 \cdot 10^{-10}$	$-3.428 \cdot 10^{-10}$	0	$4.319 \cdot 10^{-8}$	$4.319 \cdot 10^{-8}$	0
$\mathtt{ceHIm}$	$7.801 \cdot 10^{-16}$	$7.801 \cdot 10^{-16}$	0	$7.459 \cdot 10^{-9}$	$7.459 \cdot 10^{-9}$	0
ceHRe	$5.701 \cdot 10^{-10}$	$5.701 \cdot 10^{-10}$	0	$7.491 \cdot 10^{-9}$	$7.491 \cdot 10^{-9}$	0
ceWIm	$1.173 \cdot 10^{-11}$	$1.173 \cdot 10^{-11}$	0	$1.731 \cdot 10^{-7}$	$1.731 \cdot 10^{-7}$	0
ceWRe	$-6.21 \cdot 10^{-10}$	$-6.21 \cdot 10^{-10}$	0	$1.731 \cdot 10^{-7}$	$1.731 \cdot 10^{-7}$	0
cll1	0.0003557	0.0003557	0	$2.947 \cdot 10^{-5}$	$2.947 \cdot 10^{-5}$	0
sm	0	0	0	0.002453	0.002453	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	0.0007227	0.0007227	0	0.0006154	0.0006154	0	
cHBtil	$-1.423 \cdot 10^{-19}$	$-1.423 \cdot 10^{-19}$	0	0.0008995	0.0008995	0	
cHDD	$-1.642 \cdot 10^{-18}$	$-1.642 \cdot 10^{-18}$	0	$2.024 \cdot 10^{-34}$	$2.024 \cdot 10^{-34}$	0	
cHW	0.002535	0.002535	0	0.007082	0.007082	0	
cHWB	0.001309	0.001309	0	0.002019	0.002019	0	
cHWBtil	$-3.027 \cdot 10^{-19}$	$-3.027 \cdot 10^{-19}$	0	0.002952	0.002952	0	
cHWtil	$-2.891 \cdot 10^{-19}$	$-2.891 \cdot 10^{-19}$	0	0.009686	0.009686	0	

cHl1	-0.09602	-0.09602	0	0.35	0.35	0
cH13	0.08834	0.08834	0	0.3167	0.3167	0
cll1	0.000747	0.000747	0	$2.264 \cdot 10^{-5}$	$2.264 \cdot 10^{-5}$	0
sm	0	0	0	0.003737	0.003737	0

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

	interference			square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
cHB	0.001524	0.001524	0	$0.001928 \qquad 0.001928 \qquad 0$
cHBtil	$-3.743 \cdot 10^{-7}$	$-3.743 \cdot 10^{-7}$	0	$0.001598 \qquad 0.001598 \qquad 0$
cHDD	-0.0001112	-0.0001112	0	$1.021 \cdot 10^{-5}  1.021 \cdot 10^{-5}$
cHW	0.006205	0.006205	0	$0.02061 \qquad 0.02061 \qquad 0$
cHWB	0.00412	0.00412	0	0.006306 $0.006306$ $0$
cHWBtil	$-2.299 \cdot 10^{-7}$	$-2.299 \cdot 10^{-7}$	0	$0.005278 \qquad 0.005278 \qquad 0$
cHWtil	$3.955 \cdot 10^{-7}$	$3.955 \cdot 10^{-7}$	0	$0.03104 \qquad 0.03104 \qquad 0$
cHd	-0.01984	-0.01984	0	$0.4936 \qquad 0.4936 \qquad 0$
cH13	-0.004105	-0.004105	0	$0.0003213 \qquad 0.0003213 \qquad 0$
cHq1	0.03909	0.03909	0	$0.1751 \qquad 0.1751 \qquad 0$
cHq3	0.233	0.233	0	1.011   1.011   0
cdBIm	$6.827 \cdot 10^{-8}$	$6.827 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	$0.0001233  0.0001233  6.675 \cdot 10^{-5}$
cdBRe	$-1.684 \cdot 10^{-5}$	$-1.684 \cdot 10^{-5}$	$3.338 \cdot 10^{-5}$	$0.0002676 \qquad 0.0002675 \qquad 6.675 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$1.764 \cdot 10^{-10}$	$1.764 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$3.634 \cdot 10^{-5}  3.633 \cdot 10^{-5}  6.674 \cdot 10^{-5}$
cdHRe	-0.0002254	-0.0002254	$3.336 \cdot 10^{-5}$	$4.218 \cdot 10^{-5}  4.217 \cdot 10^{-5} \qquad 6.674 \cdot 10^{-5}$
cdWIm	$1.237 \cdot 10^{-7}$	$1.237 \cdot 10^{-7}$	$3.331 \cdot 10^{-5}$	$0.0004046 \qquad 0.0004046 \qquad 6.673 \cdot 10^{-5}$
cdWRe	$-3.05 \cdot 10^{-5}$	$-3.05 \cdot 10^{-5}$	$3.338 \cdot 10^{-5}$	$0.000878 \qquad 0.0008779 \qquad 6.673 \cdot 10^{-5}$
cll1	0.002053	0.002053	0	$8.033 \cdot 10^{-5}  8.033 \cdot 10^{-5}$
sm	0	0	0	$0.007051 \qquad 0.007051 \qquad 0$

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

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сНВ	0.001334	0.001334	0	0.001618	0.001618	0	
cHBtil	$-3.112 \cdot 10^{-7}$	$-3.112 \cdot 10^{-7}$	0	0.001409	0.001409	0	
cHDD	-0.0001188	-0.0001188	0	$1.176 \cdot 10^{-6}$	$1.176 \cdot 10^{-6}$	0	
cHW	0.006239	0.006239	0	0.02062	0.02062	0	
cHWB	0.00344	0.00344	0	0.005296	0.005296	0	
cHWBtil	$-1.96 \cdot 10^{-7}$	$-1.96 \cdot 10^{-7}$	0	0.004655	0.004655	0	
cHWtil	$3.112 \cdot 10^{-7}$	$3.112 \cdot 10^{-7}$	0	0.02738	0.02738	0	
cHd	-0.02886	-0.02886	0	0.6757	0.6757	0	
cH13	-0.004111	-0.004111	0	0.0003204	0.0003204	0	
cHq1	0.1099	0.1099	0	0.4745	0.4745	0	
сНqЗ	0.2341	0.2341	0	1.011	1.011	0	
$\mathtt{cdBIm}$	$2.774 \cdot 10^{-11}$	$2.774 \cdot 10^{-11}$	0	$8.611 \cdot 10^{-8}$	$8.611 \cdot 10^{-8}$	0	
cdBRe	$-8.345 \cdot 10^{-9}$	$-8.345 \cdot 10^{-9}$	0	$1.324 \cdot 10^{-7}$	$1.324 \cdot 10^{-7}$	0	
$\mathtt{cdHIm}$	$5.022 \cdot 10^{-14}$	$5.022 \cdot 10^{-14}$	0	$1.77 \cdot 10^{-8}$	$1.77 \cdot 10^{-8}$	0	
cdHRe	$-1.904 \cdot 10^{-8}$		0	$1.804 \cdot 10^{-8}$	$1.804 \cdot 10^{-8}$	0	
$\mathtt{cdWIm}$	$5.024 \cdot 10^{-11}$	$5.024 \cdot 10^{-11}$	0	$2.826 \cdot 10^{-7}$	$2.826 \cdot 10^{-7}$	0	
cdWRe	$-1.512 \cdot 10^{-8}$	$-1.512 \cdot 10^{-8}$	0	$4.343 \cdot 10^{-7}$	$4.343 \cdot 10^{-7}$	0	
cll1	0.002055	0.002055	0	$8.009 \cdot 10^{-5}$	$8.009 \cdot 10^{-5}$	0	
sm	0	0	0	0.009369	0.009369	0	

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

		interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHB	-0.01279	-0.01279	0	0.004512	0.004512	0	

cHBtil	$1.426 \cdot 10^{-7}$	$1.426 \cdot 10^{-7}$	0	0.005319	0.005319	0
cHDD	-0.007808	-0.007808	0	0.0171	0.0171	0
cHW	-0.06744	-0.06744	0	0.03175	0.03175	0
cHWB	-0.046	-0.046	0	0.007706	0.007706	0
cHWBtil	$4 \cdot 10^{-6}$	$4 \cdot 10^{-6}$	0	0.004674	0.004674	0
cHWtil	$1.403 \cdot 10^{-5}$	$1.403 \cdot 10^{-5}$	0	0.02946	0.02946	0
cH13	-0.673	-0.673	0	0.04611	0.04611	0
cHq1	2.088	2.088	0	1.496	1.496	0
cHq3	-2.077	-2.077	0	1.061	1.061	0
cHu	-2.206	-2.206	0	1.205	1.205	0
cll1	0.3365	0.3365	0	0.01153	0.01153	0
cuBIm	-0.0001904	-0.0001904	0	0.7258	0.7258	$5.511 \cdot 10^{-8}$
cuBRe	-0.02545	-0.02545	$3.929 \cdot 10^{-8}$	0.737	0.737	$6.784 \cdot 10^{-8}$
cuHIm	$-1.118 \cdot 10^{-5}$	$-1.118 \cdot 10^{-5}$	0	0.0681	0.0681	$5.874 \cdot 10^{-8}$
cuHRe	0.005789	0.005789	$3.455 \cdot 10^{-8}$	0.06825	0.06825	$5.861 \cdot 10^{-8}$
cuWIm	0.0004176	0.0004176	$2.395 \cdot 10^{-8}$	2.151	2.151	$4.649 \cdot 10^{-8}$
cuWRe	0.04611	0.04611	$2.169 \cdot 10^{-8}$	2.418	2.418	$8.27 \cdot 10^{-8}$
sm	0	0	0	2.305	2.305	0

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	0.0004386	0.0004386	0	0.003678	0.003678	0
cHBtil	$-6.235 \cdot 10^{-7}$	$-6.235 \cdot 10^{-7}$	0	0.004747	0.004747	0
cHDD	-0.0001299	-0.0001299	0	$4.677 \cdot 10^{-6}$	$4.677 \cdot 10^{-6}$	0
cHW	0.006442	0.006442	0	0.02604	0.02604	0
cHWB	0.00095	0.00095	0	0.003831	0.003831	0
cHWBtil	$-3.926 \cdot 10^{-7}$	$-3.926 \cdot 10^{-7}$	0	0.004635	0.004635	0

cHWtil	$6.235 \cdot 10^{-7}$	$6.235 \cdot 10^{-7}$	0	0.02733	0.02733	0
cH13	-0.002494	-0.002494	0	0.0002676	0.0002676	0
cHq1	-0.1852	-0.1852	0	0.9805	0.9805	0
сНqЗ	0.1395	0.1395	0	0.7386	0.7386	0
cHu	0.05761	0.05761	0	0.6743	0.6743	0
cll1	0.001247	0.001247	0	$6.691 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$	0
cuBIm	$-1.499 \cdot 10^{-14}$	$-1.499 \cdot 10^{-14}$	0	$4.635 \cdot 10^{-11}$	$4.635 \cdot 10^{-11}$	0
cuBRe	$2.466 \cdot 10^{-12}$	$2.466 \cdot 10^{-12}$	0	$4.635 \cdot 10^{-11}$	$4.635 \cdot 10^{-11}$	0
cuHIm	$-4.274 \cdot 10^{-18}$	$-4.274 \cdot 10^{-18}$	0	$9.367 \cdot 10^{-12}$	$9.367 \cdot 10^{-12}$	0
cuHRe	$1.497 \cdot 10^{-12}$	$1.497 \cdot 10^{-12}$	0	$9.367 \cdot 10^{-12}$	$9.367 \cdot 10^{-12}$	0
cuWIm	$-2.472 \cdot 10^{-14}$	$-2.472 \cdot 10^{-14}$	0	$1.678 \cdot 10^{-10}$	$1.678 \cdot 10^{-10}$	0
cuWRe	$-4.467 \cdot 10^{-12}$	$-4.467 \cdot 10^{-12}$	0	$1.521 \cdot 10^{-10}$	$1.521 \cdot 10^{-10}$	0
sm	0	0	0	0.007245	0.007245	0

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$-1.148 \cdot 10^{-10}$	$-1.148 \cdot 10^{-10}$	0	$9.934 \cdot 10^{-11}$	$9.934 \cdot 10^{-11}$	0		
cHB	$-1.678 \cdot 10^{-8}$	$-1.678 \cdot 10^{-8}$	0	$2.062 \cdot 10^{-10}$	$2.062 \cdot 10^{-10}$	0		
cHBtil	$1.562 \cdot 10^{-6}$	$1.562 \cdot 10^{-6}$	0	$1.402 \cdot 10^{-8}$	$1.402 \cdot 10^{-8}$	0		
cHDD	$-3.4 \cdot 10^{-5}$	$-3.4 \cdot 10^{-5}$	0	$4.167 \cdot 10^{-6}$	$4.167 \cdot 10^{-6}$	0		
cHW	$-8.391 \cdot 10^{-8}$	$-8.391 \cdot 10^{-8}$	0	$3.235 \cdot 10^{-8}$	$3.235 \cdot 10^{-8}$	0		
cHWB	$-3.805 \cdot 10^{-6}$	$-3.805 \cdot 10^{-6}$	0	$8.536 \cdot 10^{-7}$	$8.536 \cdot 10^{-7}$	0		
cHWBtil	$2.038 \cdot 10^{-5}$	$2.038 \cdot 10^{-5}$	0	$1.271 \cdot 10^{-5}$	$1.271 \cdot 10^{-5}$	0		
cHWtil	$-1.276 \cdot 10^{-6}$	$-1.276 \cdot 10^{-6}$	0	$1.128 \cdot 10^{-5}$	$1.128 \cdot 10^{-5}$	0		
cHd	$-2.577 \cdot 10^{-5}$	$-2.577 \cdot 10^{-5}$	0	$6.526 \cdot 10^{-7}$	$6.526 \cdot 10^{-7}$	0		
cH13	$-1.602 \cdot 10^{-6}$	$-1.602 \cdot 10^{-6}$	0	$3.372 \cdot 10^{-7}$	$3.372 \cdot 10^{-7}$	0		
cHq1	$1.667 \cdot 10^{-6}$	$1.667 \cdot 10^{-6}$	0	$4.224 \cdot 10^{-7}$	$4.224 \cdot 10^{-7}$	0		

cHq3	$-1.566 \cdot 10^{-6}$	$-1.566 \cdot 10^{-6}$	0	$1.236 \cdot 10^{-6}$	$1.236 \cdot 10^{-6}$	0
cHudIm	$-1.667 \cdot 10^{-10}$	$-1.667 \cdot 10^{-10}$	$3.342 \cdot 10^{-5}$	$1.574 \cdot 10^{-10}$	$1.573 \cdot 10^{-10}$	$6.692 \cdot 10^{-5}$
cHudRe	$-3.272 \cdot 10^{-7}$	$-3.272 \cdot 10^{-7}$	$3.346 \cdot 10^{-5}$	$1.265 \cdot 10^{-9}$	$1.265 \cdot 10^{-9}$	$6.694 \cdot 10^{-5}$
cW	$-2.597 \cdot 10^{-7}$	$-2.597 \cdot 10^{-7}$	0	$8.375 \cdot 10^{-7}$	$8.375 \cdot 10^{-7}$	0
cWtil	$7.55 \cdot 10^{-8}$	$7.55 \cdot 10^{-8}$	0	$8.398 \cdot 10^{-7}$	$8.398 \cdot 10^{-7}$	0
cdBIm	$7.472 \cdot 10^{-9}$	$7.472 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$7.443 \cdot 10^{-9}$	$7.442 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$
cdBRe	$6.047 \cdot 10^{-11}$	$6.047 \cdot 10^{-11}$	$3.337 \cdot 10^{-5}$	$3.042 \cdot 10^{-12}$	$3.041 \cdot 10^{-12}$	$6.674 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-8.944 \cdot 10^{-10}$	$-8.943 \cdot 10^{-10}$	$3.336 \cdot 10^{-5}$	$3.515 \cdot 10^{-11}$	$3.515 \cdot 10^{-11}$	$6.674 \cdot 10^{-5}$
cdHRe	$2.18 \cdot 10^{-10}$	$2.18 \cdot 10^{-10}$	$3.335 \cdot 10^{-5}$	$8.83 \cdot 10^{-11}$	$8.83 \cdot 10^{-11}$	$6.674 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$-6.934 \cdot 10^{-9}$	$-6.934 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$4.653 \cdot 10^{-9}$	$4.653 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$
cdWRe	$4.908 \cdot 10^{-10}$	$4.908 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$1.116 \cdot 10^{-9}$	$1.116 \cdot 10^{-9}$	$6.678 \cdot 10^{-5}$
cll1	$4.564 \cdot 10^{-7}$	$4.564 \cdot 10^{-7}$	0	$5.14 \cdot 10^{-8}$	$5.14\cdot10^{-8}$	0
$\mathtt{cuHIm}$	$-3.169 \cdot 10^{-8}$	$-3.169 \cdot 10^{-8}$	$3.156 \cdot 10^{-8}$	$1.872 \cdot 10^{-9}$	$1.872 \cdot 10^{-9}$	$5.341 \cdot 10^{-8}$
cuHRe	$5.642 \cdot 10^{-7}$	$5.642 \cdot 10^{-7}$	$3.545 \cdot 10^{-8}$	$5.388 \cdot 10^{-8}$	$5.388 \cdot 10^{-8}$	$5.568 \cdot 10^{-8}$
cuWIm	$2.585 \cdot 10^{-7}$	$2.585 \cdot 10^{-7}$	$3.868 \cdot 10^{-8}$	$4.292 \cdot 10^{-6}$	$4.292 \cdot 10^{-6}$	$4.659 \cdot 10^{-8}$
cuWRe	$1.311 \cdot 10^{-6}$	$1.311 \cdot 10^{-6}$	0	$1.221 \cdot 10^{-5}$	$1.221 \cdot 10^{-5}$	$8.193 \cdot 10^{-8}$
sm	0	0	0	0.0002657	0.0002657	0

### 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	$1.388 \cdot 10^{-11}$	$1.388 \cdot 10^{-11}$	0	$9.966 \cdot 10^{-12}$	$9.966 \cdot 10^{-12}$	0	
сНВ	$5.595 \cdot 10^{-9}$	$5.595 \cdot 10^{-9}$	0	$5.315 \cdot 10^{-10}$	$5.315 \cdot 10^{-10}$	0	
cHBtil	$3.661 \cdot 10^{-10}$	$3.661 \cdot 10^{-10}$	0	$1.595 \cdot 10^{-9}$	$1.595 \cdot 10^{-9}$	0	
cHDD	$-1.571 \cdot 10^{-6}$	$-1.571 \cdot 10^{-6}$	0	$1.36 \cdot 10^{-7}$	$1.36 \cdot 10^{-7}$	0	
cHW	$-1.756 \cdot 10^{-7}$	$-1.756 \cdot 10^{-7}$	0	$1.032 \cdot 10^{-7}$	$1.032 \cdot 10^{-7}$	0	
cHWB	$-2.902 \cdot 10^{-7}$	$-2.902 \cdot 10^{-7}$	0	$8.186 \cdot 10^{-8}$	$8.186 \cdot 10^{-8}$	0	
cHWBtil	$-5.218 \cdot 10^{-8}$	$-5.218 \cdot 10^{-8}$	0	$2.419 \cdot 10^{-7}$	$2.419 \cdot 10^{-7}$	0	

cHWtil	$-5.087 \cdot 10^{-8}$	$-5.087 \cdot 10^{-8}$	0	$2.484 \cdot 10^{-7}$ $2.484 \cdot 10^{-7}$	0
cH13	$-9.075 \cdot 10^{-7}$	$-9.075 \cdot 10^{-7}$	0	$1.533 \cdot 10^{-7}$ $1.533 \cdot 10^{-7}$	0
cHq1	$-2.58 \cdot 10^{-7}$	$-2.58 \cdot 10^{-7}$	0	$3.528 \cdot 10^{-7}$ $3.528 \cdot 10^{-7}$	0
cHq3	$-1.361 \cdot 10^{-7}$	$-1.361 \cdot 10^{-7}$	0	$1.496 \cdot 10^{-6}$ $1.496 \cdot 10^{-6}$	0
cHu	$4.779 \cdot 10^{-8}$	$4.779 \cdot 10^{-8}$	0	$4.311 \cdot 10^{-8}$ $4.311 \cdot 10^{-8}$	0
$\mathtt{cHudIm}$	$6.506 \cdot 10^{-20}$	$6.506 \cdot 10^{-20}$	0	$1.666 \cdot 10^{-24}  1.666 \cdot 10^{-24}$	0
cHudRe	$2.335 \cdot 10^{-17}$	$2.335 \cdot 10^{-17}$	0	$5.319 \cdot 10^{-24}  5.319 \cdot 10^{-24}$	0
cW	$-1.277 \cdot 10^{-7}$	$-1.277 \cdot 10^{-7}$	0	$8.864 \cdot 10^{-7}$ $8.864 \cdot 10^{-7}$	0
cWtil	$-1.456 \cdot 10^{-7}$	$-1.456 \cdot 10^{-7}$	0	$8.877 \cdot 10^{-7}$ $8.877 \cdot 10^{-7}$	0
cdHIm	$5.963 \cdot 10^{-14}$	$5.963 \cdot 10^{-14}$	0	$3.455 \cdot 10^{-21}  3.455 \cdot 10^{-21}$	0
cdHRe	$5.741 \cdot 10^{-14}$	$5.741 \cdot 10^{-14}$	0	$2.382 \cdot 10^{-21}$ $2.382 \cdot 10^{-21}$	0
$\mathtt{cdWIm}$	$-2.253 \cdot 10^{-14}$	$-2.253 \cdot 10^{-14}$	0	$5.39 \cdot 10^{-19}$ $5.39 \cdot 10^{-19}$	0
cdWRe	$-2.526 \cdot 10^{-13}$	$-2.526 \cdot 10^{-13}$	0	$4.976 \cdot 10^{-19}  4.976 \cdot 10^{-19}$	0
cll1	$3.393 \cdot 10^{-7}$	$3.393 \cdot 10^{-7}$	0	$2.844 \cdot 10^{-8}$ $2.844 \cdot 10^{-8}$	0
cuBIm	$-2.119 \cdot 10^{-12}$	$-2.119 \cdot 10^{-12}$	0	$2.009 \cdot 10^{-13}  2.009 \cdot 10^{-13}$	0
cuBRe		$-1.53 \cdot 10^{-11}$	0	$2.009 \cdot 10^{-13}  2.009 \cdot 10^{-13}$	0
$\mathtt{cuHIm}$	$-2.288 \cdot 10^{-12}$	$-2.288 \cdot 10^{-12}$	0	$6.57 \cdot 10^{-12}$ $6.57 \cdot 10^{-12}$	0
cuHRe		$5.464 \cdot 10^{-13}$	0	$6.569 \cdot 10^{-12}  6.569 \cdot 10^{-12}$	0
${\tt cuWIm}$		$1.112 \cdot 10^{-10}$	0	$1.608 \cdot 10^{-10}  1.608 \cdot 10^{-10}$	0
cuWRe	$-8.766 \cdot 10^{-11}$	$-8.766 \cdot 10^{-11}$	0	$1.262 \cdot 10^{-10}$ $1.262 \cdot 10^{-10}$	0
sm	0	0	0	$3.98 \cdot 10^{-6}$ $3.98 \cdot 10^{-6}$	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$2.848 \cdot 10^{-17}$	$2.848 \cdot 10^{-17}$	0	$6.437 \cdot 10^{-17}$	$6.437 \cdot 10^{-17}$	0	
сНВ	$-9.804 \cdot 10^{-9}$	$-9.804 \cdot 10^{-9}$	0	$1.864 \cdot 10^{-10}$	$1.864 \cdot 10^{-10}$	0	
cHBtil	$-1.63 \cdot 10^{-9}$	$-1.63 \cdot 10^{-9}$	0	$9.077 \cdot 10^{-12}$	$9.077 \cdot 10^{-12}$	0	

cHDD	$-2.036 \cdot 10^{-7}$	$-2.036 \cdot 10^{-7}$	0	$1.774 \cdot 10^{-8}$	$1.774 \cdot 10^{-8}$	0
cHW	$-9.746 \cdot 10^{-8}$	$-9.746 \cdot 10^{-8}$	0	$2.343 \cdot 10^{-8}$	$2.343 \cdot 10^{-8}$	0
cHWB	$-8.113 \cdot 10^{-7}$	$-8.113 \cdot 10^{-7}$	0	$1.392 \cdot 10^{-7}$	$1.392 \cdot 10^{-7}$	0
cHWBtil	$-2.716 \cdot 10^{-8}$	$-2.716 \cdot 10^{-8}$	0	$2.272 \cdot 10^{-8}$	$2.272\cdot10^{-8}$	0
cHWtil	$-2.199 \cdot 10^{-8}$	$-2.199 \cdot 10^{-8}$	0	$9.696 \cdot 10^{-9}$	$9.696 \cdot 10^{-9}$	0
cHd	$-4.592 \cdot 10^{-8}$	$-4.592 \cdot 10^{-8}$	0	$4.047 \cdot 10^{-7}$	$4.047\cdot10^{-7}$	0
cH13	$-4.141 \cdot 10^{-7}$	$-4.141 \cdot 10^{-7}$	0	$7.163 \cdot 10^{-8}$	$7.163 \cdot 10^{-8}$	0
cHq1	$4.967 \cdot 10^{-7}$	$4.967 \cdot 10^{-7}$	0	$2.565 \cdot 10^{-7}$	$2.565 \cdot 10^{-7}$	0
сНqЗ	$-2.617 \cdot 10^{-7}$	$-2.617 \cdot 10^{-7}$	0	$8.147 \cdot 10^{-7}$	$8.147 \cdot 10^{-7}$	0
cHudIm	$1.437 \cdot 10^{-25}$	$1.437 \cdot 10^{-25}$	0	$5.631 \cdot 10^{-35}$	$5.631 \cdot 10^{-35}$	0
cHudRe	$-3.589 \cdot 10^{-25}$	$-3.589 \cdot 10^{-25}$	0	$1.145 \cdot 10^{-35}$	$1.145 \cdot 10^{-35}$	0
cW	$-4.565 \cdot 10^{-8}$	$-4.565 \cdot 10^{-8}$	0	$4.954 \cdot 10^{-7}$	$4.954 \cdot 10^{-7}$	0
cWtil	$-5.271 \cdot 10^{-8}$	$-5.271 \cdot 10^{-8}$	0	$4.968 \cdot 10^{-7}$	$4.968 \cdot 10^{-7}$	0
$\mathtt{cdBIm}$	$-3.663 \cdot 10^{-17}$	$-3.663 \cdot 10^{-17}$	0	$3.065 \cdot 10^{-18}$	$3.065 \cdot 10^{-18}$	0
cdBRe	$9.415 \cdot 10^{-17}$	$9.415 \cdot 10^{-17}$	0	$4.962 \cdot 10^{-18}$	$4.962 \cdot 10^{-18}$	0
$\mathtt{cdHIm}$	$1.074 \cdot 10^{-16}$	$1.074 \cdot 10^{-16}$	0	$1.99 \cdot 10^{-17}$	$1.99 \cdot 10^{-17}$	0
cdHRe	$-4.943 \cdot 10^{-18}$	$-4.943 \cdot 10^{-18}$	0	$8.258 \cdot 10^{-17}$	$8.258 \cdot 10^{-17}$	0
$\mathtt{cdWIm}$	$4.198 \cdot 10^{-15}$	$4.198 \cdot 10^{-15}$	0	$3.386 \cdot 10^{-15}$	$3.386 \cdot 10^{-15}$	0
cdWRe	$-3.67 \cdot 10^{-17}$	$-3.67 \cdot 10^{-17}$	0	$1.721 \cdot 10^{-15}$	$1.721 \cdot 10^{-15}$	0
cll1	$1.495 \cdot 10^{-7}$	$1.495 \cdot 10^{-7}$	0	$1.301 \cdot 10^{-8}$	$1.301 \cdot 10^{-8}$	0
$\mathtt{cuHIm}$	$1.104 \cdot 10^{-17}$	$1.104 \cdot 10^{-17}$	0	$1.532 \cdot 10^{-27}$	$1.532 \cdot 10^{-27}$	0
cuHRe	$1.152 \cdot 10^{-16}$	$1.152 \cdot 10^{-16}$	0	$8.345 \cdot 10^{-27}$	$8.345 \cdot 10^{-27}$	0
cuWIm	$1.511 \cdot 10^{-17}$	$1.511 \cdot 10^{-17}$	0	$1.032 \cdot 10^{-25}$	$1.032 \cdot 10^{-25}$	0
cuWRe	$-1.557 \cdot 10^{-16}$	$-1.557 \cdot 10^{-16}$	0	$1.377 \cdot 10^{-25}$	$1.377 \cdot 10^{-25}$	0
sm	0	0	0	$5.056 \cdot 10^{-7}$	$5.056 \cdot 10^{-7}$	0

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

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$2.566 \cdot 10^{-7}$	$2.566 \cdot 10^{-7}$	0	$4.049 \cdot 10^{-8}$	$4.049 \cdot 10^{-8}$	0
сНВ	$-1.127 \cdot 10^{-8}$	$-1.127 \cdot 10^{-8}$	0	$6.045 \cdot 10^{-10}$	$6.045 \cdot 10^{-10}$	0
cHBtil	$7.142 \cdot 10^{-9}$	$7.142 \cdot 10^{-9}$	0	$7.055 \cdot 10^{-11}$	$7.055 \cdot 10^{-11}$	0
cHDD	$-1.82 \cdot 10^{-6}$	$-1.82 \cdot 10^{-6}$	0	$2.982 \cdot 10^{-7}$	$2.982 \cdot 10^{-7}$	0
cHW	$1.313 \cdot 10^{-6}$	$1.313 \cdot 10^{-6}$	0	$8.967 \cdot 10^{-6}$	$8.967 \cdot 10^{-6}$	0
cHWB	$-3.048 \cdot 10^{-5}$	$-3.048 \cdot 10^{-5}$	0	$7.002 \cdot 10^{-6}$	$7.002 \cdot 10^{-6}$	0
cHWBtil	$-5.814 \cdot 10^{-8}$	$-5.814 \cdot 10^{-8}$	0	$1.645 \cdot 10^{-7}$	$1.645 \cdot 10^{-7}$	0
cHWtil	$1.535 \cdot 10^{-6}$	$1.535 \cdot 10^{-6}$	0	$1.154 \cdot 10^{-5}$	$1.154 \cdot 10^{-5}$	0
cH13	$-7.333 \cdot 10^{-6}$	$-7.333 \cdot 10^{-6}$	0	$1.594 \cdot 10^{-6}$	$1.594 \cdot 10^{-6}$	0
cHq1	$-9.058 \cdot 10^{-7}$	$-9.058 \cdot 10^{-7}$	0	$9.654 \cdot 10^{-7}$	$9.654 \cdot 10^{-7}$	0
cHq3	$1.166 \cdot 10^{-5}$	$1.166 \cdot 10^{-5}$	0	$9.549 \cdot 10^{-6}$	$9.549 \cdot 10^{-6}$	0
cHu	$-1.582 \cdot 10^{-6}$	$-1.582 \cdot 10^{-6}$	0	$1.849 \cdot 10^{-6}$	$1.849 \cdot 10^{-6}$	0
$\mathtt{cHudIm}$	$-1.603 \cdot 10^{-11}$	$-1.603 \cdot 10^{-11}$	$3.343 \cdot 10^{-5}$	$5.812 \cdot 10^{-13}$	$5.812 \cdot 10^{-13}$	$6.69 \cdot 10^{-5}$
cHudRe	$1.085 \cdot 10^{-9}$	$1.085 \cdot 10^{-9}$	$3.345 \cdot 10^{-5}$	$1.137 \cdot 10^{-12}$	$1.137 \cdot 10^{-12}$	$6.686 \cdot 10^{-5}$
cM	$-1.931 \cdot 10^{-7}$	$-1.931 \cdot 10^{-7}$	0	$3.153 \cdot 10^{-6}$	$3.153 \cdot 10^{-6}$	0
cWtil	$-1.002 \cdot 10^{-7}$	$-1.002 \cdot 10^{-7}$	0	$3.154 \cdot 10^{-6}$	$3.154 \cdot 10^{-6}$	0
$\mathtt{cdHIm}$	$1.439 \cdot 10^{-10}$	$1.439 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$1.977 \cdot 10^{-14}$	$1.977 \cdot 10^{-14}$	$6.672 \cdot 10^{-5}$
cdHRe	$6.291 \cdot 10^{-11}$	$6.291 \cdot 10^{-11}$	$3.338 \cdot 10^{-5}$	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	$6.675 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$6.706 \cdot 10^{-11}$	$6.706 \cdot 10^{-11}$	$3.337 \cdot 10^{-5}$	$9.744 \cdot 10^{-12}$	$9.744 \cdot 10^{-12}$	$6.674 \cdot 10^{-5}$
cdWRe	$-2.22 \cdot 10^{-9}$	$-2.22 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$7.805 \cdot 10^{-12}$	$7.805 \cdot 10^{-12}$	$6.674 \cdot 10^{-5}$
cll1	$2.505 \cdot 10^{-6}$	$2.505 \cdot 10^{-6}$	0	$2.546 \cdot 10^{-7}$	$2.546 \cdot 10^{-7}$	0
cuBIm	$-1.207 \cdot 10^{-7}$	$-1.207 \cdot 10^{-7}$	$8.284 \cdot 10^{-8}$	$1.514 \cdot 10^{-8}$	$1.514 \cdot 10^{-8}$	$6.604 \cdot 10^{-8}$
cuBRe	$7.703 \cdot 10^{-8}$	$7.703 \cdot 10^{-8}$	$2.596 \cdot 10^{-8}$	$3.851 \cdot 10^{-8}$	$3.851 \cdot 10^{-8}$	$5.193 \cdot 10^{-8}$
$\mathtt{cuHIm}$	$3.967 \cdot 10^{-7}$	$3.967 \cdot 10^{-7}$	$2.52\cdot 10^{-8}$	$3.549 \cdot 10^{-7}$	$3.549 \cdot 10^{-7}$	$5.635 \cdot 10^{-8}$
cuHRe	$-1.097 \cdot 10^{-7}$	$-1.097 \cdot 10^{-7}$	0	$1.045 \cdot 10^{-7}$	$1.045 \cdot 10^{-7}$	$9.574 \cdot 10^{-8}$
cuWIm	$-2.913 \cdot 10^{-6}$	$-2.913 \cdot 10^{-6}$	$3.433 \cdot 10^{-8}$	$3.519 \cdot 10^{-5}$	$3.519 \cdot 10^{-5}$	$5.683 \cdot 10^{-8}$
cuWRe	$-4.153 \cdot 10^{-6}$	$-4.153 \cdot 10^{-6}$	$2.408 \cdot 10^{-8}$	$4.216 \cdot 10^{-5}$	$4.216 \cdot 10^{-5}$	$4.744 \cdot 10^{-8}$
sm	0	0	0	$9.418 \cdot 10^{-6}$	$9.418 \cdot 10^{-6}$	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-28.85	-28.85	0	1.374	1.374	0	
cHW	0.2449	0.2449	0	2.828	2.828	0	
cHWB	-10.54	-10.54	0	1.883	1.883	0	
cHWBtil	$3.636 \cdot 10^{-15}$	$3.713 \cdot 10^{-15}$	-0.0212	0.05406	0.05406	0	
cHWtil	$-1.934 \cdot 10^{-15}$	$-1.923 \cdot 10^{-15}$	0.005399	1.834	1.834	0	
cH13	-2.582	-2.582	0	0.3676	0.3676	0	
cW	0.09321	0.09321	0	1.543	1.543	0	
cWtil	$5.872 \cdot 10^{-14}$	$6.287 \cdot 10^{-14}$	-0.07069	1.543	1.543	0	
cll1	1.03	1.03	0	0.07258	0.07258	0	
sm	0	0	0	149.2	149.2	0	

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

	interference				square			
	mod1	$\verb mod1  \verb mod2  1 - \verb mod2  mod1 $			mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНВ	-0.04424	-0.04424	0	0.2695	0.2695	0		
cHBtil	$2.914 \cdot 10^{-17}$	$2.914 \cdot 10^{-17}$	0	0.2695	0.2695	0		
cHW	-0.01412	-0.01412	0	0.02503	0.02503	0		
cHWB	0.02183	0.02183	0	0.1064	0.1064	0		
cHWBtil	$8.02 \cdot 10^{-18}$	$8.485 \cdot 10^{-18}$	-0.05795	0.07754	0.07754	0		
cHWtil	$9.081 \cdot 10^{-18}$	$9.081 \cdot 10^{-18}$	0	0.02503	0.02503	0		
cW	0.0007227	0.0007227	0	0.7175	0.7175	0		
cWtil	$-2.641 \cdot 10^{-18}$	$-2.337 \cdot 10^{-18}$	0.1152	0.7175	0.7175	0		
sm	0	0	0	0.1008	0.1008	0		

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHB	$2.851 \cdot 10^{-9}$	$2.851 \cdot 10^{-9}$	0	$1.7\cdot 10^{-7}$	$1.7\cdot 10^{-7}$	0	
cHBtil	$-1.234 \cdot 10^{-8}$	$-1.234 \cdot 10^{-8}$	0	$3.681 \cdot 10^{-7}$	$3.681 \cdot 10^{-7}$	0	
cHW	$-1.159 \cdot 10^{-8}$	$-1.159 \cdot 10^{-8}$	0	$3.066 \cdot 10^{-8}$	$3.066 \cdot 10^{-8}$	0	
cHWB	$2.516 \cdot 10^{-8}$	$2.516 \cdot 10^{-8}$	0	$1.438 \cdot 10^{-7}$	$1.438 \cdot 10^{-7}$	0	
cHWBtil	$-8.675 \cdot 10^{-9}$	$-8.675 \cdot 10^{-9}$	0	$1.146 \cdot 10^{-7}$	$1.146 \cdot 10^{-7}$	0	
cHWtil	$-3.76 \cdot 10^{-9}$	$-3.76 \cdot 10^{-9}$	0	$3.418 \cdot 10^{-8}$	$3.418 \cdot 10^{-8}$	0	
cW	$1.599 \cdot 10^{-7}$	$1.599 \cdot 10^{-7}$	0	$2.893 \cdot 10^{-6}$	$2.893 \cdot 10^{-6}$	0	
cWtil	$-3.413 \cdot 10^{-7}$	$-3.413 \cdot 10^{-7}$	0	$2.892 \cdot 10^{-6}$	$2.892 \cdot 10^{-6}$	0	
sm	0	0	0	$1.452 \cdot 10^{-6}$	$1.452 \cdot 10^{-6}$	0	

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
cHDD	-0.002963	-0.002963	0	$6.458 \cdot 10^{-5}$	$6.458 \cdot 10^{-5}$	0		
cHWB	-0.006402	-0.006402	0	0.0003082	0.0003082	0		
cH13	-0.004807	-0.004807	0	0.0004191	0.0004191	0		
сНqЗ	0.003344	0.003344	0	0.0002027	0.0002027	0		
$\mathtt{cHudIm}$	$3.021 \cdot 10^{-24}$	$-4.135 \cdot 10^{-24}$	2.369	$5.403 \cdot 10^{-10}$	$5.403 \cdot 10^{-10}$	$6.691 \cdot 10^{-5}$		
cHudRe	$-4.67 \cdot 10^{-8}$	$-4.67 \cdot 10^{-8}$	$3.347 \cdot 10^{-5}$	$4.772 \cdot 10^{-10}$	$4.772 \cdot 10^{-10}$	$6.691 \cdot 10^{-5}$		
$\mathtt{cdWIm}$	$-9.796 \cdot 10^{-21}$	$-9.39 \cdot 10^{-21}$	0.04142	$3.395 \cdot 10^{-6}$	$3.395 \cdot 10^{-6}$	$6.672 \cdot 10^{-5}$		
cdWRe	$-5.422 \cdot 10^{-6}$	$-5.422 \cdot 10^{-6}$	$3.336 \cdot 10^{-5}$	$7.554 \cdot 10^{-6}$	$7.554 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$		
cll1	0.002406	0.002406	0	0.0001049	0.0001049	0		
cqq11	0.0869	0.0869	$-9.206 \cdot 10^{-8}$	1.232	1.232	0		
cqq3	0.5214	0.5214	0	4.928	4.928	0		

cqq31	-0.0869	-0.0869	$-9.206 \cdot 10^{-8}$	1.232	1.232	0
cquqd11Im	$2.819 \cdot 10^{-15}$	$2.819 \cdot 10^{-15}$	$3.547 \cdot 10^{-8}$	$3.62 \cdot 10^{-12}$	$3.62 \cdot 10^{-12}$	$8.287 \cdot 10^{-8}$
cquqd11Re	$-1.792 \cdot 10^{-11}$	$-1.792 \cdot 10^{-11}$	0	$4.099 \cdot 10^{-12}$	$4.099 \cdot 10^{-12}$	$7.319 \cdot 10^{-8}$
cquqd1Im	$5.905 \cdot 10^{-14}$	$5.905 \cdot 10^{-14}$	$3.387 \cdot 10^{-8}$	$1.771 \cdot 10^{-10}$	$1.771 \cdot 10^{-10}$	$5.646 \cdot 10^{-8}$
cquqd1Re	$-3.526 \cdot 10^{-10}$	$-3.526 \cdot 10^{-10}$	$2.836 \cdot 10^{-8}$	$1.771 \cdot 10^{-10}$	$1.771 \cdot 10^{-10}$	$5.646 \cdot 10^{-8}$
cquqd81Im	$4.002 \cdot 10^{-15}$	$4.002 \cdot 10^{-15}$	$2.499 \cdot 10^{-8}$	$9.108 \cdot 10^{-13}$	$9.108 \cdot 10^{-13}$	$7.685 \cdot 10^{-8}$
cquqd81Re	$-7.268 \cdot 10^{-11}$	$-7.268 \cdot 10^{-11}$	$4.127 \cdot 10^{-8}$	$8.322 \cdot 10^{-12}$	$8.322 \cdot 10^{-12}$	$6.008 \cdot 10^{-8}$
cquqd8Im	$-7.84 \cdot 10^{-27}$	$-2.872 \cdot 10^{-27}$	0.6337	$3.936 \cdot 10^{-11}$	$3.936 \cdot 10^{-11}$	$7.622 \cdot 10^{-8}$
cquqd8Re	$-4.719 \cdot 10^{-27}$	$-1.046 \cdot 10^{-26}$	-1.217	$3.936 \cdot 10^{-11}$	$3.936 \cdot 10^{-11}$	$5.081 \cdot 10^{-8}$
cuWIm	$2.663 \cdot 10^{-17}$	$2.702 \cdot 10^{-17}$	-0.01462	0.01305	0.01305	$7.663 \cdot 10^{-8}$
cuWRe	-0.01433	-0.01433	$6.977 \cdot 10^{-8}$	0.006919	0.006919	$5.781 \cdot 10^{-8}$
sm	0	0	0	0.034	0.034	0

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $		
сНВ	-0.01966	-0.01966	0	$0.01114 \qquad 0.01114 \qquad 0$		
cHBtil	$3.527 \cdot 10^{-17}$	$3.547 \cdot 10^{-17}$	-0.005661	$0.03963 \qquad 0.03963 \qquad 0$		
cHDD	-0.01741	-0.01741	0	0.0002476  0.0002476  0		
cHW	0.04039	0.04039	0	$0.04498 \qquad 0.04498 \qquad 0$		
cHWB	0.1154	0.1154	0	$0.9095 \qquad 0.9095 \qquad 0$		
cHWBtil	$1.328 \cdot 10^{-18}$	$-9.327 \cdot 10^{-18}$	8.024	$0.5722 \qquad 0.5722 \qquad 0$		
cHWtil	$-4.112 \cdot 10^{-17}$	$-4.125 \cdot 10^{-17}$	-0.003073	$0.03963 \qquad 0.03963 \qquad 0$		
cH13	-0.07332	-0.07332	0	0.004171  0.004171  0		
cW	0.007021	0.007021	0	1.345 $1.345$ $0$		
cWtil	$6.18 \cdot 10^{-15}$	$7.635 \cdot 10^{-15}$	-0.2355	1.345 $1.345$ $0$		
cll1	0.03622	0.03622	0	$0.00103 \qquad 0.00103 \qquad 0$		
sm	0	0	0	$0.3039 \qquad 0.3039 \qquad 0$		

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

		ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	-0.0005618	-0.0005618	0	$1.629 \cdot 10^{-5}$	$1.629 \cdot 10^{-5}$	0	
cHWB	-0.0001917	-0.0001917	0	$5.565 \cdot 10^{-5}$	$5.565 \cdot 10^{-5}$	0	
сНе	0.0001085	0.0001085	0	$2.419 \cdot 10^{-5}$	$2.419 \cdot 10^{-5}$	0	
cHl1	$1.222 \cdot 10^{-5}$	$1.222 \cdot 10^{-5}$	0	$2.365 \cdot 10^{-5}$	$2.365 \cdot 10^{-5}$	0	
cH13	$-9.961 \cdot 10^{-5}$	$-9.961 \cdot 10^{-5}$	0	$1.327 \cdot 10^{-5}$	$1.327 \cdot 10^{-5}$	0	
$\mathtt{ceBIm}$	$3.575 \cdot 10^{-23}$	$3.575 \cdot 10^{-23}$	0	$9.702 \cdot 10^{-7}$	$9.702 \cdot 10^{-7}$	0	
ceBRe	$1.688 \cdot 10^{-6}$	$1.688 \cdot 10^{-6}$	0	$3.968 \cdot 10^{-7}$	$3.968 \cdot 10^{-7}$	0	
$\mathtt{ceHIm}$	$-1.258 \cdot 10^{-28}$	$-1.258 \cdot 10^{-28}$	0	$7.277 \cdot 10^{-14}$	$7.277 \cdot 10^{-14}$	0	
ceHRe	$-2.445 \cdot 10^{-12}$	$-2.445 \cdot 10^{-12}$	0	$1.455 \cdot 10^{-13}$	$1.455 \cdot 10^{-13}$	0	
$\mathtt{ceWIm}$	$-2.727 \cdot 10^{-23}$	$-2.727 \cdot 10^{-23}$	0	$6.416 \cdot 10^{-7}$	$6.416 \cdot 10^{-7}$	0	
ceWRe	$-7.631 \cdot 10^{-7}$	$-7.631 \cdot 10^{-7}$	0	$6.416 \cdot 10^{-7}$	$6.416 \cdot 10^{-7}$	0	
cee	0.07944	0.07944	0	0.6187	0.6187	0	
cle	0.1088	0.1088	0	0.8527	0.8527	0	
cll	0.436	0.436	0	3.171	3.171	0	
cll1	0.06622	0.06622	0	0.4858	0.4858	0	
sm	0	0	0	0.02815	0.02815	0	

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

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-2.895 \cdot 10^{-6}$	$-2.895 \cdot 10^{-6}$	0	$4.388 \cdot 10^{-8}$	$4.388 \cdot 10^{-8}$	0		
cHl1	$-5.05 \cdot 10^{-5}$	$-5.05 \cdot 10^{-5}$	0	$3.061 \cdot 10^{-6}$	$3.061 \cdot 10^{-6}$	0		
cH13	$1.573 \cdot 10^{-20}$	$1.573 \cdot 10^{-20}$	0	$7.641 \cdot 10^{-37}$	$7.641 \cdot 10^{-37}$	0		
cll	-0.01152	-0.01152	0	0.6949	0.6949	0		

cll1	-0.0173	-0.0173	0	0.8843 $0.8843$	0
$\mathtt{sm}$	0	0	0	$4.776 \cdot 10^{-5}$ $4.776 \cdot 10^{-5}$	0

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

		interfe	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	-0.000414	-0.000414	0	$6.274 \cdot 10^{-6}$	$6.274 \cdot 10^{-6}$	0		
cHWB	$1.248 \cdot 10^{-20}$	$1.248 \cdot 10^{-20}$	0	$4.775 \cdot 10^{-38}$	$4.775 \cdot 10^{-38}$	0		
cHl1	-0.0001977	-0.0001977	0	$1.198 \cdot 10^{-5}$	$1.198 \cdot 10^{-5}$	0		
cH13	$1.596 \cdot 10^{-19}$	$1.596 \cdot 10^{-19}$	0	$1.881 \cdot 10^{-36}$	$1.881 \cdot 10^{-36}$	0		
cll	0.1975	0.1975	0	1.428	1.428	0		
cll1	0.1151	0.1151	0	0.8356	0.8356	0		
sm	0	0	0	0.006829	0.006829	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	$-8.015 \cdot 10^{-7}$	$-8.015 \cdot 10^{-7}$	0	$7.062 \cdot 10^{-6}$	$7.062 \cdot 10^{-6}$	0	
cHBtil	$1.083 \cdot 10^{-23}$	$1.083 \cdot 10^{-23}$	0	$7.062 \cdot 10^{-6}$	$7.062 \cdot 10^{-6}$	0	
cHW	$-1.214 \cdot 10^{-7}$	$-1.214 \cdot 10^{-7}$	0	$6.558 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	0	
cHWB	$4.425 \cdot 10^{-7}$	$4.425 \cdot 10^{-7}$	0	$2.152 \cdot 10^{-6}$	$2.152 \cdot 10^{-6}$	0	
cHWBtil	$-5.979 \cdot 10^{-24}$	$-5.979 \cdot 10^{-24}$	0	$2.152 \cdot 10^{-6}$	$2.152 \cdot 10^{-6}$	0	
cHWtil	$3.3 \cdot 10^{-24}$	$3.3 \cdot 10^{-24}$	0	$6.558 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	0	
$\mathtt{cdBIm}$	$-7.67 \cdot 10^{-25}$	$1.371 \cdot 10^{-23}$	18.87	$1.169 \cdot 10^{-6}$	$1.169 \cdot 10^{-6}$	$6.672 \cdot 10^{-5}$	
cdBRe	$1.872 \cdot 10^{-7}$	$1.872 \cdot 10^{-7}$	$3.339 \cdot 10^{-5}$	$1.169 \cdot 10^{-6}$	$1.169 \cdot 10^{-6}$	$6.68 \cdot 10^{-5}$	
cdWIm	$-6.907 \cdot 10^{-25}$	$-5.604 \cdot 10^{-24}$	-7.113	$3.563 \cdot 10^{-7}$	$3.562 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$	
cdWRe	$-1.033 \cdot 10^{-7}$	$-1.033 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$3.563 \cdot 10^{-7}$	$3.563 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$	

 ${\tt sm} \qquad \qquad 0 \qquad \qquad 0 \qquad \qquad 0.0003105 \qquad 0.0003105 \qquad \qquad 0$ 

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

	interference			square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \verb mod2  1 - \verb mod2/mod1 $
cHDD	-0.0001625	-0.0001625	0	$4.39 \cdot 10^{-6}$ $4.39 \cdot 10^{-6}$ 0
cHWB	0.0001144	0.0001144	0	$2.544 \cdot 10^{-5}$ $2.544 \cdot 10^{-5}$ 0
cHd	$-6.008 \cdot 10^{-5}$	$-6.008 \cdot 10^{-5}$	0	$3.319 \cdot 10^{-6}$ $3.319 \cdot 10^{-6}$ 0
сНе	$-9.281 \cdot 10^{-5}$	$-9.281 \cdot 10^{-5}$	0	$1.505 \cdot 10^{-5}$ $1.505 \cdot 10^{-5}$ 0
cHl1	$-1.551 \cdot 10^{-5}$	$-1.551 \cdot 10^{-5}$	0	$5.551 \cdot 10^{-7}$ $5.551 \cdot 10^{-7}$ 0
cH13	$-1.574 \cdot 10^{-6}$	$-1.574 \cdot 10^{-6}$	0	$1.218 \cdot 10^{-6}$ $1.218 \cdot 10^{-6}$ 0
cHq1	$5.203 \cdot 10^{-5}$	$5.203 \cdot 10^{-5}$	0	$4.624 \cdot 10^{-6}$ $4.624 \cdot 10^{-6}$ 0
сНqЗ	$4.78 \cdot 10^{-5}$	$4.78 \cdot 10^{-5}$	0	$3.958 \cdot 10^{-6}$ $3.958 \cdot 10^{-6}$ 0
$\mathtt{cdBIm}$	$-1.249 \cdot 10^{-22}$	$-1.249 \cdot 10^{-22}$	$4.594 \cdot 10^{-5}$	$1.379 \cdot 10^{-6}$ $1.379 \cdot 10^{-6}$ $6.672 \cdot 10^{-5}$
cdBRe	$3.784 \cdot 10^{-8}$	$3.784 \cdot 10^{-8}$	$3.338 \cdot 10^{-5}$	$8.647 \cdot 10^{-7}$ $8.646 \cdot 10^{-7}$ $6.673 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-4.429 \cdot 10^{-30}$	$-1.646 \cdot 10^{-30}$	0.6284	$6.711 \cdot 10^{-14}  6.711 \cdot 10^{-14}  6.672 \cdot 10^{-5}$
cdHRe	$-2.198 \cdot 10^{-12}$	$-2.197 \cdot 10^{-12}$	$3.336 \cdot 10^{-5}$	$6.711 \cdot 10^{-14}  6.71 \cdot 10^{-14}  6.674 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$8.62 \cdot 10^{-23}$	$8.62 \cdot 10^{-23}$	$6.248 \cdot 10^{-5}$	$9.119 \cdot 10^{-7}$ $9.118 \cdot 10^{-7}$ $6.673 \cdot 10^{-5}$
cdWRe	$-4.727 \cdot 10^{-7}$	$-4.727 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$5.718 \cdot 10^{-7}$ $5.718 \cdot 10^{-7}$ $6.672 \cdot 10^{-5}$
$\mathtt{ceBIm}$	$-1.228 \cdot 10^{-27}$	$-1.228 \cdot 10^{-27}$	0	$2.59 \cdot 10^{-11}$ $2.59 \cdot 10^{-11}$ 0
ceBRe	$1.321 \cdot 10^{-11}$	$1.321 \cdot 10^{-11}$	0	$9.891 \cdot 10^{-11}  9.891 \cdot 10^{-11} \qquad 0$
$\mathtt{ceHIm}$	$-1.034 \cdot 10^{-29}$	$-1.034 \cdot 10^{-29}$	0	$6.71 \cdot 10^{-14}  6.71 \cdot 10^{-14}  0$
ceHRe	$-2.223 \cdot 10^{-12}$		0	$6.71 \cdot 10^{-14}  6.71 \cdot 10^{-14}  0$
ceWIm	$-1.767 \cdot 10^{-2}$		0	$1.534 \cdot 10^{-10}$ $1.534 \cdot 10^{-10}$ 0
ceWRe	$1.558 \cdot 10^{-10}$	$1.558 \cdot 10^{-10}$	0	$1.534 \cdot 10^{-10}  1.534 \cdot 10^{-10} \qquad 0$
ced	0.0005082	0.0005082	0	$0.00594 \qquad 0.00594 \qquad 0$
cld	0.01064	0.01064	0	0.2503   0.2503   0
${\tt cledqIm}$	$9.053 \cdot 10^{-29}$	$1.803 \cdot 10^{-28}$	-0.9914	$3.539 \cdot 10^{-11}  3.538 \cdot 10^{-11}  6.672 \cdot 10^{-5}$

cledqRe	$-7.111 \cdot 10^{-11}$	$-7.111 \cdot 10^{-11}$	$3.337 \cdot 10^{-5}$	$3.539 \cdot 10^{-11}$	$3.538 \cdot 10^{-11}$	$6.672 \cdot 10^{-5}$
cll1	$-2.167 \cdot 10^{-6}$	$-2.167 \cdot 10^{-6}$	0	$7.111 \cdot 10^{-7}$	$7.111 \cdot 10^{-7}$	0
clq1	0.03617	0.03617	0	0.1905	0.1905	0
clq3	0.001128	0.001128	0	0.00594	0.00594	0
cqe	-0.0131	-0.0131	0	0.3003	0.3003	0
sm	0	0	0	0.002085	0.002085	0

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

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
cHDD	$-2.357 \cdot 10^{-5}$	$-2.357 \cdot 10^{-5}$	0	$5.082 \cdot 10^{-7}$	$5.082 \cdot 10^{-7}$	0		
cHWB	-0.0002759	-0.0002759	0	$5.33 \cdot 10^{-6}$	$5.33 \cdot 10^{-6}$	0		
cHd	$-6.384 \cdot 10^{-5}$	$-6.384 \cdot 10^{-5}$	0	$1.243 \cdot 10^{-5}$	$1.243 \cdot 10^{-5}$	0		
cHl1	-0.0004414	-0.0004414	0	$1.338 \cdot 10^{-5}$	$1.338 \cdot 10^{-5}$	0		
cH13	$-2.08 \cdot 10^{-5}$	$-2.08 \cdot 10^{-5}$	0	$3.157 \cdot 10^{-6}$	$3.157 \cdot 10^{-6}$	0		
cHq1	0.0005226	0.0005226	0	$1.876 \cdot 10^{-5}$	$1.876 \cdot 10^{-5}$	0		
cHq3	$3.252 \cdot 10^{-5}$	$3.252 \cdot 10^{-5}$	0	$1.168 \cdot 10^{-6}$	$1.168 \cdot 10^{-6}$	0		
cdBIm	$-2.055 \cdot 10^{-22}$	$-2.055 \cdot 10^{-22}$	$3.494 \cdot 10^{-5}$	$3.004 \cdot 10^{-7}$	$3.004 \cdot 10^{-7}$	$6.672 \cdot 10^{-5}$		
cdBRe	$-7.85 \cdot 10^{-8}$	$-7.85 \cdot 10^{-8}$	$3.336 \cdot 10^{-5}$	$2.632 \cdot 10^{-7}$	$2.632 \cdot 10^{-7}$	$6.672 \cdot 10^{-5}$		
$\operatorname{cdWIm}$	$-3.722 \cdot 10^{-22}$	$-3.722 \cdot 10^{-22}$	$3.858 \cdot 10^{-5}$	$9.857 \cdot 10^{-7}$	$9.856 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$		
cdWRe	$-1.422 \cdot 10^{-7}$	$-1.422 \cdot 10^{-7}$	$3.333 \cdot 10^{-5}$	$8.637 \cdot 10^{-7}$	$8.636 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$		
cld	0.008663	0.008663	0	0.2011	0.2011	0		
cll1	$2.978 \cdot 10^{-5}$	$2.978 \cdot 10^{-5}$	0	$1.398 \cdot 10^{-6}$	$1.398 \cdot 10^{-6}$	0		
clq1	-0.005749	-0.005749	0	0.02462	0.02462	0		
clq3	0.003878	0.003878	0	0.01661	0.01661	0		
sm	0	0	0	0.0004176	0.0004176	0		

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

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	0.01528	0.01528	0	0.0001097	0.0001097	0
cHWB	0.006661	0.006661	0	0.0001227	0.0001227	0
cHd	0.009659	0.009659	0	0.001193	0.001193	0
cH13	0.1046	0.1046	0	0.006446	0.006446	0
cHq1	-0.01511	-0.01511	0	0.0001812	0.0001812	0
сНq3	-0.08525	-0.08525	0	0.003953	0.003953	0
$\mathtt{cdBIm}$	$7.307 \cdot 10^{-21}$	$7.501 \cdot 10^{-21}$	-0.02655	$1.539 \cdot 10^{-5}$	$1.539 \cdot 10^{-5}$	$6.672 \cdot 10^{-5}$
cdBRe	$-4.703 \cdot 10^{-5}$	$-4.703 \cdot 10^{-5}$	$3.336 \cdot 10^{-5}$	$2.604 \cdot 10^{-5}$	$2.604 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$
$\mathtt{cdGIm}$	$1.21 \cdot 10^{-19}$	$9.445 \cdot 10^{-20}$	0.2194	0.0008174	0.0008173	$6.674 \cdot 10^{-5}$
cdGRe	-0.0004169	-0.0004169	$3.336 \cdot 10^{-5}$	0.000165	0.000165	$6.673 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$1.088 \cdot 10^{-21}$	$6.199 \cdot 10^{-22}$	0.4304	$1.571 \cdot 10^{-9}$	$1.571 \cdot 10^{-9}$	$6.671 \cdot 10^{-5}$
cdHRe	0.0001145	0.0001145	$3.336 \cdot 10^{-5}$	$2.811 \cdot 10^{-9}$	$2.811 \cdot 10^{-9}$	$6.671 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$1.305 \cdot 10^{-20}$	$1.325 \cdot 10^{-20}$	-0.01559	$9.022 \cdot 10^{-5}$	$9.022 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$
cdWRe	0.0003579	0.0003579	$3.336 \cdot 10^{-5}$	0.0001516	0.0001516	$6.67\cdot10^{-5}$
cdd	-3.485	-3.485	0	5.459	5.459	0
cdd1	-3.485	-3.485	0	5.459	5.459	0
cll1	-0.05231	-0.05231	0	0.001612	0.001612	0
cqd1	0.04643	0.04643	0	2.513	2.513	0
cqd8	-7.666	-7.666	0	0.4574	0.4574	0
cqq1	-10.62	-10.62	0	7.332	7.332	0
cqq11	-10.62	-10.62	0	7.332	7.332	0
cqq3	-10.62	-10.62	0	7.332	7.332	$6.819 \cdot 10^{-8}$
cqq31	-10.62	-10.62	0	7.332	7.332	$6.819 \cdot 10^{-8}$
$\mathtt{sm}$	0	0	0	19.44	19.44	0

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

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	-0.0005993	-0.0005993	0	$1.261 \cdot 10^{-5}$	$1.261 \cdot 10^{-5}$	0
cHWB	-0.0007397	-0.0007397	0	$2.901 \cdot 10^{-5}$	$2.901 \cdot 10^{-5}$	0
cHd	$-5.516 \cdot 10^{-5}$	$-5.516 \cdot 10^{-5}$	0	$9.146 \cdot 10^{-6}$	$9.146 \cdot 10^{-6}$	0
cH13	$-6.72 \cdot 10^{-5}$	$-6.72 \cdot 10^{-5}$	0	$6.566 \cdot 10^{-6}$	$6.566 \cdot 10^{-6}$	0
cHq1	0.001453	0.001453	0	$9.402 \cdot 10^{-5}$	$9.402 \cdot 10^{-5}$	0
сНqЗ	$8.694 \cdot 10^{-5}$	$8.694 \cdot 10^{-5}$	0	$6.331 \cdot 10^{-6}$	$6.331 \cdot 10^{-6}$	0
cdBIm	$-5.904 \cdot 10^{-23}$	$-5.903 \cdot 10^{-23}$	$4.867 \cdot 10^{-5}$	$4.38 \cdot 10^{-7}$	$4.379 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
cdBRe	$-1.469 \cdot 10^{-7}$	$-1.469 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$2.987 \cdot 10^{-7}$	$2.987 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$
$\mathtt{cdGIm}$	$-1.115 \cdot 10^{-27}$	$-1.165 \cdot 10^{-27}$	-0.04523	$1.092 \cdot 10^{-5}$	$1.092 \cdot 10^{-5}$	$6.675 \cdot 10^{-5}$
cdGRe	-0.000112	-0.000112	$3.329 \cdot 10^{-5}$	$1.991 \cdot 10^{-5}$	$1.991 \cdot 10^{-5}$	$6.675 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-8.51 \cdot 10^{-31}$	$-1.239 \cdot 10^{-30}$	-0.456	$7.866 \cdot 10^{-16}$	$7.865 \cdot 10^{-16}$	$3.336 \cdot 10^{-5}$
cdHRe	$-2.601 \cdot 10^{-14}$	$-2.601 \cdot 10^{-14}$	$1.669 \cdot 10^{-5}$	$1.573 \cdot 10^{-15}$	$1.573 \cdot 10^{-15}$	$3.337 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$1.084 \cdot 10^{-21}$	$1.084 \cdot 10^{-21}$	$2.767 \cdot 10^{-7}$	$2.593 \cdot 10^{-6}$	$2.593 \cdot 10^{-6}$	$6.675 \cdot 10^{-5}$
cdWRe	$-4.018 \cdot 10^{-7}$	$-4.018 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$1.769 \cdot 10^{-6}$	$1.769 \cdot 10^{-6}$	$6.677 \cdot 10^{-5}$
cdd	0.03433	0.03433	0	2.407	2.407	0
cdd1	1.596	1.596	0	2.407	2.407	$4.155 \cdot 10^{-8}$
cll1	$3.36 \cdot 10^{-5}$	$3.36 \cdot 10^{-5}$	0	$1.641 \cdot 10^{-6}$	$1.641 \cdot 10^{-6}$	0
cqd1	-0.002907	-0.002907	0	0.2002	0.2002	0
cqd8	0.9795	0.9795	0	0.3306	0.3306	0
cqq1	0.008293	0.008293	0	0.07573	0.07573	0
cqq11	0.05268	0.05268	0	0.07573	0.07573	$-2.641 \cdot 10^{-8}$
cqq3	0.008293	0.008293	0	0.07573	0.07573	0
cqq31	0.05268	0.05268	0	0.07573	0.07573	$1.32 \cdot 10^{-8}$
sm	0	0	0	0.6435	0.6435	0

## 1.55 $b\bar{b} \rightarrow t\bar{t}$

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	-0.06924	-0.06924	0	0.00272	0.00272	0	
cHWB	-0.008903	-0.008903	0	0.003363	0.003363	0	
cHd	$-9.271 \cdot 10^{-5}$	$-9.271 \cdot 10^{-5}$	0	$5.336 \cdot 10^{-6}$	$5.336 \cdot 10^{-6}$	0	
cH13	0.002247	0.002247	0	0.009266	0.009266	0	
cHq1	-0.0006754	-0.0006754	0	$4.702 \cdot 10^{-6}$	$4.702 \cdot 10^{-6}$	0	
сНqЗ	-0.005918	-0.005918	0	0.003932	0.003932	0	
cHu	-0.0006787	-0.0006787	0	$3.731 \cdot 10^{-6}$	$3.731 \cdot 10^{-6}$	0	
$\mathtt{cHudIm}$	$9.046 \cdot 10^{-22}$	$-8.091 \cdot 10^{-22}$	1.894	$3.74 \cdot 10^{-7}$	$3.74 \cdot 10^{-7}$	$6.69 \cdot 10^{-5}$	
cHudRe	$2.676 \cdot 10^{-5}$	$2.676 \cdot 10^{-5}$	$3.344 \cdot 10^{-5}$	$1.81 \cdot 10^{-6}$	$1.81 \cdot 10^{-6}$	$6.691 \cdot 10^{-5}$	
$\mathtt{cdBIm}$	$2.191 \cdot 10^{-21}$	$1.85 \cdot 10^{-21}$	0.1557	$1.32 \cdot 10^{-6}$	$1.32 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$	
cdBRe	$8.809 \cdot 10^{-6}$	$8.809 \cdot 10^{-6}$	$3.336 \cdot 10^{-5}$	$1.281 \cdot 10^{-6}$	$1.281 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$	
$\mathtt{cdGIm}$	$-2.392 \cdot 10^{-21}$	$-4.536 \cdot 10^{-21}$	-0.8963	$1.465 \cdot 10^{-5}$	$1.465 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$	
cdGRe	-0.0001099	-0.0001099	$3.34 \cdot 10^{-5}$	$1.875 \cdot 10^{-5}$	$1.875 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$	
$\mathtt{cdHIm}$	$1.776 \cdot 10^{-21}$	$8.882 \cdot 10^{-22}$	0.5	$4.74 \cdot 10^{-7}$	$4.74 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$	
cdHRe	$-1.033 \cdot 10^{-5}$	$-1.032 \cdot 10^{-5}$	$3.332 \cdot 10^{-5}$	$4.74 \cdot 10^{-7}$	$4.739 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$	
$\mathtt{cdWIm}$	$-1.862 \cdot 10^{-20}$	$-7\cdot 10^{-21}$	0.624	0.0002323	0.0002323	$6.676 \cdot 10^{-5}$	
cdWRe	$-7.493 \cdot 10^{-5}$	$-7.493 \cdot 10^{-5}$	$3.338 \cdot 10^{-5}$	$1.368 \cdot 10^{-5}$	$1.368 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$	
cll1	-0.004736	-0.004736	0	0.001982	0.001982	0	
cqd1	-0.009013	-0.009013	0	0.5117	0.5117	0	
cqd8	0.4423	0.4423	0	0.1427	0.1427	0	
cqq1	-0.05381	-0.05381	0	0.1579	0.1579	0	
cqq11	-0.05381	-0.05381	0	0.1579	0.1579	0	
cqq3	0.173	0.173	0	0.579	0.579	$-1.727 \cdot 10^{-8}$	
cqq31	0.173	0.173	0	0.579	0.579	$-1.727 \cdot 10^{-8}$	
cqu1	-0.1042	-0.1042	0	0.04263	0.04263	0	
cqu8	0.02488	0.02488	0	0.1137	0.1137	0	

cquqd11Im	$7.194 \cdot 10^{-20}$	$3.852 \cdot 10^{-20}$	0.4646	0.0003124	0.0003123	$6.691 \cdot 10^{-5}$
cquqd11Re	$-2.804 \cdot 10^{-5}$	$-2.804 \cdot 10^{-5}$	$3.345 \cdot 10^{-5}$	0.0005417	0.0005417	$6.689 \cdot 10^{-5}$
cquqd1Im	$-1.739 \cdot 10^{-20}$	$4.98 \cdot 10^{-20}$	3.864	0.0005417	0.0005417	$6.691 \cdot 10^{-5}$
cquqd1Re	-0.0002674	-0.0002674	$3.343 \cdot 10^{-5}$	0.0003124	0.0003123	$6.691 \cdot 10^{-5}$
cquqd81Im	$-9.033 \cdot 10^{-22}$	$7.713 \cdot 10^{-21}$	9.538	$6.275 \cdot 10^{-5}$	$6.275 \cdot 10^{-5}$	$6.69 \cdot 10^{-5}$
cquqd81Re	$4.615 \cdot 10^{-5}$	$4.615 \cdot 10^{-5}$	$3.346 \cdot 10^{-5}$	$6.736 \cdot 10^{-5}$	$6.736 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$
cquqd8Im	$-9.033 \cdot 10^{-22}$	$7.713 \cdot 10^{-21}$	9.538	$6.275 \cdot 10^{-5}$	$6.275 \cdot 10^{-5}$	$6.69 \cdot 10^{-5}$
cquqd8Re	$4.615 \cdot 10^{-5}$	$4.615 \cdot 10^{-5}$	$3.346 \cdot 10^{-5}$	$6.736 \cdot 10^{-5}$	$6.736 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$
cuBIm	$-6.725 \cdot 10^{-19}$	$-4.192 \cdot 10^{-19}$	0.3767	0.000576	0.000576	$6.944 \cdot 10^{-8}$
cuBRe	0.007564	0.007564	$2.644 \cdot 10^{-8}$	0.0008327	0.0008327	$6.005 \cdot 10^{-8}$
cuGIm	$-2.383 \cdot 10^{-17}$	$-2.353 \cdot 10^{-17}$	0.01264	0.02107	0.02107	$4.747 \cdot 10^{-8}$
cuGRe	-0.001831	-0.001831	$5.46 \cdot 10^{-8}$	0.03045	0.03045	$6.567 \cdot 10^{-8}$
cuHIm	$-9.424 \cdot 10^{-23}$	$8.811 \cdot 10^{-23}$	1.935	$5.382 \cdot 10^{-7}$	$5.382 \cdot 10^{-7}$	$5.574 \cdot 10^{-8}$
cuHRe	$-1.032 \cdot 10^{-5}$	$-1.032 \cdot 10^{-5}$	0	$4.739 \cdot 10^{-7}$	$4.739 \cdot 10^{-7}$	$6.33 \cdot 10^{-8}$
cuWIm	$8.465 \cdot 10^{-18}$	$8.496 \cdot 10^{-18}$	-0.003668	0.01915	0.01915	$5.221 \cdot 10^{-8}$
cuWRe	0.2882	0.2882	$3.469 \cdot 10^{-8}$	0.3588	0.3588	$5.574 \cdot 10^{-8}$
cud1	-0.005045	-0.005045	0	0.08107	0.08107	0
cud8	0.07303	0.07303	0	0.01801	0.01801	0
sm	0	0	0	0.8445	0.8445	0

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$5.924 \cdot 10^{-6}$	$5.924 \cdot 10^{-6}$	0	$5.752 \cdot 10^{-8}$	$5.752 \cdot 10^{-8}$	0	
cHWB	-0.0005989	-0.0005989	0	$4.515 \cdot 10^{-5}$	$4.515 \cdot 10^{-5}$	0	
cHd	$7.663 \cdot 10^{-5}$	$7.663 \cdot 10^{-5}$	0	$3.166 \cdot 10^{-5}$	$3.166 \cdot 10^{-5}$	0	
cH13	$5.59 \cdot 10^{-6}$	$5.59 \cdot 10^{-6}$	0	$2.344 \cdot 10^{-6}$	$2.344 \cdot 10^{-6}$	0	
сНа1	$-6.575 \cdot 10^{-5}$	$-6.575 \cdot 10^{-5}$	0	$2.181 \cdot 10^{-6}$	$2.181 \cdot 10^{-6}$	0	

```
6.272 \cdot 10^{-5}
                                         6.272 \cdot 10^{-5}
                                                                                                    8.18 \cdot 10^{-6}
                                                                                                                        8.18 \cdot 10^{-6}
                                                                                                                                                     0
cHq3
                                                                        0
                                                                                                   4.759 \cdot 10^{-5}
                                                                                                                        4.759 \cdot 10^{-5}
                                                                                                                                                     0
cHu
                   0.0001955
                                          0.0001955
                                                                        0
                -3.024 \cdot 10^{-22}
                                       -3.024 \cdot 10^{-22}
                                                                4.867 \cdot 10^{-5}
                                                                                                                                              6.675 \cdot 10^{-5}
                                                                                                   2.109 \cdot 10^{-7}
                                                                                                                        2.109 \cdot 10^{-7}
cdBIm
                 -2.735 \cdot 10^{-7}
                                        -2.735 \cdot 10^{-7}
                                                                3.338 \cdot 10^{-5}
                                                                                                   5.508 \cdot 10^{-7}
                                                                                                                        5.508 \cdot 10^{-7}
                                                                                                                                              6.673 \cdot 10^{-5}
cdBRe
cdGIm
                 1.795 \cdot 10^{-27}
                                        1.361 \cdot 10^{-33}
                                                                        1
                                                                                                   5.981 \cdot 10^{-6}
                                                                                                                        5.981 \cdot 10^{-6}
                                                                                                                                              6.674 \cdot 10^{-5}
                   -0.000112
                                         -0.000112
                                                                3.329 \cdot 10^{-5}
                                                                                                   2.268 \cdot 10^{-5}
                                                                                                                        2.267 \cdot 10^{-5}
                                                                                                                                              6.673 \cdot 10^{-5}
cdGRe
                -7.772 \cdot 10^{-32}
                                       -1.229 \cdot 10^{-31}
                                                                   -0.5815
                                                                                                   8.414 \cdot 10^{-17}
                                                                                                                       8.413 \cdot 10^{-17}
                                                                                                                                              6.673 \cdot 10^{-5}
cdHIm
                -2.773 \cdot 10^{-15}
                                       -2.773 \cdot 10^{-15}
                                                                3.336 \cdot 10^{-5}
                                                                                                   8.413 \cdot 10^{-17}
                                                                                                                       8.413 \cdot 10^{-17}
                                                                                                                                              6.673 \cdot 10^{-5}
cdHRe
                                        5.004 \cdot 10^{-22}
                                                                                                                         3.7 \cdot 10^{-7}
                 5.004 \cdot 10^{-22}
                                                                3.731 \cdot 10^{-5}
                                                                                                   3.701 \cdot 10^{-7}
                                                                                                                                              6.675 \cdot 10^{-5}
cdWIm
                 -6.236 \cdot 10^{-7}
                                        -6.236 \cdot 10^{-7}
                                                                3.337 \cdot 10^{-5}
                                                                                                   9.664 \cdot 10^{-7}
                                                                                                                        9.664 \cdot 10^{-7}
                                                                                                                                              6.673 \cdot 10^{-5}
cdWRe
                 -2.795 \cdot 10^{-6}
                                        -2.795 \cdot 10^{-6}
                                                                        0
                                                                                                    5.86 \cdot 10^{-7}
                                                                                                                        5.86 \cdot 10^{-7}
                                                                                                                                                     0
cll1
cqd1
                   -0.002704
                                          -0.002704
                                                                        0
                                                                                                       0.193
                                                                                                                            0.193
                                                                                                                                                     0
                     0.5697
                                             0.5697
                                                                        0
                                                                                                      0.1923
                                                                                                                           0.1923
                                                                                                                                                     0
cqd8
                         -0.001997
                                                -0.001997
                                                                              0
                                                                                                            0.01953
                                                                                                                                 0.01953
cqq1
                                                                                                                                                            0
                          0.001997
                                                 0.001997
                                                                              0
                                                                                                            0.01953
                                                                                                                                 0.01953
                                                                                                                                                            0
cqq3
                                                                                                            0.07812
                                                                                                                                                            0
                           0.02448
                                                  0.02448
                                                                              0
                                                                                                                                 0.07812
cqq31
                                                                                                             0.9496
                           0.02761
                                                   0.02761
                                                                              0
                                                                                                                                  0.9496
                                                                                                                                                            0
cqu1
                            0.1271
                                                   0.1271
                                                                              0
                                                                                                            0.04289
                                                                                                                                 0.04289
                                                                                                                                                            0
cqu8
                       -2.93 \cdot 10^{-30}
                                               -2.67 \cdot 10^{-30}
                                                                          0.08867
                                                                                                         4.213 \cdot 10^{-14}
                                                                                                                              4.212 \cdot 10^{-14}
                                                                                                                                                     6.673 \cdot 10^{-5}
cquqd11Im
                                                                        3.335 \cdot 10^{-5}
                       -3.073 \cdot 10^{-15}
                                              -3.073 \cdot 10^{-15}
                                                                                                         8.562 \cdot 10^{-15}
                                                                                                                              8.561 \cdot 10^{-15}
                                                                                                                                                     6.673 \cdot 10^{-5}
cquqd11Re
                                                                                                                              4.436 \cdot 10^{-14}
                                              -8.376 \cdot 10^{-30}
                       -1.258 \cdot 10^{-29}
                                                                           0.3344
                                                                                                         4.436 \cdot 10^{-14}
                                                                                                                                                     6.672 \cdot 10^{-5}
cquqd1Im
                                                                                                         4.436 \cdot 10^{-14}
                                                                                                                                                     6.674 \cdot 10^{-5}
                       -8.974 \cdot 10^{-14}
                                              -8.974 \cdot 10^{-14}
                                                                        3.336 \cdot 10^{-5}
                                                                                                                              4.436 \cdot 10^{-14}
cquqd1Re
                       -2.034 \cdot 10^{-31}
                                               4.303 \cdot 10^{-31}
                                                                            3.116
                                                                                                         1.903 \cdot 10^{-15}
                                                                                                                              1.902 \cdot 10^{-15}
                                                                                                                                                     6.67 \cdot 10^{-5}
cquqd81Im
                                              -3.939 \cdot 10^{-14}
                                                                       3.336 \cdot 10^{-5}
                       -3.939 \cdot 10^{-14}
                                                                                                         8.529 \cdot 10^{-15}
                                                                                                                              8.529 \cdot 10^{-15}
                                                                                                                                                     6.673 \cdot 10^{-5}
cquqd81Re
                                                2.18 \cdot 10^{-31}
                                                                                                                              9.858 \cdot 10^{-15}
                        5.467 \cdot 10^{-31}
                                                                           0.6013
                                                                                                         9.859 \cdot 10^{-15}
                                                                                                                                                     6.673 \cdot 10^{-5}
cquqd8Im
                                               3.047 \cdot 10^{-15}
                        3.047 \cdot 10^{-15}
                                                                       3.338 \cdot 10^{-5}
                                                                                                         9.859 \cdot 10^{-15}
                                                                                                                              9.858 \cdot 10^{-15}
                                                                                                                                                     6.673 \cdot 10^{-5}
cquqd8Re
                                               7.378 \cdot 10^{-30}
                                                                          -0.8229
                                                                                                         1.673 \cdot 10^{-14}
                                                                                                                              1.673 \cdot 10^{-14}
                        4.048 \cdot 10^{-30}
cuBIm
                                                                                                                                                            0
                                              -6.027 \cdot 10^{-14}
                                                                                                                              1.673 \cdot 10^{-14}
                       -6.027 \cdot 10^{-14}
                                                                                                         1.673 \cdot 10^{-14}
cuBRe
                                                                              0
                                                                                                                                                            0
                        5.784 \cdot 10^{-29}
                                               5.854 \cdot 10^{-29}
                                                                         -0.01212
                                                                                                         6.123 \cdot 10^{-13}
                                                                                                                              6.123 \cdot 10^{-13}
cuGIm
                                                                                                                                                            0
```

cuGRe	$-2.992 \cdot 10^{-11}$ $-2.99$	$02 \cdot 10^{-11}$ 0	$6.123 \cdot 10^{-13}$	$6.123 \cdot 10^{-13}$	0
cuHIm	$-3.842 \cdot 10^{-31}$ $-3.84$	$42 \cdot 10^{-31}$ 0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
cuHRe	$-2.773 \cdot 10^{-15}  -2.773$	$73 \cdot 10^{-15}$ 0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
cuWIm	$-4.224 \cdot 10^{-30}$ $-4.22$	$24 \cdot 10^{-30}$ 0	$2.586 \cdot 10^{-13}$	$2.586 \cdot 10^{-13}$	0
cuWRe	$1.393 \cdot 10^{-13}$ $1.393$	$3 \cdot 10^{-13}$ 0	$9.91 \cdot 10^{-14}$	$9.91 \cdot 10^{-14}$	0
cud1	-0.01794 $-0$	.01794 0	0.3144	0.3144	0
cud8	0.207	0.207	0.06987	0.06987	0
sm	0	0 0	0.9273	0.9273	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.0002959	-0.0002959	0	$6.45 \cdot 10^{-6}$	$6.45 \cdot 10^{-6}$	0	
cHWB	$-8.332 \cdot 10^{-6}$	$-8.332 \cdot 10^{-6}$	0	$4.01 \cdot 10^{-7}$	$4.01\cdot 10^{-7}$	0	
cH13	-0.0003055	-0.0003055	0	$1.738 \cdot 10^{-5}$	$1.738 \cdot 10^{-5}$	0	
cHq3	0.0001629	0.0001629	0	$4.937 \cdot 10^{-6}$	$4.937 \cdot 10^{-6}$	0	
$\mathtt{cHudIm}$	$-1.795 \cdot 10^{-24}$	$2.697 \cdot 10^{-25}$	1.15	$7.161 \cdot 10^{-9}$	$7.16 \cdot 10^{-9}$	$6.69 \cdot 10^{-5}$	
cHudRe	$-1.557 \cdot 10^{-8}$	$-1.557 \cdot 10^{-8}$	$3.347 \cdot 10^{-5}$	$2.252 \cdot 10^{-9}$	$2.252 \cdot 10^{-9}$	$6.688 \cdot 10^{-5}$	
cdWIm	$-2.243 \cdot 10^{-21}$	$-2.207 \cdot 10^{-21}$	0.01597	$2.555 \cdot 10^{-6}$	$2.555 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$	
cdWRe	$-9.999 \cdot 10^{-7}$	$-9.999 \cdot 10^{-7}$	$3.336 \cdot 10^{-5}$	$2.191 \cdot 10^{-6}$	$2.191 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$	
ceWIm	$-1.045 \cdot 10^{-28}$	$-1.045 \cdot 10^{-28}$	0	$6.82 \cdot 10^{-15}$	$6.82 \cdot 10^{-15}$	0	
ceWRe	$-5.362 \cdot 10^{-14}$	$-5.362 \cdot 10^{-14}$	0	$6.82 \cdot 10^{-15}$	$6.82 \cdot 10^{-15}$	0	
${\tt cledqIm}$	$-1.427 \cdot 10^{-19}$	$-1.427 \cdot 10^{-19}$	$3.335 \cdot 10^{-5}$	$4.138 \cdot 10^{-16}$	$4.138 \cdot 10^{-16}$	$6.672 \cdot 10^{-5}$	
cledqRe	$-8.501 \cdot 10^{-16}$	$-8.501 \cdot 10^{-16}$	$3.336 \cdot 10^{-5}$	$4.138 \cdot 10^{-16}$	$4.138 \cdot 10^{-16}$	$6.674 \cdot 10^{-5}$	
clequ1Im	$2.369 \cdot 10^{-16}$	$2.369 \cdot 10^{-16}$	0	$7.068 \cdot 10^{-13}$	$7.068 \cdot 10^{-13}$	$7.074 \cdot 10^{-8}$	
clequ1Re	$1.422 \cdot 10^{-12}$	$1.422 \cdot 10^{-12}$	$7.032 \cdot 10^{-8}$	$7.068 \cdot 10^{-13}$	$7.068 \cdot 10^{-13}$	$5.659 \cdot 10^{-8}$	
clequ3Im	$7.603 \cdot 10^{-17}$	$7.603 \cdot 10^{-17}$	$3.946 \cdot 10^{-8}$	$3.797 \cdot 10^{-13}$	$3.797 \cdot 10^{-13}$	$5.268 \cdot 10^{-8}$	
clequ3Re	$4.538 \cdot 10^{-13}$	$4.538 \cdot 10^{-13}$	$2.203 \cdot 10^{-8}$	$3.797 \cdot 10^{-13}$	$3.797 \cdot 10^{-13}$	$5.268 \cdot 10^{-8}$	

cll1	0.0002344	0.0002344	0	$1.022 \cdot 10^{-5}$	$1.022 \cdot 10^{-5}$	0
clq3	0.02539	0.02539	0	0.12	0.12	0
cuWIm	$-2.939 \cdot 10^{-18}$	$-2.922 \cdot 10^{-18}$	0.006038	0.003529	0.003529	$5.667 \cdot 10^{-8}$
cuWRe	-0.002578	-0.002578	0	0.004332	0.004332	$4.616 \cdot 10^{-8}$
sm	0	0	0	0.003395	0.003395	0

# **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	$6.375 \cdot 10^{-6}$	$6.375 \cdot 10^{-6}$	0	$2.9 \cdot 10^{-7}$	$2.9\cdot 10^{-7}$	0	
cHWB	-0.0004528	-0.0004528	0	$6.541 \cdot 10^{-5}$	$6.541 \cdot 10^{-5}$	0	
сНе	-0.0001099	-0.0001099	0	$1.903 \cdot 10^{-6}$	$1.903 \cdot 10^{-6}$	0	
cHl1	0.000333	0.000333	0	$8.346 \cdot 10^{-6}$	$8.346 \cdot 10^{-6}$	0	
cH13	$1.343 \cdot 10^{-6}$	$1.343 \cdot 10^{-6}$	0	$7.669 \cdot 10^{-7}$	$7.669 \cdot 10^{-7}$	0	
cHq1	-0.0002577	-0.0002577	0	$5.067 \cdot 10^{-6}$	$5.067 \cdot 10^{-6}$	0	
cHq3	$-4.4 \cdot 10^{-5}$	$-4.4 \cdot 10^{-5}$	0	$4.362 \cdot 10^{-6}$	$4.362 \cdot 10^{-6}$	0	
cHu	$-8.21 \cdot 10^{-5}$	$-8.21 \cdot 10^{-5}$	0	$4.775 \cdot 10^{-6}$	$4.775 \cdot 10^{-6}$	0	
ceBIm	$1.3 \cdot 10^{-26}$	$1.3 \cdot 10^{-26}$	0	$2.114 \cdot 10^{-10}$	$2.114 \cdot 10^{-10}$	0	
ceBRe	$4.177 \cdot 10^{-10}$	$4.177 \cdot 10^{-10}$	0	$2.492 \cdot 10^{-10}$	$2.492 \cdot 10^{-10}$	0	
ceHIm	$-1.238 \cdot 10^{-30}$	$-1.238 \cdot 10^{-30}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0	
ceHRe	$-2.065 \cdot 10^{-13}$	$-2.065 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0	
ceWIm	$-3.234 \cdot 10^{-26}$	$-3.234 \cdot 10^{-26}$	0	$3.709 \cdot 10^{-10}$	$3.709 \cdot 10^{-10}$	0	
ceWRe	$-1.001 \cdot 10^{-9}$	$-1.001 \cdot 10^{-9}$	0	$3.709 \cdot 10^{-10}$	$3.709 \cdot 10^{-10}$	0	
ceu	-0.04265	-0.04265	0	0.2491	0.2491	0	
clequ1Im	$-8.78 \cdot 10^{-29}$	$-8.78 \cdot 10^{-29}$	0	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	0	
clequ1Re	$6.546 \cdot 10^{-12}$	$6.546 \cdot 10^{-12}$	0	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	0	
clequ3Im	$-1.317 \cdot 10^{-27}$	$-1.317 \cdot 10^{-27}$	0	$2.34 \cdot 10^{-11}$	$2.34 \cdot 10^{-11}$	0	
clequ3Re	$1.811 \cdot 10^{-11}$	$1.811 \cdot 10^{-11}$	0	$2.34 \cdot 10^{-11}$	$2.34 \cdot 10^{-11}$	0	

cll1	$-3.045 \cdot 10^{-5}$	$-3.045 \cdot 10^{-5}$	0	$6.482 \cdot 10^{-7}$	$6.482 \cdot 10^{-7}$	0
clq1	-0.002121	-0.002121	0	0.009125	0.009125	0
clq3	0.0005095	0.0005095	0	0.002192	0.002192	0
clu	-0.0005207	-0.0005207	0	0.006121	0.006121	0
cqe	-0.000257	-0.000257	0	0.006121	0.006121	0
cuBIm	$2.005 \cdot 10^{-22}$	$2.005 \cdot 10^{-22}$	0	$9.526 \cdot 10^{-8}$	$9.526 \cdot 10^{-8}$	0
cuBRe	$-9.08 \cdot 10^{-8}$	$-9.08 \cdot 10^{-8}$	0	$9.526 \cdot 10^{-8}$	$9.526 \cdot 10^{-8}$	0
cuHIm	$-4.262 \cdot 10^{-30}$	$-4.262 \cdot 10^{-30}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
cuHRe	$-2.02 \cdot 10^{-13}$	$-2.02 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
cuWIm	$-8.191 \cdot 10^{-24}$	$-8.191 \cdot 10^{-24}$	0	$3.399 \cdot 10^{-8}$	$3.399 \cdot 10^{-8}$	0
cuWRe	$-7.647 \cdot 10^{-8}$	$-7.647 \cdot 10^{-8}$	0	$6.299 \cdot 10^{-8}$	$6.299 \cdot 10^{-8}$	0
sm	0	0	0	0.0007122	0.0007122	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.000974	-0.000974	0	$2.123 \cdot 10^{-5}$	$2.123 \cdot 10^{-5}$	0	
cHWB	-0.002312	-0.002312	0	0.0001113	0.0001113	0	
cH13	-0.0022	-0.0022	0	0.0001252	0.0001252	0	
сНqЗ	0.001173	0.001173	0	$3.557 \cdot 10^{-5}$	$3.557 \cdot 10^{-5}$	0	
$\mathtt{cHudIm}$	$-2.559 \cdot 10^{-31}$	$-2.559 \cdot 10^{-31}$	0	$2.184 \cdot 10^{-18}$	$2.184 \cdot 10^{-18}$	0	
cHudRe	$-4.004 \cdot 10^{-16}$	$-4.004 \cdot 10^{-16}$	0	$3.774 \cdot 10^{-18}$	$3.774 \cdot 10^{-18}$	0	
cdWIm	$-5.851 \cdot 10^{-25}$	$-5.851 \cdot 10^{-25}$	0	$5.723 \cdot 10^{-10}$	$5.723 \cdot 10^{-10}$	0	
cdWRe	$-1.282 \cdot 10^{-9}$	$-1.282 \cdot 10^{-9}$	0	$7.703 \cdot 10^{-10}$	$7.703 \cdot 10^{-10}$	0	
ceWIm	$9.403 \cdot 10^{-23}$	$9.403 \cdot 10^{-23}$	0	$1.648 \cdot 10^{-7}$	$1.648 \cdot 10^{-7}$	0	
ceWRe	$-5.218 \cdot 10^{-7}$	$-5.218 \cdot 10^{-7}$	0	$1.648 \cdot 10^{-7}$	$1.648 \cdot 10^{-7}$	0	
${\tt cledqIm}$	$8.338 \cdot 10^{-16}$	$8.338 \cdot 10^{-16}$	0	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	0	
cledqRe	$-4.973 \cdot 10^{-12}$	$-4.973 \cdot 10^{-12}$	0	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	0	

clequ1Im	$-1.54 \cdot 10^{-13}$	$-1.54 \cdot 10^{-13}$	0	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	0
clequ1Re	$9.191 \cdot 10^{-10}$	$9.191 \cdot 10^{-10}$	0	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	0
clequ3Im	$4.346 \cdot 10^{-13}$	$4.346 \cdot 10^{-13}$	0	$3.946 \cdot 10^{-9}$	$3.946 \cdot 10^{-9}$	0
clequ3Re	$-2.595 \cdot 10^{-9}$	$-2.595 \cdot 10^{-9}$	0	$3.946 \cdot 10^{-9}$	$3.946 \cdot 10^{-9}$	0
cll1	0.001688	0.001688	0	$7.36 \cdot 10^{-5}$	$7.36 \cdot 10^{-5}$	0
clq3	0.1829	0.1829	0	0.8645	0.8645	0
cuWIm	$9.773 \cdot 10^{-24}$	$9.773 \cdot 10^{-24}$	0	$1.436 \cdot 10^{-7}$	$1.436 \cdot 10^{-7}$	0
cuWRe	$-2.57 \cdot 10^{-7}$	$-2.57 \cdot 10^{-7}$	0	$1.067 \cdot 10^{-7}$	$1.067 \cdot 10^{-7}$	0
sm	0	0	0	0.01118	0.01118	0

## **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	-0.0006888	-0.0006888	0	$1.621 \cdot 10^{-5}$	$1.621 \cdot 10^{-5}$	0	
cHWB	-0.001962	-0.001962	0	0.0001167	0.0001167	0	
cHd	-0.0001084	-0.0001084	0	$5.695 \cdot 10^{-6}$	$5.695 \cdot 10^{-6}$	0	
cH13	-0.002735	-0.002735	0	0.0002574	0.0002574	0	
cHq1	-0.0002619	-0.0002619	0	$1.673 \cdot 10^{-6}$	$1.673 \cdot 10^{-6}$	0	
сНq3	0.001927	0.001927	0	0.0001213	0.0001213	0	
cHu	$5.909 \cdot 10^{-5}$	$5.909 \cdot 10^{-5}$	0	$2.251 \cdot 10^{-6}$	$2.251 \cdot 10^{-6}$	0	
cdBIm	$6.598 \cdot 10^{-29}$	$6.598 \cdot 10^{-29}$	0	$1.279 \cdot 10^{-12}$	$1.279 \cdot 10^{-12}$	0	
cdBRe	$1.837 \cdot 10^{-12}$	$1.837 \cdot 10^{-12}$	0	$1.302 \cdot 10^{-12}$	$1.302 \cdot 10^{-12}$	0	
cdGIm	$2.481 \cdot 10^{-33}$	$2.481 \cdot 10^{-33}$	0	$1.415 \cdot 10^{-11}$	$1.415 \cdot 10^{-11}$	0	
cdGRe	$-1.398 \cdot 10^{-10}$	$-1.398 \cdot 10^{-10}$	0	$1.073 \cdot 10^{-12}$	$1.073 \cdot 10^{-12}$	0	
$\mathtt{cdHIm}$	$-2.615 \cdot 10^{-32}$	$-2.615 \cdot 10^{-32}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0	
cdHRe	$-1.189 \cdot 10^{-15}$	$-1.189 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0	
cdWIm	$-1.566 \cdot 10^{-27}$	$-1.566 \cdot 10^{-27}$	0	$2.243 \cdot 10^{-12}$	$2.243 \cdot 10^{-12}$	0	
cdWRe	$-5.033 \cdot 10^{-12}$	$-5.033 \cdot 10^{-12}$	0	$2.285 \cdot 10^{-12}$	$2.285 \cdot 10^{-12}$	0	

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

		interferer	nce		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	$-6.136 \cdot 10^{-5}$	$-6.136 \cdot 10^{-5}$	0	$1.728 \cdot 10^{-6}$	$1.728 \cdot 10^{-6}$	0
cHWB	$-5.105 \cdot 10^{-5}$	$-5.105 \cdot 10^{-5}$	0	$2.038 \cdot 10^{-5}$	$2.038 \cdot 10^{-5}$	0
cHd	$-7.292 \cdot 10^{-6}$	$-7.292 \cdot 10^{-6}$	0	$2.994 \cdot 10^{-6}$	$2.994 \cdot 10^{-6}$	0
сНе	$-4.587 \cdot 10^{-5}$	$-4.587 \cdot 10^{-5}$	0	$6.691 \cdot 10^{-6}$	$6.691 \cdot 10^{-6}$	0
cHl1	$5.43 \cdot 10^{-5}$	$5.43 \cdot 10^{-5}$	0	$2.522 \cdot 10^{-6}$	$2.522 \cdot 10^{-6}$	0
cH13	-0.0005002	-0.0005002	0	$3.582 \cdot 10^{-5}$	$3.582 \cdot 10^{-5}$	0
cHq1	$6.144 \cdot 10^{-5}$	$6.144 \cdot 10^{-5}$	0	$2.939 \cdot 10^{-6}$	$2.939 \cdot 10^{-6}$	0
сНqЗ	0.0002056	0.0002056	0	$4.921 \cdot 10^{-6}$	$4.921 \cdot 10^{-6}$	0
$\mathtt{cdBIm}$	$-7.556 \cdot 10^{-28}$	$-7.556 \cdot 10^{-28}$	0	$2.325 \cdot 10^{-12}$	$2.325 \cdot 10^{-12}$	0
cdBRe		$1.56 \cdot 10^{-12}$	0	$1.19 \cdot 10^{-12}$	$1.19 \cdot 10^{-12}$	0
$\mathtt{cdHIm}$	$-2.571 \cdot 10^{-39}$	$-2.571 \cdot 10^{-39}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
cdHRe	$-6.449 \cdot 10^{-23}$	$-6.449 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
$\mathtt{cdWIm}$	$-2.471 \cdot 10^{-28}$	$-2.471 \cdot 10^{-28}$	0	$1.537 \cdot 10^{-12}$	$1.537 \cdot 10^{-12}$	0
cdWRe	$-1.587 \cdot 10^{-12}$	$-1.587 \cdot 10^{-12}$	0	$7.872 \cdot 10^{-13}$	$7.872 \cdot 10^{-13}$	0
$\mathtt{ceBIm}$	$2.214 \cdot 10^{-30}$	$2.214 \cdot 10^{-30}$	0	$2.925 \cdot 10^{-15}$	$2.925 \cdot 10^{-15}$	0
ceBRe	$1.202 \cdot 10^{-15}$	$1.202 \cdot 10^{-15}$	0	$3.125 \cdot 10^{-15}$	$3.125 \cdot 10^{-15}$	0
$\mathtt{ceHIm}$	$1.131 \cdot 10^{-38}$	$1.131 \cdot 10^{-38}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
ceHRe	$-6.46 \cdot 10^{-23}$	$-6.46 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
$\mathtt{ceWIm}$	$3.729 \cdot 10^{-30}$	$3.729 \cdot 10^{-30}$	0	$1.732 \cdot 10^{-1}$	$^4$ $1.732 \cdot 10^{-1}$	$^{4}$ 0
ceWRe	$-4.878 \cdot 10^{-15}$	$-4.878 \cdot 10^{-15}$	0	$1.732 \cdot 10^{-1}$	$^4$ $1.732 \cdot 10^{-14}$	$^{4}$ 0
ced	0.02061	0.02061	0	0.2407	0.2407	0
cld	0.0003196	0.0003196	0	0.007516	0.007516	0
${\tt cledqIm}$	$4.175 \cdot 10^{-38}$	$4.175 \cdot 10^{-38}$	0	$1.033 \cdot 10^{-2}$	$1.033 \cdot 10^{-2}$	0 - 0
cledqRe	$-2.088 \cdot 10^{-21}$	$-2.088 \cdot 10^{-21}$	0	$1.033 \cdot 10^{-2}$	$1.033 \cdot 10^{-2}$	0 - 0
cll1	0.0004118	0.0004118	0	$2.218 \cdot 10^{-6}$	$5   2.218 \cdot 10^{-5}$	0
clq1	0.01412	0.01412	0	0.07435	0.07435	0
clq3	0.04572	0.04572	0	0.2407	0.2407	0

cqe	-0.005756	-0.005756	0	0.132	0.132	0
sm	0	0	0	0.0008928	0.0008928	0

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

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cHDD	-0.0007958	-0.0007958	0	$1.674 \cdot 10^{-5}$	$1.674 \cdot 10^{-5}$	0		
cHWB	-0.0001737	-0.0001737	0	$1.521 \cdot 10^{-5}$	$1.521 \cdot 10^{-5}$	0		
cHd	$-6.184 \cdot 10^{-5}$	$-6.184 \cdot 10^{-5}$	0	$6.578 \cdot 10^{-6}$	$6.578 \cdot 10^{-6}$	0		
cH13	-0.0004967	-0.0004967	0	$4.23 \cdot 10^{-5}$	$4.23 \cdot 10^{-5}$	0		
cHq1	0.0004217	0.0004217	0	$2.765 \cdot 10^{-5}$	$2.765 \cdot 10^{-5}$	0		
сНqЗ	0.0004059	0.0004059	0	$2.664 \cdot 10^{-5}$	$2.664 \cdot 10^{-5}$	0		
$\mathtt{cdBIm}$	$2.727 \cdot 10^{-26}$	$1.183 \cdot 10^{-26}$	0.5664	$1.186 \cdot 10^{-10}$	$1.186 \cdot 10^{-10}$	0		
cdBRe	$-1.413 \cdot 10^{-10}$	$-1.413 \cdot 10^{-10}$	0	$2.859 \cdot 10^{-10}$	$2.859 \cdot 10^{-10}$	0		
$\mathtt{cdGIm}$	$-1.746 \cdot 10^{-24}$	$-1.77 \cdot 10^{-24}$	-0.01357	$1.045 \cdot 10^{-8}$	$1.045 \cdot 10^{-8}$	0		
cdGRe	$-5.56 \cdot 10^{-8}$	$-5.56 \cdot 10^{-8}$	0	$1.055 \cdot 10^{-8}$	$1.055 \cdot 10^{-8}$	0		
$\mathtt{cdHIm}$	$7.215 \cdot 10^{-34}$	$7.215 \cdot 10^{-34}$	0	$3.893 \cdot 10^{-19}$	$3.893 \cdot 10^{-19}$	0		
cdHRe	$-1.282 \cdot 10^{-17}$	$-1.282 \cdot 10^{-17}$	0	$7.787 \cdot 10^{-19}$	$7.787 \cdot 10^{-19}$	0		
$\mathtt{cdWIm}$	$3.722 \cdot 10^{-26}$	$5.151 \cdot 10^{-26}$	-0.3841	$7.023 \cdot 10^{-10}$	$7.023 \cdot 10^{-10}$	0		
cdWRe	$-7.734 \cdot 10^{-10}$	$-7.734 \cdot 10^{-10}$	0	$1.693 \cdot 10^{-9}$	$1.693 \cdot 10^{-9}$	0		
cdd	0.04558	0.04558	0	3.195	3.195	0		
cdd1	2.119	2.119	0	3.195	3.195	0		
cll1	0.0002483	0.0002483	0	$1.058 \cdot 10^{-5}$	$1.058 \cdot 10^{-5}$	0		
cqd1	-0.01184	-0.01184	0	0.8142	0.8142	0		
cqd8	0.5484	0.5484	0	0.1851	0.1851	0		
cqq1	0.0551	0.0551	0	0.5032	0.5032	0		
cqq11	0.3497	0.3497	$2.86 \cdot 10^{-8}$	0.5032	0.5032	$5.962 \cdot 10^{-8}$		
cqq3	0.0551	0.0551	0	0.5032	0.5032	0		

cqq31	0.3497	0.3497	0	0.5032	0.5032	$-1.987 \cdot 10^{-8}$
$\mathtt{sm}$	0	0	0	0.8	0.8	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.0003969	-0.0003969	0	$3.271 \cdot 10^{-5}$	$3.271 \cdot 10^{-5}$	0	
cHWB	0.008916	0.008916	0	0.003863	0.003863	0	
сНе	-0.0152	-0.0152	0	0.0009866	0.0009866	0	
cHl1	-0.002623	-0.002623	0	0.0003343	0.0003343	0	
cHl3	-0.3101	-0.3101	0	0.2984	0.2984	0	
ceBIm	$2.545 \cdot 10^{-28}$	$2.545 \cdot 10^{-28}$	0	$1.821 \cdot 10^{-13}$	$1.821 \cdot 10^{-13}$	0	
ceBRe	$7.789 \cdot 10^{-14}$	$7.789 \cdot 10^{-14}$	0	$7.144 \cdot 10^{-14}$	$7.144 \cdot 10^{-14}$	0	
ceWIm	$4.74 \cdot 10^{-28}$	$4.74 \cdot 10^{-28}$	0	$5.974 \cdot 10^{-13}$	$5.974 \cdot 10^{-13}$	0	
ceWRe	$2.934 \cdot 10^{-13}$	$2.934 \cdot 10^{-13}$	0	$5.974 \cdot 10^{-13}$	$5.974 \cdot 10^{-13}$	0	
cle	-6.826	-6.826	0	1	1	0	
cll	0.1667	0.1667	0	1.103	1.103	0	
cll1	3.45	3.45	0	0.2871	0.2871	0	
sm	0	0	0	0.02388	0.02388	0	

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.0001076	-0.0001076	0	$2.345 \cdot 10^{-6}$	$2.345 \cdot 10^{-6}$	0	
cHWB	-0.000439	-0.000439	0	$2.113 \cdot 10^{-5}$	$2.113 \cdot 10^{-5}$	0	
cH13	-0.001363	-0.001363	0	$3.623 \cdot 10^{-5}$	$3.623 \cdot 10^{-5}$	0	
ceWIm	$1.034 \cdot 10^{-25}$	$1.034 \cdot 10^{-25}$	0	$3.325 \cdot 10^{-9}$	$3.325 \cdot 10^{-9}$	0	

ceWRe	$-1.392 \cdot 10^{-9}$	$-1.392 \cdot 10^{-9}$	0	$3.325 \cdot 10^{-9}$	$3.325 \cdot 10^{-9}$	0
cll1	0.2449	0.2449	0	1.168	1.168	0
sm	0	0	0	0.001234	0.001234	0

# **1.65** $e^+\nu_e \to e^+\nu_e$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.004946	-0.004946	0	0.0001563	0.0001563	0	
cHWB	-0.0008074	-0.0008074	0	0.0009854	0.0009854	0	
сНе	-0.00351	-0.00351	0	0.0002278	0.0002278	0	
cHl1	-0.0006244	-0.0006244	0	$6.01 \cdot 10^{-5}$	$6.01 \cdot 10^{-5}$	0	
cH13	-0.006389	-0.006389	0	0.001334	0.001334	0	
ceBIm	$-7.231 \cdot 10^{-27}$	$-7.231 \cdot 10^{-27}$	0	$5.472 \cdot 10^{-14}$	$5.472 \cdot 10^{-14}$	0	
ceBRe	$1.381 \cdot 10^{-13}$	$1.381 \cdot 10^{-13}$	0	$9.089 \cdot 10^{-14}$	$9.089 \cdot 10^{-14}$	0	
ceWIm	$-1.291 \cdot 10^{-26}$	$-1.291 \cdot 10^{-26}$	0	$2.131 \cdot 10^{-15}$	$2.131 \cdot 10^{-15}$	0	
ceWRe	$-3.88 \cdot 10^{-14}$	$-3.88 \cdot 10^{-14}$	0	$2.131 \cdot 10^{-15}$	$2.131 \cdot 10^{-15}$	0	
cle	-0.445	-0.445	0	1	1	0	
cll	0.5274	0.5274	0	1.372	1.372	0	
cll1	0.9892	0.9892	0	2.188	2.188	0	
sm	0	0	0	0.07367	0.07367	0	

## **1.66** $e^+\tau^- \to e^+\tau^-$

	interference			square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
cHDD	-0.007067	-0.007067	0	0.0004177	0.0004177	0
cHWB	-0.000261	-0.000261	0	$3.753 \cdot 10^{-6}$	$3.753 \cdot 10^{-6}$	0
сНе	0.0013	0.0013	0	$4.509 \cdot 10^{-5}$	$4.509 \cdot 10^{-5}$	0

$\begin{array}{cccccccccccccccccccccccccccccccccccc$	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$^{-5}$ 0
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	2 0
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$^{-7}$ 0
	$^{-5}$ 0
	-18 0
ceHRe $-1.123 \cdot 10^{-16}$ $-1.123 \cdot 10^{-16}$ 0 $2.795 \cdot 10^{-18}$ $2.795 \cdot 10^{-}$	-18 0
ceWIm $3.067 \cdot 10^{-16}$ $3.067 \cdot 10^{-16}$ 0 $2.023 \cdot 10^{-7}$ $2.023 \cdot 10^{-7}$	$^{-7}$ 0
ceWRe $-4.814 \cdot 10^{-7}$ $-4.814 \cdot 10^{-7}$ 0 $2.024 \cdot 10^{-7}$ $2.024 \cdot 10^{-7}$	$^{-7}$ 0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0
cle $-0.5284$ $-0.5284$ 0 2	0
cl1 $-2.006$ $-2.006$ 0 $2.682$ $2.682$	0
cll1 $-0.2913$ $-0.2913$ 0 $1.026$ 1.026	0
0 0 0 0 0 0.9662	0

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

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	-0.0002721	-0.0002721	0	$8.807 \cdot 10^{-6}$	$8.807 \cdot 10^{-6}$	0
cHWB	-0.0004952	-0.0004952	0	0.0002461	0.0002461	0
сНе	-0.001357	-0.001357	0	$4.353 \cdot 10^{-5}$	$4.353 \cdot 10^{-5}$	0
cHl1	0.001669	0.001669	0	$5.604 \cdot 10^{-5}$	$5.604 \cdot 10^{-5}$	0
cHl3	-0.0001197	-0.0001197	0	$2.356 \cdot 10^{-5}$	$2.356 \cdot 10^{-5}$	0
ceBIm	$-1.856 \cdot 10^{-26}$	$-1.856 \cdot 10^{-26}$	0	$2.01 \cdot 10^{-9}$	$2.01 \cdot 10^{-9}$	0
ceBRe	$5.16 \cdot 10^{-9}$	$5.16 \cdot 10^{-9}$	0	$3.267 \cdot 10^{-9}$	$3.267 \cdot 10^{-9}$	0
$\mathtt{ceHIm}$	$4.701 \cdot 10^{-36}$	$4.701 \cdot 10^{-36}$	0	$6.017 \cdot 10^{-21}$	$6.017 \cdot 10^{-21}$	0
ceHRe	$-1.999 \cdot 10^{-19}$	$-1.999 \cdot 10^{-19}$	0	$1.203 \cdot 10^{-20}$	$1.203 \cdot 10^{-20}$	0
ceWIm	$-8.405 \cdot 10^{-26}$	$-8.405 \cdot 10^{-26}$	0	$1.329 \cdot 10^{-9}$	$1.329 \cdot 10^{-9}$	0
ceWRe	$-3.624 \cdot 10^{-9}$	$-3.624 \cdot 10^{-9}$	0	$1.329 \cdot 10^{-9}$	$1.329 \cdot 10^{-9}$	0

cee	0.3548	0.3548	0	2.763	2.763	0
cle	0.07313	0.07313	0	0.5733	0.5733	0
cll	0.2311	0.2311	0	1.681	1.681	0
cll1	0.1189	0.1189	0	0.8707	0.8707	0
sm	0	0	0	0.01588	0.01588	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	0.0005556	0.0005556	0	$4.149 \cdot 10^{-6}$	$4.149 \cdot 10^{-6}$	0	
cHWB	-0.2183	-0.2183	0	0.06962	0.06962	0	
сНе	-0.08956	-0.08956	0	0.02184	0.02184	0	
cHl1	0.227	0.227	0	0.02314	0.02314	0	
cH13	-0.003158	-0.003158	0	0.0003997	0.0003997	0	
ceBIm	$1.489 \cdot 10^{-28}$	$1.489 \cdot 10^{-28}$	0	$1.264 \cdot 10^{-11}$	$1.264 \cdot 10^{-11}$	0	
ceBRe	$3.554 \cdot 10^{-13}$	$3.554 \cdot 10^{-13}$	0	$8.883 \cdot 10^{-13}$	$8.883 \cdot 10^{-13}$	0	
$\mathtt{ceHIm}$	$-4.464 \cdot 10^{-29}$	$-4.464 \cdot 10^{-29}$	0	$4.385 \cdot 10^{-25}$	$4.385 \cdot 10^{-25}$	0	
ceHRe	$1.449 \cdot 10^{-13}$	$1.449 \cdot 10^{-13}$	0	$8.129 \cdot 10^{-25}$	$8.129 \cdot 10^{-25}$	0	
$\mathtt{ceWIm}$	$2.21 \cdot 10^{-28}$	$2.21 \cdot 10^{-28}$	0	$7.393 \cdot 10^{-12}$	$7.393 \cdot 10^{-12}$	0	
ceWRe	$4.785 \cdot 10^{-12}$	$4.785 \cdot 10^{-12}$	0	$7.393 \cdot 10^{-12}$	$7.393 \cdot 10^{-12}$	0	
cee	-15.33	-15.33	0	14.3	14.3	0	
cle	-0.9562	-0.9562	0	2.143	2.143	0	
cll	-0.05204	-0.05204	0	1.638	1.638	0	
cll1	-1.596	-1.596	0	8.498	8.498	0	
sm	0	0	0	0.02252	0.02252	0	

**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	$-4.715 \cdot 10^{-10}$	$-4.716 \cdot 10^{-10}$	$-1.389 \cdot 10^{-5}$	90.13	90.13	0	
cGtil	$1.054 \cdot 10^{-15}$	$7.942 \cdot 10^{-16}$	0.2463	90.13	90.13	0	
cHGtil	$9.374 \cdot 10^{-18}$	$9.374 \cdot 10^{-18}$	0	$4.054 \cdot 10^{-34}$	$4.054 \cdot 10^{-34}$	0	
sm	0	0	0	111.9	111.9	0	

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сG	-0.001904	-0.001904	0	0.01471	0.01471	0
cGtil	0.002155	0.002155	0	0.01471	0.01471	0
cHGtil	$-1.33 \cdot 10^{-14}$	$-1.33 \cdot 10^{-14}$	0	$1.518 \cdot 10^{-26}$	$1.518 \cdot 10^{-26}$	0
sm	0	0	0	0.03463	0.03463	0

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

		interfere	square		
	mod1	mod2	$1-{\tt mod2/mod1}$	$\mathtt{mod1}  \mathtt{mod2}  1-\mathtt{mod2}/\mathtt{mo}$	od1
сG	-1.091	-1.091	0	0.4541  0.4541  0	
cGtil	$1.315 \cdot 10^{-17}$	$1.315 \cdot 10^{-17}$	0	0.4541  0.4541  0	
cHG	-0.07951	-0.07951	0	$0.04069  0.04069 \qquad 0$	
cHGtil	$-1.648 \cdot 10^{-17}$	$-1.648 \cdot 10^{-17}$	0	$0.04069  0.04069 \qquad 0$	
cuGIm	$2.825 \cdot 10^{-17}$	$3.28 \cdot 10^{-17}$	-0.1609	$0.09769  0.09769  6.142 \cdot 10^{-8}$	-8
cuGRe	-0.6546	-0.6546	$3.055 \cdot 10^{-8}$	$0.1189  0.1189  8.411 \cdot 10^{-8}$	-8
sm	0	0	0	3.013 3.013 0	

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

	interference			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сG	$-2.761 \cdot 10^{-10}$	$-2.761 \cdot 10^{-10}$	0	0.2946	0.2946	0	
cGtil	$-3.143 \cdot 10^{-27}$	$-3.143 \cdot 10^{-27}$	0	0.2946	0.2946	0	
сHG	$-4.214 \cdot 10^{-11}$	$-4.214 \cdot 10^{-11}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0	
cHGtil	$9.215 \cdot 10^{-28}$	$9.215 \cdot 10^{-28}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0	
$\mathtt{cuGIm}$	$7.181 \cdot 10^{-28}$	$7.181 \cdot 10^{-28}$	0	$1.211 \cdot 10^{-11}$	$1.211 \cdot 10^{-11}$	0	
cuGRe	$-1.975 \cdot 10^{-11}$	$-1.975 \cdot 10^{-11}$	0	$1.211 \cdot 10^{-11}$	$1.211 \cdot 10^{-11}$	0	
sm	0	0	0	0.323	0.323	0	

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	-0.0001822	-0.0001822	0	$3.503 \cdot 10^{-6}$	$3.503 \cdot 10^{-6}$	0		
cHWB	$-8.866 \cdot 10^{-5}$	$-8.866 \cdot 10^{-5}$	0	$3.308 \cdot 10^{-6}$	$3.308 \cdot 10^{-6}$	0		
cHd	$-9.197 \cdot 10^{-6}$	$-9.197 \cdot 10^{-6}$	0	$1.79 \cdot 10^{-6}$	$1.79 \cdot 10^{-6}$	0		
cHl1	-0.0001665	-0.0001665	0	$5.048 \cdot 10^{-6}$	$5.048 \cdot 10^{-6}$	0		
cH13	-0.0007343	-0.0007343	0	$3.408 \cdot 10^{-5}$	$3.408 \cdot 10^{-5}$	0		
cHq1	0.0001926	0.0001926	0	$6.915 \cdot 10^{-6}$	$6.915 \cdot 10^{-6}$	0		
cHq3	0.0005684	0.0005684	0	$2.041 \cdot 10^{-5}$	$2.041 \cdot 10^{-5}$	0		
cdBIm	$4.971 \cdot 10^{-26}$	$4.971 \cdot 10^{-26}$	0	$1.503 \cdot 10^{-10}$	$1.503 \cdot 10^{-10}$	0		
cdBRe	$-4.476 \cdot 10^{-10}$	$-4.476 \cdot 10^{-10}$	0	$4.689 \cdot 10^{-11}$	$4.689 \cdot 10^{-11}$	0		
cdWIm	$9.005 \cdot 10^{-26}$	$9.005 \cdot 10^{-26}$	0	$4.931 \cdot 10^{-10}$	$4.931 \cdot 10^{-10}$	0		
cdWRe	$-8.108 \cdot 10^{-10}$	$-8.108 \cdot 10^{-10}$	0	$1.539 \cdot 10^{-10}$	$1.539 \cdot 10^{-10}$	0		
cld	$6.423 \cdot 10^{-5}$	$6.423 \cdot 10^{-5}$	0	0.001491	0.001491	0		
cll1	0.0006071	0.0006071	0	$2.329 \cdot 10^{-5}$	$2.329\cdot10^{-5}$	0		

clq1	-0.04076	-0.04076	0	0.1745	0.1745	0
clq3	0.06778	0.06778	0	0.2902	0.2902	0
sm	0	0	0	0.002392	0.002392	0

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

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	0.004772	0.004772	0	$1.811 \cdot 10^{-5}$	$1.811 \cdot 10^{-5}$	0	
cHWB	0.02091	0.02091	0	0.0005154	0.0005154	0	
cHd	0.002485	0.002485	0	0.0004091	0.0004091	0	
cH13	0.1049	0.1049	0	0.006639	0.006639	0	
cHq1	-0.04896	-0.04896	0	0.001078	0.001078	0	
сНqЗ	-0.08569	-0.08569	0	0.00407	0.00407	0	
cdBIm	$5.911 \cdot 10^{-23}$	$5.91 \cdot 10^{-23}$	0.0001943	$3.821 \cdot 10^{-9}$	$3.821 \cdot 10^{-9}$	0	
cdBRe	$-2.378 \cdot 10^{-8}$	$-2.378 \cdot 10^{-8}$	0	$1.305 \cdot 10^{-8}$	$1.305 \cdot 10^{-8}$	0	
$\mathtt{cdGIm}$	$-5.251 \cdot 10^{-24}$	$-5.251 \cdot 10^{-24}$	0	$4.11 \cdot 10^{-7}$	$4.11 \cdot 10^{-7}$	0	
cdGRe	$-2.68 \cdot 10^{-7}$	$-2.68 \cdot 10^{-7}$	0	$2.033 \cdot 10^{-7}$	$2.033 \cdot 10^{-7}$	0	
$\mathtt{cdHIm}$	$5.942 \cdot 10^{-25}$	$5.942 \cdot 10^{-25}$	$-5.891 \cdot 10^{-7}$	$3.934 \cdot 10^{-16}$	$3.934 \cdot 10^{-16}$	0	
cdHRe	$8.695 \cdot 10^{-8}$	$8.695 \cdot 10^{-8}$	0	$6.738 \cdot 10^{-16}$	$6.738 \cdot 10^{-16}$	0	
$\mathtt{cdWIm}$	$9.309 \cdot 10^{-23}$	$9.314 \cdot 10^{-23}$	-0.0004937	$2.25 \cdot 10^{-8}$	$2.25 \cdot 10^{-8}$	0	
cdWRe	$1.807 \cdot 10^{-7}$	$1.807 \cdot 10^{-7}$	0	$7.594 \cdot 10^{-8}$	$7.594 \cdot 10^{-8}$	0	
cdd	-0.6645	-0.6645	0	2.641	2.641	0	
cdd1	-0.6645	-0.6645	$-3.01 \cdot 10^{-8}$	2.641	2.641	$-7.572 \cdot 10^{-8}$	
cll1	-0.05245	-0.05245	0	0.00166	0.00166	0	
cqd1	0.09025	0.09025	0	2.163	2.163	0	
cqd8	-7.764	-7.764	0	0.4571	0.4571	0	
cqq1	-10.83	-10.83	0	7.369	7.369	0	
cqq11	-10.83	-10.83	0	7.369	7.369	$1.357 \cdot 10^{-7}$	

cqq3	-10.83	-10.83	0	7.369	7.369	0
cqq31	-10.83	-10.83	$-9.234 \cdot 10^{-8}$	7.369	7.369	$-5.428 \cdot 10^{-8}$
sm	0	0	0	5.483	5.483	0

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

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	-0.0002081	-0.0002081	0	$5.354 \cdot 10^{-6}$	$5.354 \cdot 10^{-6}$	0
cHWB	-0.0001252	-0.0001252	0	$1.558 \cdot 10^{-5}$	$1.558 \cdot 10^{-5}$	0
cHl1	-0.0001199	-0.0001199	0	$3.633 \cdot 10^{-6}$	$3.633 \cdot 10^{-6}$	0
cHl3	-0.000784	-0.000784	0	$5.62 \cdot 10^{-5}$	$5.62 \cdot 10^{-5}$	0
cHq1	-0.0001567	-0.0001567	0	$7.214 \cdot 10^{-6}$	$7.214 \cdot 10^{-6}$	0
cHq3	0.0004893	0.0004893	0	$2.186 \cdot 10^{-5}$	$2.186 \cdot 10^{-5}$	0
cHu	$-6.894 \cdot 10^{-6}$	$-6.894 \cdot 10^{-6}$	0	$8.756 \cdot 10^{-7}$	$8.756 \cdot 10^{-7}$	0
cll1	0.0005582	0.0005582	0	$2.845 \cdot 10^{-5}$	$2.845 \cdot 10^{-5}$	0
clq1	0.04358	0.04358	0	0.2333	0.2333	0
clq3	0.05836	0.05836	0	0.3109	0.3109	0
clu	-0.004585	-0.004585	0	0.07522	0.07522	0
cuBIm	$3.516 \cdot 10^{-19}$	$3.516 \cdot 10^{-19}$	0	0.0003418	0.0003418	$5.851 \cdot 10^{-8}$
cuBRe	0.001025	0.001025	0	0.0004966	0.0004966	$4.027 \cdot 10^{-8}$
cuWIm	$-1.698 \cdot 10^{-20}$	$-1.698 \cdot 10^{-20}$	0	0.0002727	0.0002727	$3.667 \cdot 10^{-8}$
cuWRe	-0.001857	-0.001857	$5.386 \cdot 10^{-8}$	0.00163	0.00163	$6.137 \cdot 10^{-8}$
sm	0	0	0	0.002057	0.002057	0

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

cHDD	-0.0002564	-0.0002564	0	$6.394 \cdot 10^{-6}$	$6.394 \cdot 10^{-6}$	0
cHWB	-0.0001099	-0.0001099	0	$1.019 \cdot 10^{-5}$	$1.019 \cdot 10^{-5}$	0
сНе	$4.61 \cdot 10^{-5}$	$4.61\cdot10^{-5}$	0	$6.517 \cdot 10^{-6}$	$6.517 \cdot 10^{-6}$	0
cHl1	$-1.475 \cdot 10^{-5}$	$-1.475 \cdot 10^{-5}$	0	$1.823 \cdot 10^{-6}$	$1.823 \cdot 10^{-6}$	0
cH13	-0.0005851	-0.0005851	0	$4.783 \cdot 10^{-5}$	$4.783 \cdot 10^{-5}$	0
cHq1	$1.169 \cdot 10^{-5}$	$1.169 \cdot 10^{-5}$	0	$3.525 \cdot 10^{-6}$	$3.525 \cdot 10^{-6}$	0
cHq3	0.0002905	0.0002905	0	$5.725 \cdot 10^{-6}$	$5.725 \cdot 10^{-6}$	0
cHu	0.0001931	0.0001931	0	$4.686 \cdot 10^{-6}$	$4.686 \cdot 10^{-6}$	0
ceBIm	$-5.999 \cdot 10^{-23}$	$-5.999 \cdot 10^{-23}$	0	$9.731 \cdot 10^{-8}$	$9.731 \cdot 10^{-8}$	0
ceBRe	$-3.021 \cdot 10^{-7}$	$-3.021 \cdot 10^{-7}$	0	$3.481 \cdot 10^{-8}$	$3.481 \cdot 10^{-8}$	0
ceHIm	$-1.093 \cdot 10^{-22}$	$-1.093 \cdot 10^{-22}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	0
ceHRe	$-9.92 \cdot 10^{-7}$	$-9.92 \cdot 10^{-7}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	0
ceWIm	$-2.654 \cdot 10^{-22}$	$-2.654 \cdot 10^{-22}$	0	$1.645 \cdot 10^{-7}$	$1.645 \cdot 10^{-7}$	0
ceWRe	$-4.932 \cdot 10^{-7}$	$-4.932 \cdot 10^{-7}$	0	$1.645 \cdot 10^{-7}$	$1.645 \cdot 10^{-7}$	0
ceu	-0.004189	-0.004189	0	0.02203	0.02203	0
clequ1Im	$-7.419 \cdot 10^{-22}$	$1.195 \cdot 10^{-23}$	1.016	$1.711 \cdot 10^{-5}$	$1.711 \cdot 10^{-5}$	$5.844 \cdot 10^{-8}$
clequ1Re	$3.409 \cdot 10^{-5}$	$3.409 \cdot 10^{-5}$	$2.933 \cdot 10^{-8}$	$1.711 \cdot 10^{-5}$	$1.711 \cdot 10^{-5}$	$5.844 \cdot 10^{-8}$
clequ3Im	$-8.641 \cdot 10^{-21}$	$4.971 \cdot 10^{-21}$	1.575	0.000223	0.000223	$4.483 \cdot 10^{-8}$
clequ3Re	-0.0001172	-0.0001172	0	0.000223	0.000223	$4.483 \cdot 10^{-8}$
cll1	0.0004813	0.0004813	0	$2.4 \cdot 10^{-5}$	$2.4 \cdot 10^{-5}$	0
clq1	-0.07071	-0.07071	0	0.3006	0.3006	0
clq3	0.06642	0.06642	0	0.2821	0.2821	0
clu	-0.01924	-0.01924	0	0.199	0.199	0
cqe	-0.01006	-0.01006	0	0.199	0.199	0
cuBIm	$-5.132 \cdot 10^{-19}$	$-5.132 \cdot 10^{-19}$	$2.578 \cdot 10^{-5}$	0.0005919	0.0005919	$6.758 \cdot 10^{-8}$
cuBRe	-0.003981	-0.003981	$2.512 \cdot 10^{-8}$	0.001354	0.001354	$7.386 \cdot 10^{-8}$
cuHIm	$6.884 \cdot 10^{-23}$	$1.632 \cdot 10^{-22}$	-1.371	$3.439 \cdot 10^{-8}$	$3.439 \cdot 10^{-8}$	$5.816 \cdot 10^{-8}$
cuHRe	$-1.015 \cdot 10^{-6}$	$-1.015 \cdot 10^{-6}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	$6.554 \cdot 10^{-8}$
cuWIm	$-5.367 \cdot 10^{-19}$	$-5.367 \cdot 10^{-19}$	$-6.849 \cdot 10^{-5}$	0.0006016	0.0006016	$6.649 \cdot 10^{-8}$

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

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	-0.0003373	-0.0003373	0	$7.923 \cdot 10^{-6}$	$7.923 \cdot 10^{-6}$	0
cHWB	-0.0002208	-0.0002208	0	$2.265 \cdot 10^{-5}$	$2.265 \cdot 10^{-5}$	0
cH13	-0.00134	-0.00134	0	0.0001259	0.0001259	0
cHq1	0.0001252	0.0001252	0	$1.153 \cdot 10^{-5}$	$1.153 \cdot 10^{-5}$	0
cHq3	0.0008841	0.0008841	0	$4.967 \cdot 10^{-5}$	$4.967 \cdot 10^{-5}$	0
cHu	0.0001123	0.0001123	0	$2.036 \cdot 10^{-5}$	$2.036 \cdot 10^{-5}$	0
cll1	0.0006698	0.0006698	0	$3.147 \cdot 10^{-5}$	$3.147 \cdot 10^{-5}$	0
cqq1	0.1616	0.1616	0	1.465	1.465	0
cqq11	1.097	1.097	0	1.465	1.465	$-6.828 \cdot 10^{-8}$
cqq3	0.1616	0.1616	0	1.465	1.465	0
cqq31	1.097	1.097	$9.117 \cdot 10^{-8}$	1.465	1.465	0
cqu1	0.01992	0.01992	0	0.3572	0.3572	0
cqu8	1.214	1.214	0	0.3966	0.3966	0
cuBIm	$-2.351 \cdot 10^{-18}$	$-2.351 \cdot 10^{-18}$	$-2.807 \cdot 10^{-6}$	0.003282	0.003282	$6.094 \cdot 10^{-8}$
cuBRe	-0.003328	-0.003328	$3.005 \cdot 10^{-8}$	0.004146	0.004146	$7.236 \cdot 10^{-8}$
cuGIm	$-8.813 \cdot 10^{-23}$	$-9.097 \cdot 10^{-23}$	-0.0322	0.03566	0.03566	$5.609 \cdot 10^{-8}$
cuGRe	-0.1971	-0.1971	$5.074 \cdot 10^{-8}$	0.04504	0.04504	$6.66 \cdot 10^{-8}$
cuHIm	$-1.633 \cdot 10^{-22}$	$-1.684 \cdot 10^{-22}$	-0.03123	$9.945 \cdot 10^{-8}$	$9.945 \cdot 10^{-8}$	$4.022 \cdot 10^{-8}$
cuHRe	$-3.053 \cdot 10^{-6}$	$-3.053 \cdot 10^{-6}$	$3.276 \cdot 10^{-8}$	$1.87 \cdot 10^{-7}$	$1.87 \cdot 10^{-7}$	0
cuWIm	$-1.256 \cdot 10^{-17}$	$-1.256 \cdot 10^{-17}$	$-1.266 \cdot 10^{-5}$	0.005768	0.005768	$5.201 \cdot 10^{-8}$
cuWRe	-0.005618	-0.005618	$1.78 \cdot 10^{-8}$	0.007274	0.007274	$6.874 \cdot 10^{-8}$
cuu	0.08584	0.08584	0	1.475	1.475	0

cuu1	1.079	1.079	0	1.475	1.475	0
$\mathtt{sm}$	0	0	0	0.5981	0.5981	0

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

		interferen		square			
	mod1	mod2	1 - mod2/mod1	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$1.372 \cdot 10^{-6}$	$1.372 \cdot 10^{-6}$	0	$2.81 \cdot 10^{-7}$	$2.81 \cdot 10^{-7}$	0	
cHWB	-0.001068	-0.001068	0	$6.992 \cdot 10^{-5}$	$6.992 \cdot 10^{-5}$	0	
cHd	$7.854 \cdot 10^{-5}$	$7.854 \cdot 10^{-5}$	0	$2.848 \cdot 10^{-5}$	$2.848 \cdot 10^{-5}$	0	
cHl3	-0.0003973	-0.0003973	0	$4.107 \cdot 10^{-5}$	$4.107 \cdot 10^{-5}$	0	
cHq1	-0.0001444	-0.0001444	0	$1.89 \cdot 10^{-6}$	$1.89 \cdot 10^{-6}$	0	
cHq3	0.0002965	0.0002965	0	$2.083 \cdot 10^{-5}$	$2.083 \cdot 10^{-5}$	0	
cHu	0.0001391	0.0001391	0	$4.41 \cdot 10^{-5}$	$4.41\cdot 10^{-5}$	0	
cdBIm	$4.043 \cdot 10^{-27}$	$4.11 \cdot 10^{-27}$	-0.01665	$8.274 \cdot 10^{-13}$	$8.274 \cdot 10^{-13}$	0	
cdBRe	$5.206 \cdot 10^{-12}$	$5.206 \cdot 10^{-12}$	0	$2.384 \cdot 10^{-12}$	$2.384 \cdot 10^{-12}$	0	
$\mathtt{cdGIm}$	$8.668 \cdot 10^{-28}$	$8.555 \cdot 10^{-28}$	0.01294	$2.682 \cdot 10^{-11}$	$2.682 \cdot 10^{-11}$	0	
cdGRe	$-1.567 \cdot 10^{-10}$	$-1.567 \cdot 10^{-10}$	0	$2.536 \cdot 10^{-11}$	$2.536 \cdot 10^{-11}$	0	
$\mathtt{cdHIm}$	$1.49 \cdot 10^{-28}$	$1.069 \cdot 10^{-28}$	0.2824	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	0	
cdHRe	$-2.079 \cdot 10^{-11}$	$-2.079 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	0	
$\mathtt{cdWIm}$	$7.316 \cdot 10^{-27}$	$7.247 \cdot 10^{-27}$	0.009417	$1.322 \cdot 10^{-12}$	$1.322 \cdot 10^{-12}$	0	
cdWRe	$-7.299 \cdot 10^{-12}$	$-7.299 \cdot 10^{-12}$	0	$4.052 \cdot 10^{-12}$	$4.052 \cdot 10^{-12}$	0	
cll1	0.0001986	0.0001986	0	$1.027 \cdot 10^{-5}$	$1.027 \cdot 10^{-5}$	0	
cqd1	-0.002999	-0.002999	0	0.0926	0.0926	0	
cqd8	0.3359	0.3359	0	0.1067	0.1067	0	
cqq1	-0.0446	5 -0.04465	0	0.4538	0.4538	0	
cqq3	0.04465	0.04465	0	0.4538	0.4538	0	
cqq31	0.725	0.725	0	1.815	1.815	0	
cqu1	0.01948	0.01948	0	0.8796	0.8796	0	

cqu8	0.08063	0.08063	0	0.02058	0.02058	0
cquqd11Im	$2.375 \cdot 10^{-27}$	$-3.384 \cdot 10^{-28}$	1.142	$3.116 \cdot 10^{-10}$	$3.116 \cdot 10^{-10}$	$6.419 \cdot 10^{-8}$
cquqd11Re	$7.507 \cdot 10^{-12}$	$7.507 \cdot 10^{-12}$	$2.664 \cdot 10^{-8}$	$3.28 \cdot 10^{-11}$	$3.28 \cdot 10^{-11}$	$6.098 \cdot 10^{-8}$
cquqd1Im	$-9.256 \cdot 10^{-26}$	$-8.093 \cdot 10^{-26}$	0.1257	$3.545 \cdot 10^{-10}$	$3.545 \cdot 10^{-10}$	$5.641 \cdot 10^{-8}$
cquqd1Re	$-7.057 \cdot 10^{-10}$	$-7.057 \cdot 10^{-10}$	$4.251 \cdot 10^{-8}$	$3.545 \cdot 10^{-10}$	$3.545 \cdot 10^{-10}$	$5.641 \cdot 10^{-8}$
cquqd81Im	$-1.06 \cdot 10^{-26}$	$-8.208 \cdot 10^{-27}$	0.2257	$7.289 \cdot 10^{-12}$	$7.289 \cdot 10^{-12}$	$5.488 \cdot 10^{-8}$
cquqd81Re	$-2.315 \cdot 10^{-10}$	$-2.315 \cdot 10^{-10}$	$4.32 \cdot 10^{-8}$	$3.781 \cdot 10^{-11}$	$3.781 \cdot 10^{-11}$	$5.29 \cdot 10^{-8}$
cquqd8Im	$4.954 \cdot 10^{-27}$	$4.971 \cdot 10^{-27}$	-0.003397	$7.878 \cdot 10^{-11}$	$7.878 \cdot 10^{-11}$	$6.347 \cdot 10^{-8}$
cquqd8Re	$1.007 \cdot 10^{-11}$	$1.007 \cdot 10^{-11}$	$9.926 \cdot 10^{-8}$	$7.878 \cdot 10^{-11}$	$7.878 \cdot 10^{-11}$	$6.347 \cdot 10^{-8}$
cuBIm	$2.112 \cdot 10^{-21}$	$2.13 \cdot 10^{-21}$	-0.008703	0.0002425	0.0002425	$8.246 \cdot 10^{-8}$
cuBRe	-0.0003238	-0.0003238	$3.088 \cdot 10^{-8}$	0.0004992	0.0004992	$6.01 \cdot 10^{-8}$
cuGIm	$-1.654 \cdot 10^{-24}$	$-1.471 \cdot 10^{-24}$	0.1111	0.008869	0.008869	$5.637 \cdot 10^{-8}$
cuGRe	-0.1971	-0.1971	$5.074 \cdot 10^{-8}$	0.01825	0.01825	$5.478 \cdot 10^{-8}$
cuHIm	$-1.032 \cdot 10^{-27}$	$-1.764 \cdot 10^{-27}$	-0.7092	$7.125 \cdot 10^{-13}$	$7.125 \cdot 10^{-13}$	$7.018 \cdot 10^{-8}$
cuHRe	$-2.079 \cdot 10^{-11}$	$-2.079 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	$6.326 \cdot 10^{-8}$
cuWIm	$-4.419 \cdot 10^{-18}$	$-4.419 \cdot 10^{-18}$	$1.598 \cdot 10^{-5}$	0.005182	0.005182	$5.789 \cdot 10^{-8}$
cuWRe	0.0003311	0.0003311	$3.021 \cdot 10^{-8}$	0.002956	0.002956	$6.767 \cdot 10^{-8}$
cud1	-0.03046	-0.03046	0	0.5264	0.5264	0
cud8	0.3663	0.3663	0	0.117	0.117	0
sm	0	0	0	0.9249	0.9249	0

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-5.983 \cdot 10^{-5}$	$-5.983 \cdot 10^{-5}$	0	$1.659 \cdot 10^{-6}$	$1.659 \cdot 10^{-6}$	0	
cHWB	$6.04 \cdot 10^{-5}$	$6.04 \cdot 10^{-5}$	0	$3.806 \cdot 10^{-5}$	$3.806 \cdot 10^{-5}$	0	
cHd	$4.491 \cdot 10^{-5}$	$4.491 \cdot 10^{-5}$	0	$1.894 \cdot 10^{-5}$	$1.894 \cdot 10^{-5}$	0	
cH13	-0.001685	-0.001685	0	0.0001611	0.0001611	0	

cHq1	$5.891 \cdot 10^{-5}$	$5.891 \cdot 10^{-5}$	0	$7.116 \cdot 10^{-6}$	$7.116 \cdot 10^{-6}$	0
cHq3	0.001176	0.001176	0	$7.44 \cdot 10^{-5}$	$7.44 \cdot 10^{-5}$	0
сHu	$8.218 \cdot 10^{-5}$	$3.218 \cdot 10^{-5}$	0	$2.921 \cdot 10^{-5}$	$2.921 \cdot 10^{-5}$	0
cdBIm	$7.426 \cdot 10^{-24}$ 7	$0.324 \cdot 10^{-24}$	0.01375	$8.227 \cdot 10^{-10}$	$8.227 \cdot 10^{-10}$	0
cdBRe	$-1.04 \cdot 10^{-9}$ -	$-1.04 \cdot 10^{-9}$	0	$9.705 \cdot 10^{-10}$	$9.705 \cdot 10^{-10}$	0
$\mathtt{cdGIm}$	$1.455 \cdot 10^{-24}$ 1	$.454 \cdot 10^{-24}$	0.0009867	$1.091 \cdot 10^{-8}$	$1.091 \cdot 10^{-8}$	0
cdGRe	$-6.213 \cdot 10^{-8}$ -	$6.213 \cdot 10^{-8}$	0	$5.371 \cdot 10^{-9}$	$5.371 \cdot 10^{-9}$	0
$\mathtt{cdHIm}$	$-2.965 \cdot 10^{-25}$ -	$4.633 \cdot 10^{-27}$	0.9844	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0
cdHRe	$-8.322 \cdot 10^{-9}$ -	$8.322 \cdot 10^{-9}$	0	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0
$\mathtt{cdWIm}$	$1.297 \cdot 10^{-23}$ 1	$.307 \cdot 10^{-23}$	-0.008127	$1.392 \cdot 10^{-9}$	$1.392 \cdot 10^{-9}$	0
cdWRe	$1.67 \cdot 10^{-10}$	$1.67 \cdot 10^{-10}$	0	$1.651 \cdot 10^{-9}$	$1.651 \cdot 10^{-9}$	0
cll1	0.0008427	0.0008427	0	$4.028 \cdot 10^{-5}$	$4.028 \cdot 10^{-5}$	0
cqd1	-0.013	-0.013	0	0.8076	0.8076	0
cqd8	0.1024	0.1024	0	0.02794	0.02794	0
cqq1	-0.1847	-0.1847	0	1.824	1.824	0
cqq3	0.1847	0.1847	0	1.824	1.824	0
cqq31	2.436	2.436	0	7.296	7.296	$-1.371 \cdot 10^{-8}$
cqu1	0.01077	0.01077	0	0.5803	0.5803	0
cqu8	0.5514	0.5514	0	0.1795	0.1795	0
cquqd11Im	$-9.448 \cdot 10^{-25}$	$2.158 \cdot 10^{-24}$	3.284	$8.152 \cdot 10$	$0^{-8}$ $8.152 \cdot 10^{-8}$	$6.133 \cdot 10^{-8}$
cquqd11Re	$-4.038 \cdot 10^{-8}$	$-4.038 \cdot 10^{-8}$	$2.476 \cdot 10^{-8}$	$1.134 \cdot 10$	$0^{-7}$ $1.134 \cdot 10^{-7}$	0
cquqd1Im	$6.778 \cdot 10^{-25}$		-3.254	$1.406 \cdot 10$		$7.112 \cdot 10^{-8}$
cquqd1Re	$-2.795 \cdot 10^{-7}$			$1.406 \cdot 10$	$0^{-7}$ $1.406 \cdot 10^{-7}$	$7.112 \cdot 10^{-8}$
cquqd81Im	$-1.072 \cdot 10^{-24}$		0.6751	$2.521 \cdot 10$	$0^{-8}$ $2.521 \cdot 10^{-8}$	$7.933 \cdot 10^{-8}$
cquqd81Re	$-4.75 \cdot 10^{-8}$		$4.211 \cdot 10^{-8}$	$3.924 \cdot 10$		$5.097 \cdot 10^{-8}$
cquqd8Im	$5.795 \cdot 10^{-25}$			$3.124 \cdot 10$		$6.401 \cdot 10^{-8}$
cquqd8Re	$-3.597 \cdot 10^{-9}$	$-3.597 \cdot 10^{-9}$	$2.78 \cdot 10^{-8}$	$3.124 \cdot 10$	$0^{-8}$ $3.124 \cdot 10^{-8}$	$6.401 \cdot 10^{-8}$
cuBIm	$-4.988 \cdot 10^{-19}$	$-4.989 \cdot 10^{-19}$	-0.0002005	0.000749	0.0007496	$5.336 \cdot 10^{-8}$
cuBRe	-0.0001329	-0.0001329	0	0.00100	0.001006	$9.938 \cdot 10^{-8}$

cuGIm	$-3.033 \cdot 10^{-24}$	$-2.86 \cdot 10^{-24}$	0.05723	0.02741	0.02741	$7.296 \cdot 10^{-8}$
cuGRe	-0.1971	-0.1971	0	0.0368	0.0368	$5.435 \cdot 10^{-8}$
cuHIm	$-1.054 \cdot 10^{-25}$	$-2.188 \cdot 10^{-25}$	-1.077	$2.826 \cdot 10^{-10}$	$2.826 \cdot 10^{-10}$	$3.539 \cdot 10^{-8}$
cuHRe	$-8.322 \cdot 10^{-9}$	$-8.322 \cdot 10^{-9}$	$3.605 \cdot 10^{-8}$	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	$3.988 \cdot 10^{-8}$
cuWIm	$1.448 \cdot 10^{-18}$	$1.447 \cdot 10^{-18}$	$4.774 \cdot 10^{-5}$	0.005335	0.005335	$5.623 \cdot 10^{-8}$
cuWRe	-0.001272	-0.001272	0	0.005958	0.005958	$6.714 \cdot 10^{-8}$
cud1	-0.001399	-0.001399	0	0.01721	0.01721	0
cud8	0.03098	0.03098	0	0.003824	0.003824	0
sm	0	0	0	0.6954	0.6954	0

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

		rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	0.02029	0.02029	0	0.0009005	0.0009005	0	
cHWB	0.009775	0.009775	0	0.0002238	0.0002238	0	
cHl3	0.1073	0.1073	0	0.01467	0.01467	0	
cHq1	0.07733	0.07733	0	0.008739	0.008739	0	
cHq3	-0.05297	-0.05297	0	0.008622	0.008622	0	
cHu	-0.03422	-0.03422	0	0.008904	0.008904	0	
cll1	-0.05363	-0.05363	0	0.003668	0.003668	0	
cqq1	-0.2983	-0.2983	0	3.833	3.833	0	
cqq11	-0.2983	-0.2983	0	3.833	3.833	0	
cqq3	-0.2983	-0.2983	$3.353 \cdot 10^{-8}$	3.833	3.833	$5.218 \cdot 10^{-8}$	
cqq31	-0.2983	-0.2983	$3.353 \cdot 10^{-8}$	3.833	3.833	$5.218 \cdot 10^{-8}$	
cqu1	-0.3143	-0.3143	0	13.72	13.72	0	
cqu8	-2.857	-2.857	0	2.061	2.061	0	
cuBIm	$1.607 \cdot 10^{-17}$	$1.56 \cdot 10^{-17}$	0.02904	0.005505	0.005505	$5.45 \cdot 10^{-8}$	
cuBRe	0.0192	0.0192	0	0.01353	0.01353	$7.389 \cdot 10^{-8}$	

cuGIm	$9.043 \cdot 10^{-19}$	$-1.7 \cdot 10^{-18}$	2.88	0.03333	0.03333	$6 \cdot 10^{-8}$
cuGRe	-0.1361	-0.1361	$7.35 \cdot 10^{-8}$	0.1021	0.1021	0
cuHIm	$8.482 \cdot 10^{-20}$	$-6.985 \cdot 10^{-19}$	9.235	0.004802	0.004802	$6.247 \cdot 10^{-8}$
cuHRe	0.06786	0.06786	$2.947 \cdot 10^{-8}$	0.008593	0.008593	$5.819 \cdot 10^{-8}$
cuWIm	$2.33 \cdot 10^{-18}$	$2.59 \cdot 10^{-18}$	-0.1116	0.07839	0.07839	$6.379 \cdot 10^{-8}$
cuWRe	0.02092	0.02092	0	0.0181	0.0181	$5.525 \cdot 10^{-8}$
cuu	0.00847	0.00847	0	0.1269	0.1269	0
cuu1	0.00847	0.00847	0	0.1269	0.1269	0
sm	0	0	0	0.3224	0.3224	0

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

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	-0.0002843	-0.0002843	0	$6.198 \cdot 10^{-6}$	$6.198 \cdot 10^{-6}$	0	
cHWB	-0.0001962	-0.0001962	0	$9.446 \cdot 10^{-6}$	$9.446 \cdot 10^{-6}$	0	
cH13	-0.0009393	-0.0009393	0	$5.343 \cdot 10^{-5}$	$5.343 \cdot 10^{-5}$	0	
cHq3	0.0005009	0.0005009	0	$1.518 \cdot 10^{-5}$	$1.518 \cdot 10^{-5}$	0	
cHudIm	$-4.54 \cdot 10^{-39}$	$-4.54 \cdot 10^{-39}$	0	$8.283 \cdot 10^{-25}$	$8.283 \cdot 10^{-25}$	0	
cHudRe	$-3.037 \cdot 10^{-24}$	$-3.037 \cdot 10^{-24}$	0	$4.305 \cdot 10^{-25}$	$4.305 \cdot 10^{-25}$	0	
$\mathtt{cdWIm}$	$-5.281 \cdot 10^{-27}$	$-5.281 \cdot 10^{-27}$	0	$3.083 \cdot 10^{-12}$	$3.083 \cdot 10^{-12}$	0	
cdWRe	$-2.113 \cdot 10^{-12}$	$-2.113 \cdot 10^{-12}$	0	$3.088 \cdot 10^{-12}$	$3.088 \cdot 10^{-12}$	0	
ceWIm	$5.733 \cdot 10^{-27}$	$5.733 \cdot 10^{-27}$	0	$1.224 \cdot 10^{-9}$	$1.224 \cdot 10^{-9}$	0	
ceWRe	$-5.375 \cdot 10^{-10}$	$-5.375 \cdot 10^{-10}$	0	$1.224 \cdot 10^{-9}$	$1.224 \cdot 10^{-9}$	0	
${\tt cledqIm}$	$7.395 \cdot 10^{-21}$	$7.395 \cdot 10^{-21}$	0	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	0	
cledqRe	$-4.418 \cdot 10^{-17}$	$-4.418 \cdot 10^{-17}$	0	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	0	
clequ1Im	$-1.583 \cdot 10^{-21}$	$-1.583 \cdot 10^{-21}$	0	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	0	
clequ1Re	$9.477 \cdot 10^{-18}$	$9.477 \cdot 10^{-18}$	0	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	0	
clequ3Im	$-5.275 \cdot 10^{-22}$	$-5.275 \cdot 10^{-22}$	0	$3.185 \cdot 10^{-19}$	$3.185 \cdot 10^{-19}$	0	

clequ3Re	$3.149 \cdot 10^{-18}$	$3.149 \cdot 10^{-18}$	0	$3.185 \cdot 10^{-19}$	$3.185 \cdot 10^{-19}$	0
cll1	0.0007206	0.0007206	0	$3.142 \cdot 10^{-5}$	$3.142 \cdot 10^{-5}$	0
clq3	0.07809	0.07809	0	0.3691	0.3691	0
cuWIm	$1.048 \cdot 10^{-27}$	$1.048 \cdot 10^{-27}$	0	$6.606 \cdot 10^{-13}$	$6.606 \cdot 10^{-13}$	0
cuWRe	$-4.016 \cdot 10^{-13}$	$-4.016 \cdot 10^{-13}$	0	$6.596 \cdot 10^{-13}$	$6.596 \cdot 10^{-13}$	0
sm	0	0	0	0.003262	0.003262	0

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

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	-0.0001901	-0.0001901	0	$4.145 \cdot 10^{-6}$	$4.145 \cdot 10^{-6}$	0	
cHWB	-0.001909	-0.001909	0	$9.191 \cdot 10^{-5}$	$9.191 \cdot 10^{-5}$	0	
cH13	-0.006392	-0.006392	0	0.0005573	0.0005573	0	
cHq3	0.004447	0.004447	0	0.0002696	0.0002696	0	
$\mathtt{cHudIm}$	$6.794 \cdot 10^{-34}$	$6.794 \cdot 10^{-34}$	0	$1.748 \cdot 10^{-16}$	$1.748 \cdot 10^{-16}$	0	
cHudRe	$-1.249 \cdot 10^{-15}$	$-1.249 \cdot 10^{-15}$	0	$3.793 \cdot 10^{-16}$	$3.793 \cdot 10^{-16}$	0	
cdWIm	$1.747 \cdot 10^{-26}$	$1.747 \cdot 10^{-26}$	0	$2.541 \cdot 10^{-9}$	$2.541 \cdot 10^{-9}$	0	
cdWRe	$-3.065 \cdot 10^{-9}$	$-3.065 \cdot 10^{-9}$	0	$3.403 \cdot 10^{-9}$	$3.403 \cdot 10^{-9}$	0	
cll1	0.003199	0.003199	0	0.0001395	0.0001395	0	
cqq11	0.1156	0.1156	$1.731 \cdot 10^{-7}$	1.638	1.638	$6.104 \cdot 10^{-8}$	
cqq3	0.6933	0.6933	0	6.553	6.553	0	
cqq31	-0.1156	-0.1156	$1.731 \cdot 10^{-7}$	1.638	1.638	$6.104 \cdot 10^{-8}$	
cquqd11Im	$-8.403 \cdot 10^{-19}$	$-8.403 \cdot 10^{-19}$	0	$5.818 \cdot 10^{-15}$	$5.818 \cdot 10^{-15}$	0	
cquqd11Re	$-3.44 \cdot 10^{-15}$	$-3.44 \cdot 10^{-15}$	0	$2.682 \cdot 10^{-15}$	$2.682 \cdot 10^{-15}$	0	
cquqd1Im	$-3.204 \cdot 10^{-18}$	$-3.204 \cdot 10^{-18}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0	
cquqd1Re	$-1.923 \cdot 10^{-14}$	$-1.923 \cdot 10^{-14}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0	
cquqd81Im	$-7.666 \cdot 10^{-19}$	$-7.666 \cdot 10^{-19}$	0	$5.961 \cdot 10^{-16}$	$5.961 \cdot 10^{-16}$	0	
cquqd81Re	$-3.156 \cdot 10^{-15}$	$-3.156 \cdot 10^{-15}$	0	$2.76 \cdot 10^{-16}$	$2.76 \cdot 10^{-16}$	0	
cquqd8Im	$5.484 \cdot 10^{-33}$	$5.484 \cdot 10^{-33}$	0	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0	

cquqd8Re	$-6.262 \cdot 10^{-31}$	$-6.262 \cdot 10^{-31}$	0	$2.129 \cdot 10^{-15}$ $2.129 \cdot 10^{-15}$	0
cuWIm	$-2.353 \cdot 10^{-23}$	$-2.353 \cdot 10^{-23}$	0	$6.331 \cdot 10^{-7}$ $6.331 \cdot 10^{-7}$	0
cuWRe	$-1.967 \cdot 10^{-7}$	$-1.967 \cdot 10^{-7}$	0	$4.727 \cdot 10^{-7}$ $4.727 \cdot 10^{-7}$	0
sm	0	0	0	$0.002182 \qquad 0.002182$	0

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

		ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	0.0003841	0.0003841	0	$6.923 \cdot 10^{-6}$	$6.923 \cdot 10^{-6}$	0	
cHWB	0.06277	0.06277	0	0.008817	0.008817	0	
cHd	0.0001219	0.0001219	0	$5.197 \cdot 10^{-5}$	$5.197 \cdot 10^{-5}$	0	
cH13	0.006439	0.006439	0	0.0004193	0.0004193	0	
cHq1	-0.008015	-0.008015	0	0.000571	0.000571	0	
cHq3	-0.004291	-0.004291	0	0.0002208	0.0002208	0	
cHu	0.0003142	0.0003142	0	$7.755 \cdot 10^{-5}$	$7.755 \cdot 10^{-5}$	0	
$\mathtt{cHudIm}$	$-5.655 \cdot 10^{-36}$	$-5.655 \cdot 10^{-36}$	0	$1.353 \cdot 10^{-25}$	$1.353 \cdot 10^{-25}$	0	
cHudRe	$-1.114 \cdot 10^{-20}$	$-1.114 \cdot 10^{-20}$	0	$5.679 \cdot 10^{-24}$	$5.679 \cdot 10^{-24}$	0	
$\mathtt{cdBIm}$	$-3.826 \cdot 10^{-26}$	$-3.826 \cdot 10^{-26}$	$-5.75 \cdot 10^{-7}$	$2.809 \cdot 10^{-12}$	$2.809 \cdot 10^{-12}$	0	
cdBRe	$-2.435 \cdot 10^{-12}$	$-2.435 \cdot 10^{-12}$	0	$6.357 \cdot 10^{-12}$	$6.357 \cdot 10^{-12}$	0	
$\mathtt{cdGIm}$	$-1.264 \cdot 10^{-26}$	$-1.264 \cdot 10^{-26}$	0	$6.935 \cdot 10^{-11}$	$6.935 \cdot 10^{-11}$	0	
cdGRe	$-1.574 \cdot 10^{-10}$	$-1.574 \cdot 10^{-10}$	0	$8.28 \cdot 10^{-10}$	$8.28 \cdot 10^{-10}$	0	
$\mathtt{cdHIm}$	$3.276 \cdot 10^{-36}$	$3.218 \cdot 10^{-36}$	0.01774	$9.783 \cdot 10^{-23}$	$9.783 \cdot 10^{-23}$	0	
cdHRe	$1.31 \cdot 10^{-21}$	$1.31 \cdot 10^{-21}$	0	$7.991 \cdot 10^{-23}$	$7.991 \cdot 10^{-23}$	0	
$\mathtt{cdWIm}$	$6.107 \cdot 10^{-27}$	$6.107 \cdot 10^{-27}$	$2.87 \cdot 10^{-5}$	$1.203 \cdot 10^{-11}$	$1.203 \cdot 10^{-11}$	0	
cdWRe	$2.332 \cdot 10^{-11}$	$2.332 \cdot 10^{-11}$	0	$1.913 \cdot 10^{-11}$	$1.913 \cdot 10^{-11}$	0	
cll1	-0.003221	-0.003221	0	0.0001049	0.0001049	0	
cqd1	0.1323	0.1323	0	1	1	0	
cqd8	-1.056	-1.056	0	0.2222	0.2222	0	

cqq1	0.1313	0.1313	0	0.5668	0.5668	0
cqq11	0.1313	0.1313	$-2.284 \cdot 10^{-7}$	0.5668	0.5668	$5.293 \cdot 10^{-8}$
cqq3	-1.028	-1.028	0	2.078	2.078	0
cqq31	-1.028	-1.028	$-9.732 \cdot 10^{-8}$	2.078	2.078	$-9.624 \cdot 10^{-8}$
cqu1	-0.03512	-0.03512	0	1	1	0
cqu8	-5.404	-5.404	0	0.2222	0.2222	0
cquqd11Im	$-4.465 \cdot 10^{-35}$	$-4.465 \cdot 10^{-35}$	-0.000117	$1.19 \cdot 10^{-19}$	$1.19 \cdot 10^{-19}$	0
cquqd11Re	$8.523 \cdot 10^{-21}$	$8.523 \cdot 10^{-21}$	0	$6.069 \cdot 10^{-20}$	$6.069 \cdot 10^{-20}$	0
cquqd1Im	$1.529 \cdot 10^{-33}$	$1.53 \cdot 10^{-33}$	-0.001094	$6.069 \cdot 10^{-20}$	$6.069 \cdot 10^{-20}$	0
cquqd1Re	$1.885 \cdot 10^{-21}$	$1.885 \cdot 10^{-21}$	0	$1.19 \cdot 10^{-19}$	$1.19 \cdot 10^{-19}$	0
cquqd81Im	$3.278 \cdot 10^{-34}$	$3.298 \cdot 10^{-34}$	-0.00612	$1.149 \cdot 10^{-20}$	$1.149 \cdot 10^{-20}$	0
cquqd81Re	$2.338 \cdot 10^{-20}$	$2.338 \cdot 10^{-20}$	0	$1.197 \cdot 10^{-20}$	$1.197 \cdot 10^{-20}$	0
cquqd8Im	$3.278 \cdot 10^{-34}$	$3.298 \cdot 10^{-34}$	-0.00612	$1.149 \cdot 10^{-20}$	$1.149 \cdot 10^{-20}$	0
cquqd8Re	$2.338 \cdot 10^{-20}$	$2.338 \cdot 10^{-20}$	0	$1.197 \cdot 10^{-20}$	$1.197 \cdot 10^{-20}$	0
cuBIm	$-3.685 \cdot 10^{-26}$	$-3.684 \cdot 10^{-26}$	0.0002854	$1.746 \cdot 10^{-13}$	$1.746 \cdot 10^{-13}$	0
cuBRe	$-1.358 \cdot 10^{-13}$	$-1.358 \cdot 10^{-13}$	0	$1.746 \cdot 10^{-13}$	$1.746 \cdot 10^{-13}$	0
cuGIm	$-4.909 \cdot 10^{-27}$	$-4.902 \cdot 10^{-27}$	0.001429	$6.553 \cdot 10^{-12}$	$6.553 \cdot 10^{-12}$	0
cuGRe	$-3.082 \cdot 10^{-11}$	$-3.082 \cdot 10^{-11}$	0	$6.553 \cdot 10^{-12}$	$6.553 \cdot 10^{-12}$	0
cuHIm	$-7.7 \cdot 10^{-34}$	$-7.701 \cdot 10^{-34}$	-0.0001628	$7.991 \cdot 10^{-23}$	$7.991 \cdot 10^{-23}$	0
cuHRe	$1.31 \cdot 10^{-21}$	$1.31 \cdot 10^{-21}$	0	$7.991 \cdot 10^{-23}$	$7.991 \cdot 10^{-23}$	0
cuWIm	$1.884 \cdot 10^{-25}$	$1.884 \cdot 10^{-25}$	0.0002382	$4.088 \cdot 10^{-12}$	$4.088 \cdot 10^{-12}$	0
cuWRe	$-2.239 \cdot 10^{-12}$	$-2.239 \cdot 10^{-12}$	0	$2.571 \cdot 10^{-12}$	$2.571 \cdot 10^{-12}$	0
cud1	0.3551	0.3551	0	0.7711	0.7711	0
cud8	-4.167	-4.167	0	0.1714	0.1714	0
sm	0	0	0	1.623	1.623	0

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

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
cHDD	-0.0001036	-0.0001036	0	$2.677 \cdot 10^{-6}$	$2.677 \cdot 10^{-6}$	0
cHWB	$-8.05 \cdot 10^{-5}$	$-8.05 \cdot 10^{-5}$	0	$1.313 \cdot 10^{-5}$	$1.313 \cdot 10^{-5}$	0
cHl1	-0.0001116	-0.0001116	0	$3.382 \cdot 10^{-6}$	$3.382 \cdot 10^{-6}$	0
cH13	-0.0007842	-0.0007842	0	$5.472 \cdot 10^{-5}$	$5.472 \cdot 10^{-5}$	0
cHq1	-0.0001353	-0.0001353	0	$5.954 \cdot 10^{-6}$	$5.954 \cdot 10^{-6}$	0
cHq3	0.000495	0.000495	0	$2.179 \cdot 10^{-5}$	$2.179 \cdot 10^{-5}$	0
cHu	$3.992 \cdot 10^{-5}$	$3.992 \cdot 10^{-5}$	0	$3.886 \cdot 10^{-6}$	$3.886 \cdot 10^{-6}$	0
cll1	0.0005626	0.0005626	0	$2.815 \cdot 10^{-5}$	$2.815 \cdot 10^{-5}$	0
clq1	0.02231	0.02231	0	0.1171	0.1171	0
clq3	0.05904	0.05904	0	0.31	0.31	0
clu	-0.007063	-0.007063	0	0.08199	0.08199	0
cuBIm	$1.124 \cdot 10^{-28}$	$1.124 \cdot 10^{-28}$	0	$9.783 \cdot 10^{-14}$	$9.783 \cdot 10^{-14}$	0
cuBRe	$8.739 \cdot 10^{-14}$	$8.739 \cdot 10^{-14}$	0	$9.783 \cdot 10^{-14}$	$9.783 \cdot 10^{-14}$	0
cuWIm	$-1.613 \cdot 10^{-30}$	$-1.613 \cdot 10^{-30}$	0	$4.577 \cdot 10^{-14}$	$4.577 \cdot 10^{-14}$	0
cuWRe	$-1.583 \cdot 10^{-13}$	$-1.583 \cdot 10^{-13}$	0	$3.21 \cdot 10^{-13}$	$3.21 \cdot 10^{-13}$	0
sm	0	0	0	0.001165	0.001165	0

#### 1.85 $u\bar{u} \rightarrow c\bar{c}$

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-7.398 \cdot 10^{-6}$	$-7.398 \cdot 10^{-6}$	0	$4.198 \cdot 10^{-7}$	$4.198 \cdot 10^{-7}$	0	
cHWB	-0.001125	-0.001125	0	$9.965 \cdot 10^{-5}$	$9.965 \cdot 10^{-5}$	0	
cH13	-0.0002234	-0.0002234	0	$2.391 \cdot 10^{-5}$	$2.391 \cdot 10^{-5}$	0	
cHq1	-0.001365	-0.001365	0	$7.361 \cdot 10^{-5}$	$7.361 \cdot 10^{-5}$	0	
cHq3	$9.059 \cdot 10^{-5}$	$9.059 \cdot 10^{-5}$	0	$1.648 \cdot 10^{-5}$	$1.648 \cdot 10^{-5}$	0	
cHu	-0.0002343	-0.0002343	0	$5.09 \cdot 10^{-5}$	$5.09 \cdot 10^{-5}$	0	
cll1	0.0001117	0.0001117	0	$5.976 \cdot 10^{-6}$	$5.976 \cdot 10^{-6}$	0	

cqq1	0.02955	0.02955	0	0.2705	0.2705	0
cqq11	0.188	0.188	0	0.2705	0.2705	$7.393 \cdot 10^{-8}$
cqq3	0.02955	0.02955	0	0.2705	0.2705	0
cqq31	0.188	0.188	0	0.2705	0.2705	0
cqu1	0.04234	0.04234	0	1.513	1.513	0
cqu8	0.09021	0.09021	0	0.03044	0.03044	0
cuBIm	$5.259 \cdot 10^{-25}$	$5.251 \cdot 10^{-25}$	0.001365	$8.86 \cdot 10^{-8}$	$8.86 \cdot 10^{-8}$	0
cuBRe	$-8.045 \cdot 10^{-8}$	$-8.045 \cdot 10^{-8}$	0	$8.86 \cdot 10^{-8}$	$8.86 \cdot 10^{-8}$	0
cuGIm	$-4.596 \cdot 10^{-22}$	$-4.596 \cdot 10^{-22}$	0	$9.625 \cdot 10^{-7}$	$9.625 \cdot 10^{-7}$	0
cuGRe	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$9.625 \cdot 10^{-7}$	$9.625 \cdot 10^{-7}$	0
$\mathtt{cuHIm}$	$-9.258 \cdot 10^{-34}$	$-9.258 \cdot 10^{-34}$	0	$1.553 \cdot 10^{-17}$	$1.553 \cdot 10^{-17}$	0
cuHRe	$-5.153 \cdot 10^{-16}$	$-5.153 \cdot 10^{-16}$	0	$3.107 \cdot 10^{-17}$	$3.107 \cdot 10^{-17}$	0
cuWIm	$3.121 \cdot 10^{-24}$	$3.119 \cdot 10^{-24}$	0.0004602	$2.64 \cdot 10^{-7}$	$2.64 \cdot 10^{-7}$	0
cuWRe	$-1.109 \cdot 10^{-7}$	$-1.109 \cdot 10^{-7}$	0	$1.554 \cdot 10^{-7}$	$1.554 \cdot 10^{-7}$	0
cuu	0.003872	0.003872	0	0.06786	0.06786	0
cuu1	0.04598	0.04598	0	0.06786	0.06786	$-1.474 \cdot 10^{-8}$
sm	0	0	0	0.7551	0.7551	0

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	0.009958	0.009958	0	$6.936 \cdot 10^{-5}$	$6.936 \cdot 10^{-5}$	0	
cHWB	0.00456	0.00456	0	0.0001883	0.0001883	0	
cHl3	0.0001541	0.0001541	0	$3.165 \cdot 10^{-6}$	$3.165 \cdot 10^{-6}$	0	
cHq1	0.01022	0.01022	0	0.0001291	0.0001291	0	
сHq3	-0.000348	-0.000348	0	$2.722 \cdot 10^{-5}$	$2.722 \cdot 10^{-5}$	0	
cHu	-0.01856	-0.01856	0	0.0006417	0.0006417	0	
cll1	$-7.703 \cdot 10^{-5}$	$-7.703 \cdot 10^{-5}$	0	$7.912 \cdot 10^{-7}$	$7.912 \cdot 10^{-7}$	0	

cqq1	-0.0002548	-0.0002548	0	0.01967	0.01967	0
cqq11	-0.0002548	-0.0002548	$7.849 \cdot 10^{-8}$	0.01967	0.01967	$1.017 \cdot 10^{-7}$
cqq3	-0.0002548	-0.0002548	0	0.01967	0.01967	0
cqq31	-0.0002548	-0.0002548	0	0.01967	0.01967	$-1.017 \cdot 10^{-7}$
cqu1	-0.1705	-0.1705	0	2.228	2.228	0
cqu8	-2.01	-2.01	0	0.5777	0.5777	0
cuBIm	$2.96 \cdot 10^{-26}$	$2.96 \cdot 10^{-26}$	$-1.186 \cdot 10^{-5}$	$1.181 \cdot 10^{-11}$	$1.181 \cdot 10^{-11}$	0
cuBRe	$1.514 \cdot 10^{-11}$	$1.514 \cdot 10^{-11}$	0	$1.181 \cdot 10^{-11}$	$1.181 \cdot 10^{-11}$	0
cuGIm	$2.26 \cdot 10^{-26}$	$2.26 \cdot 10^{-26}$	0	$8.561 \cdot 10^{-11}$	$8.561 \cdot 10^{-11}$	0
cuGRe	$-1.304 \cdot 10^{-10}$	$-1.304 \cdot 10^{-10}$	0	$8.561 \cdot 10^{-11}$	$8.561 \cdot 10^{-11}$	0
cuHIm	$-3.888 \cdot 10^{-28}$	$-3.888 \cdot 10^{-28}$	0	$1.147 \cdot 10^{-22}$	$1.147 \cdot 10^{-22}$	0
cuHRe	$2.955 \cdot 10^{-11}$	$2.955 \cdot 10^{-11}$	0	$2.008 \cdot 10^{-22}$	$2.008 \cdot 10^{-22}$	0
cuWIm	$1.559 \cdot 10^{-26}$	$1.559 \cdot 10^{-26}$	-0.0003606	$8.988 \cdot 10^{-13}$	$8.988 \cdot 10^{-13}$	0
cuWRe	$1.858 \cdot 10^{-11}$	$1.858 \cdot 10^{-11}$	0	$2.007 \cdot 10^{-11}$	$2.007 \cdot 10^{-11}$	0
cuu	-2.52	-2.52	0	4.676	4.676	0
cuu1	-2.52	-2.52	0	4.676	4.676	$-6.416 \cdot 10^{-8}$
sm	0	0	0	13.16	13.16	0

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

		square				
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	-0.047	-0.047	0	0.04879	0.04879	0
cHBtil	$1.493 \cdot 10^{-16}$	$1.493 \cdot 10^{-16}$	0	0.04879	0.04879	0
cHDD	-2.483	-2.483	0	0.05391	0.05391	0
cHW	-0.4024	-0.4024	0	1.421	1.421	0
cHWB	-4.426	-4.426	0	0.4156	0.4156	0
cHWBtil	$-2.851 \cdot 10^{-16}$	$-2.808 \cdot 10^{-16}$	0.01486	0.1679	0.1679	0
cHWtil	$-4.763 \cdot 10^{-16}$	$-4.763 \cdot 10^{-16}$	0	1.42	1.42	0

cHl3	-9.532	-9.532	0	0.8207	0.8207	0
cW	-0.02496	-0.02496	0	15.43	15.43	0
cWtil	$-1.623 \cdot 10^{-13}$	$-1.621 \cdot 10^{-13}$	0.0008635	15.43	15.43	0
cll1	6.181	6.181	0	0.2793	0.2793	0
sm	0	0	0	32.36	32.36	0

#### 1.88 $zz \rightarrow zz$

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	0.001826	0.001826	0	0.07345	0.07345	0	
cHBtil	$-4.406 \cdot 10^{-18}$	$-4.406 \cdot 10^{-18}$	0	0.07313	0.07313	0	
cHDD	0.004945	0.004945	0	$7.495 \cdot 10^{-5}$	$7.495 \cdot 10^{-5}$	0	
cHW	0.005986	0.005986	0	0.8125	0.8125	0	
cHWB	0.003308	0.003308	0	0.241	0.241	0	
cHWBtil	$-7.968 \cdot 10^{-18}$	$-7.968 \cdot 10^{-18}$	0	0.24	0.24	0	
cHWtil	$-1.453 \cdot 10^{-17}$	$-1.453 \cdot 10^{-17}$	0	0.7875	0.7875	0	
cH13	-0.01974	-0.01974	0	0.001197	0.001197	0	
cll1	0.009872	0.009872	0	0.0002992	0.0002992	0	
sm	0	0	0	0.08158	0.08158	0	

## 2 By parameter point

#### 2.1 cG

	interference				square		
	mod1	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$			
$gg \to gg$	$-4.715 \cdot 10^{-10}$	$-4.716 \cdot 10^{-10}$	$-1.389 \cdot 10^{-5}$	90.13	90.13	0	
$gg \to ggg$	-0.001904	-0.001904	0	0.01471	0.01471	0	

$gg \to t\bar{t}$	-1.091	-1.091	0	0.4541	0.4541	0
$gg \to u\bar{u}$	$-2.761 \cdot 10^{-10}$	$-2.761 \cdot 10^{-10}$	0	0.2946	0.2946	0

# 2.2 cGtil

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$gg \to gg$	$1.054 \cdot 10^{-15}$	$7.942 \cdot 10^{-16}$	0.2463	90.13	90.13	0	
gg  o ggg	0.002155	0.002155	0	0.01471	0.01471	0	
$gg \to t\bar{t}$	$1.315 \cdot 10^{-17}$	$1.315 \cdot 10^{-17}$	0	0.4541	0.4541	0	
$gg \to u\bar{u}$	$-3.143 \cdot 10^{-27}$	$-3.143 \cdot 10^{-27}$	0	0.2946	0.2946	0	

## 2.3 cH

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
HH  o HH	-0.9367	-0.9367	0	1.833	1.833	0	
$HH \to HHH$	$3.522 \cdot 10^{-6}$	$3.522 \cdot 10^{-6}$	0	$6.941 \cdot 10^{-5}$	$6.941 \cdot 10^{-5}$	0	
$HH  o H  au^+  au^-$	$-2.78 \cdot 10^{-10}$	$-2.78 \cdot 10^{-10}$	0	$5.997 \cdot 10^{-10}$	$5.997 \cdot 10^{-10}$	0	
$HH  o Hbar{b}$	$-4.935 \cdot 10^{-9}$	$-4.935 \cdot 10^{-9}$	0	$2.478 \cdot 10^{-8}$	$2.478 \cdot 10^{-8}$	0	
$HH \to Hs\bar{s}$	$-2.039 \cdot 10^{-12}$	$-2.039 \cdot 10^{-12}$	0	$4.702 \cdot 10^{-12}$	$4.702 \cdot 10^{-12}$	0	
$HH \to H t \bar t$	$3.449 \cdot 10^{-5}$	$3.449 \cdot 10^{-5}$	0	$2.782 \cdot 10^{-5}$	$2.782 \cdot 10^{-5}$	0	
$HH \to Hu\bar{u}$	$-7.418 \cdot 10^{-15}$	$-7.418 \cdot 10^{-15}$	0	$1.869 \cdot 10^{-14}$	$1.869 \cdot 10^{-14}$	0	
$HH \to Hzz$	$-2.444 \cdot 10^{-6}$	$-2.444 \cdot 10^{-6}$	0	$2.085 \cdot 10^{-5}$	$2.085 \cdot 10^{-5}$	0	
$HH  o W^+W^-$	-0.01769	-0.01769	0	0.1331	0.1331	0	
$HH \to W^+W^-\gamma$	$4.737 \cdot 10^{-6}$	$4.737 \cdot 10^{-6}$	0	$1.239 \cdot 10^{-6}$	$1.239 \cdot 10^{-6}$	0	
$HH \to W^+ \bar{t} b$	$3.266 \cdot 10^{-6}$	$3.266 \cdot 10^{-6}$	0	$2.578 \cdot 10^{-6}$	$2.578 \cdot 10^{-6}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$-2.022 \cdot 10^{-9}$	$-2.022 \cdot 10^{-9}$	0	$9.65 \cdot 10^{-10}$	$9.65 \cdot 10^{-10}$	0	
$HH \to W^- u \bar{d}$	$7.013 \cdot 10^{-8}$	$7.013 \cdot 10^{-8}$	0	$4.219 \cdot 10^{-9}$	$4.219 \cdot 10^{-9}$	0	

$HH  o z \bar{b} b$	$6.29 \cdot 10^{-9}$	$6.29 \cdot 10^{-9}$	0	$3.206 \cdot 10^{-10}$	$3.206 \cdot 10^{-10}$	0
$HH \to z \nu_e \bar{\nu}_e$	$5.094 \cdot 10^{-9}$	$5.094 \cdot 10^{-9}$	0	$5.09 \cdot 10^{-10}$	$5.09 \cdot 10^{-10}$	0
$HH \to zc\bar{c}$	$2.981 \cdot 10^{-9}$	$2.981 \cdot 10^{-9}$	0	$1.58 \cdot 10^{-10}$	$1.58 \cdot 10^{-10}$	0
$HH \to z d\bar{d}$	$1.306 \cdot 10^{-8}$	$1.306 \cdot 10^{-8}$	0	$1.186 \cdot 10^{-9}$	$1.186 \cdot 10^{-9}$	0
$HH \rightarrow ze^+e^-$	$5.966 \cdot 10^{-9}$	$5.966 \cdot 10^{-9}$	0	$1.599 \cdot 10^{-10}$	$1.599 \cdot 10^{-10}$	0
$HH \to zt\bar{t}$	$-2.469 \cdot 10^{-6}$	$-2.469 \cdot 10^{-6}$	0	$5.123 \cdot 10^{-7}$	$5.123 \cdot 10^{-7}$	0
$HH \rightarrow zz$	0.1348	0.1348	0	0.06606	0.06606	0
$W^+W^-  o Hb\bar{b}$	$-1.148 \cdot 10^{-10}$	$-1.148 \cdot 10^{-10}$	0	$9.934 \cdot 10^{-11}$	$9.934 \cdot 10^{-11}$	0
$W^+W^- \to H c \bar{c}$	$1.388 \cdot 10^{-11}$	$1.388 \cdot 10^{-11}$	0	$9.966 \cdot 10^{-12}$	$9.966 \cdot 10^{-12}$	0
$W^+W^-  o H d \bar d$	$2.848 \cdot 10^{-17}$	$2.848 \cdot 10^{-17}$	0	$6.437 \cdot 10^{-17}$	$6.437 \cdot 10^{-17}$	0
$W^+W^-  o Ht\bar{t}$	$2.566 \cdot 10^{-7}$	$2.566 \cdot 10^{-7}$	0	$4.049 \cdot 10^{-8}$	$4.049 \cdot 10^{-8}$	0

# 2.4 cHB

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \rightarrow Hzz$	$-2.425 \cdot 10^{-6}$	$-2.425 \cdot 10^{-6}$	0	$8.161 \cdot 10^{-7}$	$8.161 \cdot 10^{-7}$	0	
$HH  o W^+W^-\gamma$	$1.842 \cdot 10^{-5}$	$1.842 \cdot 10^{-5}$	0	$7.721 \cdot 10^{-6}$	$7.721 \cdot 10^{-6}$	0	
HH  o z ar b b	$1.318 \cdot 10^{-7}$	$1.318 \cdot 10^{-7}$	0	$1.882 \cdot 10^{-7}$	$1.882 \cdot 10^{-7}$	0	
$HH  o z \nu_e \bar{\nu}_e$	$1.01\cdot 10^{-7}$	$1.01\cdot 10^{-7}$	0	$5.535 \cdot 10^{-7}$	$5.535 \cdot 10^{-7}$	0	
$HH \to z c \bar{c}$	$2.163 \cdot 10^{-8}$	$2.163 \cdot 10^{-8}$	0	$1.102 \cdot 10^{-7}$	$1.102 \cdot 10^{-7}$	0	
HH  o z d ar d	$2.964 \cdot 10^{-8}$	$2.964 \cdot 10^{-8}$	0	$6.327 \cdot 10^{-8}$	$6.327 \cdot 10^{-8}$	0	
$HH \rightarrow ze^+e^-$	$1.863 \cdot 10^{-8}$	$1.863 \cdot 10^{-8}$	0	$2.718 \cdot 10^{-7}$	$2.718 \cdot 10^{-7}$	0	
$HH  o zt\bar{t}$	$-2.052 \cdot 10^{-6}$	$-2.052 \cdot 10^{-6}$	0	$9.765 \cdot 10^{-7}$	$9.765 \cdot 10^{-7}$	0	
$HH \rightarrow zz$	0.009704	0.009704	0	0.2114	0.2114	0	
$HW^+  o \gamma t \bar{b}$	$-5.866 \cdot 10^{-7}$	$-5.866 \cdot 10^{-7}$	0	$2.47 \cdot 10^{-7}$	$2.47\cdot 10^{-7}$	0	
$HW^+ \to \gamma u \bar{d}$	$6.914 \cdot 10^{-10}$	$6.914 \cdot 10^{-10}$	0	$2.642 \cdot 10^{-8}$	$2.642 \cdot 10^{-8}$	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$1.381 \cdot 10^{-9}$	$1.381 \cdot 10^{-9}$	0	$2.392 \cdot 10^{-8}$	$2.392 \cdot 10^{-8}$	0	
$H\gamma  o b\bar{b}$	$-2.173 \cdot 10^{-5}$	$-2.173 \cdot 10^{-5}$	0	0.009179	0.009179	0	

$H\gamma \to c\bar{c}$	$-8.712 \cdot 10^{-6}$	$-8.712 \cdot 10^{-6}$	0	0.02829	0.02829	0
$H\gamma \to d\bar{d}$	$-9.289 \cdot 10^{-12}$	$-9.289 \cdot 10^{-12}$	0	0.008149	0.008149	0
$H\gamma \to e^+e^-$	$-2.554 \cdot 10^{-13}$	$-2.554 \cdot 10^{-13}$	0	0.01928	0.01928	0
$H\gamma \to t\bar{t}$	-0.02012	-0.02012	0	0.01969	0.01969	0
$Hz \to \mu^+\mu^-$	0.0003232	0.0003232	0	0.003368	0.003368	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.0007227	0.0007227	0	0.0006154	0.0006154	0
$Hz \to b\bar{b}$	0.001524	0.001524	0	0.001928	0.001928	0
$Hz \to s\bar{s}$	0.001334	0.001334	0	0.001618	0.001618	0
$Hz \to t\bar{t}$	-0.01279	-0.01279	0	0.004512	0.004512	0
$Hz \to u\bar{u}$	0.0004386	0.0004386	0	0.003678	0.003678	0
$W^+W^- \to H b \bar b$	$-1.678 \cdot 10^{-8}$	$-1.678 \cdot 10^{-8}$	0	$2.062 \cdot 10^{-10}$	$2.062 \cdot 10^{-10}$	0
$W^+W^-  o Hc\bar{c}$	$5.595 \cdot 10^{-9}$	$5.595 \cdot 10^{-9}$	0	$5.315 \cdot 10^{-10}$	$5.315 \cdot 10^{-10}$	0
$W^+W^- \to H d\bar{d}$	$-9.804 \cdot 10^{-9}$	$-9.804 \cdot 10^{-9}$	0	$1.864 \cdot 10^{-10}$	$1.864 \cdot 10^{-10}$	0
$W^+W^-  o Htar t$	$-1.127 \cdot 10^{-8}$	$-1.127 \cdot 10^{-8}$	0	$6.045 \cdot 10^{-10}$	$6.045 \cdot 10^{-10}$	0
$W^+W^-  o \gamma\gamma$	-0.04424	-0.04424	0	0.2695	0.2695	0
$W^+W^-  o \gamma\gamma\gamma$	$2.851 \cdot 10^{-9}$	$2.851 \cdot 10^{-9}$	0	$1.7 \cdot 10^{-7}$	$1.7\cdot 10^{-7}$	0
$\gamma W^+  o z W^+$	-0.01966	-0.01966	0	0.01114	0.01114	0
$b\bar{b} \to \gamma \gamma$	$-8.015 \cdot 10^{-7}$	$-8.015 \cdot 10^{-7}$	0	$7.062 \cdot 10^{-6}$	$7.062 \cdot 10^{-6}$	0
$zz  o W^+W^-$	-0.047	-0.047	0	0.04879	0.04879	0
$zz \to zz$	0.001826	0.001826	0	0.07345	0.07345	0

## 2.5 cHBtil

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to Hzz$	$1.572 \cdot 10^{-6}$	$1.572 \cdot 10^{-6}$	0	$2.55 \cdot 10^{-7}$	$2.55 \cdot 10^{-7}$	0		
$HH  o W^+W^-\gamma$	$-4.605 \cdot 10^{-7}$	$-4.605 \cdot 10^{-7}$	0	$7.958 \cdot 10^{-7}$	$7.958 \cdot 10^{-7}$	0		
$HH  o z \bar{b} b$	$4.583 \cdot 10^{-6}$	$4.583 \cdot 10^{-6}$	0	$5.83 \cdot 10^{-6}$	$5.83 \cdot 10^{-6}$	0		
$HH \to z \nu_e \bar{\nu}_e$	$-3.726 \cdot 10^{-8}$	$-3.726 \cdot 10^{-8}$	0	$8.946 \cdot 10^{-9}$	$8.946 \cdot 10^{-9}$	0		

$HH \to zc\bar{c}$	$-1.284 \cdot 10^{-7}$	$-1.284 \cdot 10^{-7}$	0	$1.497 \cdot 10^{-6}$	$1.497 \cdot 10^{-6}$	0
$HH \to z d\bar{d}$	$2.855 \cdot 10^{-7}$	$2.855 \cdot 10^{-7}$	0	$6.638 \cdot 10^{-7}$	$6.638 \cdot 10^{-7}$	0
$HH \rightarrow ze^+e^-$	$7.858 \cdot 10^{-8}$	$7.858 \cdot 10^{-8}$	0	$1.611 \cdot 10^{-6}$	$1.611 \cdot 10^{-6}$	0
$HH \to z t \bar{t}$	$-2.317 \cdot 10^{-7}$	$-2.317 \cdot 10^{-7}$	0	$1.69 \cdot 10^{-6}$	$1.69 \cdot 10^{-6}$	0
$HH \rightarrow zz$	$1.065 \cdot 10^{-16}$	$1.065 \cdot 10^{-16}$	0	0.2364	0.2364	0
$HW^+  o \gamma t \bar{b}$	$-5.455 \cdot 10^{-8}$	$-5.455 \cdot 10^{-8}$	0	$1.116 \cdot 10^{-6}$	$1.116 \cdot 10^{-6}$	0
$HW^+ \to \gamma u \bar{d}$	$1.424 \cdot 10^{-9}$	$1.424 \cdot 10^{-9}$	0	$2.367 \cdot 10^{-8}$	$2.367 \cdot 10^{-8}$	0
$HW^-  o \gamma e^- \bar{\nu}_e$	$1.524 \cdot 10^{-9}$	$1.524 \cdot 10^{-9}$	0	$4.847 \cdot 10^{-8}$	$4.847 \cdot 10^{-8}$	0
$H\gamma  o b\bar{b}$	$-4.973 \cdot 10^{-10}$	$-4.973 \cdot 10^{-10}$	0	0.005137	0.005137	0
$H\gamma \to c\bar{c}$	$-6.611 \cdot 10^{-10}$	$-6.611 \cdot 10^{-10}$	0	0.02405	0.02405	0
$H\gamma \to d\bar{d}$	$1.386 \cdot 10^{-15}$	$1.386 \cdot 10^{-15}$	0	0.005518	0.005518	0
$H\gamma \to e^+e^-$	$-1.032 \cdot 10^{-17}$	$-1.032 \cdot 10^{-17}$	0	0.01555	0.01555	0
$H\gamma \to t\bar{t}$	0.0003687	0.0003687	0	0.02963	0.02963	0
$Hz  o \mu^+\mu^-$	$2.648 \cdot 10^{-7}$	$2.648 \cdot 10^{-7}$	0	0.003865	0.003865	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$-1.423 \cdot 10^{-19}$	$-1.423 \cdot 10^{-19}$	0	0.0008995	0.0008995	0
$Hz \to b\bar{b}$	$-3.743 \cdot 10^{-7}$	$-3.743 \cdot 10^{-7}$	0	0.001598	0.001598	0
$Hz \to s\bar{s}$	$-3.112 \cdot 10^{-7}$	$-3.112 \cdot 10^{-7}$	0	0.001409	0.001409	0
$Hz \to t\bar{t}$	$1.426 \cdot 10^{-7}$	$1.426 \cdot 10^{-7}$	0	0.005319	0.005319	0
$Hz \to u\bar{u}$	$-6.235 \cdot 10^{-7}$	$-6.235 \cdot 10^{-7}$	0	0.004747	0.004747	0
$W^+W^-  o Hb\bar{b}$	$1.562 \cdot 10^{-6}$	$1.562 \cdot 10^{-6}$	0	$1.402 \cdot 10^{-8}$	$1.402 \cdot 10^{-8}$	0
$W^+W^-  o Hc\bar{c}$	$3.661 \cdot 10^{-10}$	$3.661 \cdot 10^{-10}$	0	$1.595 \cdot 10^{-9}$	$1.595 \cdot 10^{-9}$	0
$W^+W^- \to H d\bar{d}$	$-1.63 \cdot 10^{-9}$	$-1.63 \cdot 10^{-9}$	0	$9.077 \cdot 10^{-12}$	$9.077 \cdot 10^{-12}$	0
$W^+W^-  o H t \bar t$	$7.142 \cdot 10^{-9}$	$7.142 \cdot 10^{-9}$	0	$7.055 \cdot 10^{-11}$	$7.055 \cdot 10^{-11}$	0
$W^+W^- \to \gamma\gamma$	$2.914 \cdot 10^{-17}$	$2.914 \cdot 10^{-17}$	0	0.2695	0.2695	0
$W^+W^-  o \gamma\gamma\gamma$	$-1.234 \cdot 10^{-8}$	$-1.234 \cdot 10^{-8}$	0	$3.681 \cdot 10^{-7}$	$3.681 \cdot 10^{-7}$	0
$\gamma W^+ \to z W^+$	$3.527 \cdot 10^{-17}$	$3.547 \cdot 10^{-17}$	-0.005661	0.03963	0.03963	0
$b\bar{b} \to \gamma \gamma$	$1.083 \cdot 10^{-23}$	$1.083 \cdot 10^{-23}$	0	$7.062 \cdot 10^{-6}$	$7.062 \cdot 10^{-6}$	0
$zz \to W^+W^-$	$1.493 \cdot 10^{-16}$	$1.493 \cdot 10^{-16}$	0	0.04879	0.04879	0
$zz \to zz$	$-4.406 \cdot 10^{-18}$	$-4.406 \cdot 10^{-18}$	0	0.07313	0.07313	0

# 2.6 cHDD

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
HH  o HH	-0.0822	-0.0822	0	0.013	0.013	0	
$HH \to HHH$	$6.437 \cdot 10^{-7}$	$6.437 \cdot 10^{-7}$	0	$3.919 \cdot 10^{-7}$		0	
$HH  o H  au^+  au^-$	$-1.536 \cdot 10^{-10}$	$-1.536 \cdot 10^{-10}$	0	$3.378 \cdot 10^{-11}$	$3.378 \cdot 10^{-11}$	0	
$HH  o Hbar{b}$	$-8.695 \cdot 10^{-12}$	$-8.695 \cdot 10^{-12}$	0	$8.735 \cdot 10^{-11}$	$8.735 \cdot 10^{-11}$	0	
$HH \to Hs\bar{s}$	$-4.604 \cdot 10^{-14}$		0	$4.091 \cdot 10^{-14}$	$4.091 \cdot 10^{-14}$	0	
$HH \to H t \bar t$	$3.853 \cdot 10^{-6}$	$3.853 \cdot 10^{-6}$	0	$1.475 \cdot 10^{-6}$	$1.475 \cdot 10^{-6}$	0	
$HH \to Hu\bar{u}$	$-7.536 \cdot 10^{-17}$	$-7.536 \cdot 10^{-17}$	0	$4.082 \cdot 10^{-17}$	$4.082 \cdot 10^{-17}$	0	
$HH \rightarrow Hzz$	$2.456 \cdot 10^{-6}$	$2.456 \cdot 10^{-6}$	0	$1.271 \cdot 10^{-6}$	$1.271 \cdot 10^{-6}$	0	
$HH \rightarrow W^+W^-$	-0.4159	-0.4159	0	0.1066	0.1066	0	
$HH \to W^+W^-\gamma$	$-2.634 \cdot 10^{-7}$	$-2.634 \cdot 10^{-7}$	0	$4.533 \cdot 10^{-8}$	$4.533 \cdot 10^{-8}$	0	
$HH \to W^+ \bar{t} b$	-0.0001246	-0.0001246	0	$1.018 \cdot 10^{-5}$	$1.018 \cdot 10^{-5}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$-5.274 \cdot 10^{-8}$	$-5.274 \cdot 10^{-8}$	0	$3.886 \cdot 10^{-9}$	$3.886 \cdot 10^{-9}$	0	
$HH \to W^- u \bar{d}$	$-1.545 \cdot 10^{-7}$	$-1.545 \cdot 10^{-7}$	0	$1.131 \cdot 10^{-8}$	$1.131 \cdot 10^{-8}$	0	
$HH \to z\bar{b}b$	$-1.578 \cdot 10^{-6}$	$-1.578 \cdot 10^{-6}$	0	$9.066 \cdot 10^{-6}$	$9.066 \cdot 10^{-6}$	0	
$HH \to z \nu_e \bar{\nu}_e$	$2.201 \cdot 10^{-9}$	$2.201 \cdot 10^{-9}$	0	$3.596 \cdot 10^{-10}$	$3.596 \cdot 10^{-10}$	0	
$HH \to zc\bar{c}$	$-8.561 \cdot 10^{-7}$	$-8.561 \cdot 10^{-7}$	0	$7.969 \cdot 10^{-8}$	$7.969 \cdot 10^{-8}$	0	
$HH \to z d\bar{d}$	$-3.808 \cdot 10^{-7}$	$-3.808 \cdot 10^{-7}$	0	$1.604 \cdot 10^{-7}$	$1.604 \cdot 10^{-7}$	0	
$HH \rightarrow ze^+e^-$	$-7.374 \cdot 10^{-10}$	$-7.374 \cdot 10^{-10}$	0	$4.877 \cdot 10^{-8}$	$4.877 \cdot 10^{-8}$	0	
$HH \to zt\bar{t}$	$1.39 \cdot 10^{-5}$	$1.39 \cdot 10^{-5}$	0	$3.748 \cdot 10^{-5}$	$3.748 \cdot 10^{-5}$	0	
$HH \rightarrow zz$	-1.182	-1.182	0	0.4168	0.4168	0	
$HW^+  o \gamma t \bar{b}$	$-1.264 \cdot 10^{-7}$	$-1.264 \cdot 10^{-7}$	0	$4.539 \cdot 10^{-9}$	$4.539 \cdot 10^{-9}$	0	
$HW^+  o \gamma u \bar{d}$	$-1.431 \cdot 10^{-9}$	$-1.431 \cdot 10^{-9}$	0	$5.762 \cdot 10^{-11}$	$5.762 \cdot 10^{-11}$	0	
$HW^+ \to u\bar{d}$	-0.003854	-0.003854	0	0.0001552	0.0001552	0	
$HW^- \to \bar{t}b$	-0.5374	-0.5374	0	0.05033	0.05033	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-2.68 \cdot 10^{-9}$	$-2.68 \cdot 10^{-9}$	0	$1.08 \cdot 10^{-10}$	$1.08 \cdot 10^{-10}$	0	
$HW^-  o \mu^- \bar{\nu}_\mu$	-0.0006847	-0.0006847	0	$2.758 \cdot 10^{-5}$	$2.758 \cdot 10^{-5}$	0	

$-2.342 \cdot 10^{-6}$ $-2.342$	$\cdot10^{-6}$ 0	$1.775 \cdot 10^{-8}$	$1.775 \cdot 10^{-8}$ 0
$-1.464 \cdot 10^{-6}$ $-1.464$	$\cdot 10^{-6}$ 0	$1.11 \cdot 10^{-8}$	$1.11 \cdot 10^{-8}$ 0
$-3.17 \cdot 10^{-12}$ $-3.17 \cdot$	$10^{-12}$ 0	$2.403 \cdot 10^{-14}$	$2.403 \cdot 10^{-14} \qquad \qquad 0$
$-1.072 \cdot 10^{-13}$ $-1.072$	$\cdot 10^{-13}$ 0	$8.126 \cdot 10^{-16}$	$8.126 \cdot 10^{-16}$
-0.04433 $-0.04$	1433 0	0.0003359	0.0003359 0
$-1.308 \cdot 10^{-5}$ $-1.308$	$\cdot 10^{-5}$ 0	$4.055 \cdot 10^{-6}$	$4.055 \cdot 10^{-6}$ 0
$-1.642 \cdot 10^{-18}  -1.642$	$\cdot 10^{-18}$ 0	$2.024 \cdot 10^{-34}$	$2.024 \cdot 10^{-34} \qquad 0$
-0.0001112 $-0.000$	01112 0	$1.021 \cdot 10^{-5}$	$1.021 \cdot 10^{-5}$ 0
-0.0001188 $-0.000$	01188	$1.176 \cdot 10^{-6}$	$1.176 \cdot 10^{-6}$ 0
-0.007808 $-0.00$	7808 0	0.0171	0.0171 0
-0.0001299 $-0.000$	01299 0	$4.677 \cdot 10^{-6}$	$4.677 \cdot 10^{-6}$ 0
$-3.4 \cdot 10^{-5}$ $-3.4 \cdot$	$10^{-5}$ 0	$4.167 \cdot 10^{-6}$	$4.167 \cdot 10^{-6}$ 0
$-1.571 \cdot 10^{-6}$ $-1.5$	$71 \cdot 10^{-6}$ 0	$1.36 \cdot 10^{-7}$	$1.36 \cdot 10^{-7}$
$-2.036 \cdot 10^{-7}$ $-2.0$	$36 \cdot 10^{-7}$ 0	$1.774 \cdot 10^{-8}$	$1.774 \cdot 10^{-8}$
$-1.82 \cdot 10^{-6}$ $-1.8$	$82 \cdot 10^{-6}$ 0	$2.982 \cdot 10^{-7}$	$2.982 \cdot 10^{-7}$
-28.85 -	28.85	1.374	1.374
-0.002963 $-0.$	002963 0	$6.458 \cdot 10^{-5}$	$6.458 \cdot 10^{-5}$
-0.01741 $-0$	.01741 0	0.0002476	0.0002476 0
-0.0005618 $-0.0$	0005618 0	$1.629 \cdot 10^{-5}$	$1.629 \cdot 10^{-5}$
$-2.895 \cdot 10^{-6}$ $-2.8$	$95 \cdot 10^{-6}$ 0	$4.388 \cdot 10^{-8}$	$4.388 \cdot 10^{-8}$
-0.000414 $-0.$	000414 0	$6.274 \cdot 10^{-6}$	$6.274 \cdot 10^{-6}$
-0.0001625 $-0.0$	0001625 0	$4.39 \cdot 10^{-6}$	$4.39 \cdot 10^{-6}$
$-2.357 \cdot 10^{-5}$ $-2.3$	$57 \cdot 10^{-5}$ 0	$5.082 \cdot 10^{-7}$	$5.082 \cdot 10^{-7}$
0.01528 $0.0$	01528 0	0.0001097	0.0001097 0
-0.0005993 $-0.0$	0005993 0	$1.261 \cdot 10^{-5}$	$1.261 \cdot 10^{-5}$
-0.06924 $-0$	.06924 0	0.00272	0.00272 0
$5.924 \cdot 10^{-6}$ $5.92$	$4 \cdot 10^{-6}$ 0	$5.752 \cdot 10^{-8}$	$5.752 \cdot 10^{-8}$
-0.0002959 $-0.0$	0002959 0	$6.45 \cdot 10^{-6}$	$6.45 \cdot 10^{-6}$
$6.375 \cdot 10^{-6}$ $6.37$	$5 \cdot 10^{-6}$ 0	$2.9\cdot 10^{-7}$	$2.9 \cdot 10^{-7}$
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

$c\bar{s} \to \tau^+ \nu_{\tau}$	-0.000974	-0.000974	0	$2.123 \cdot 10^{-5}$	$2.123 \cdot 10^{-5}$	0
$d\bar{d} \to c\bar{c}$	-0.0006888	-0.0006888	0	$1.621 \cdot 10^{-5}$	$1.621 \cdot 10^{-5}$	0
$d\bar{d} \to e^+e^-$	$-6.136 \cdot 10^{-5}$	$-6.136 \cdot 10^{-5}$	0	$1.728 \cdot 10^{-6}$	$1.728 \cdot 10^{-6}$	0
$d\bar{d} \to s\bar{s}$	-0.0007958	-0.0007958	0	$1.674 \cdot 10^{-5}$	$1.674 \cdot 10^{-5}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	-0.0003969	-0.0003969	0	$3.271 \cdot 10^{-5}$	$3.271 \cdot 10^{-5}$	0
$e^+\nu_e \to \mu^+\nu_\mu$	-0.0001076	-0.0001076	0	$2.345 \cdot 10^{-6}$	$2.345 \cdot 10^{-6}$	0
$e^+\nu_e \to e^+\nu_e$	-0.004946	-0.004946	0	0.0001563	0.0001563	0
$e^+\tau^- \to e^+\tau^-$	-0.007067	-0.007067	0	0.0004177	0.0004177	0
$e^+e^- \rightarrow \mu^+\mu^-$	-0.0002721	-0.0002721	0	$8.807 \cdot 10^{-6}$	$8.807 \cdot 10^{-6}$	0
$e^+e^- \rightarrow e^+e^-$	0.0005556	0.0005556	0	$4.149 \cdot 10^{-6}$	$4.149 \cdot 10^{-6}$	0
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	-0.0001822	-0.0001822	0	$3.503 \cdot 10^{-6}$	$3.503 \cdot 10^{-6}$	0
$s\bar{s} \to s\bar{s}$	0.004772	0.004772	0	$1.811 \cdot 10^{-5}$	$1.811 \cdot 10^{-5}$	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0002081	-0.0002081	0	$5.354 \cdot 10^{-6}$	$5.354 \cdot 10^{-6}$	0
$t\bar{t} \to \tau^+ \tau^-$	-0.0002564	-0.0002564	0	$6.394 \cdot 10^{-6}$	$6.394 \cdot 10^{-6}$	0
$t\bar{t} \to c\bar{c}$	-0.0003373	-0.0003373	0	$7.923 \cdot 10^{-6}$	$7.923 \cdot 10^{-6}$	0
$t\bar{t} \to d\bar{d}$	$1.372 \cdot 10^{-6}$	$1.372 \cdot 10^{-6}$	0	$2.81 \cdot 10^{-7}$	$2.81 \cdot 10^{-7}$	0
$t\bar{t} \to s\bar{s}$	$-5.983 \cdot 10^{-5}$	$-5.983 \cdot 10^{-5}$	0	$1.659 \cdot 10^{-6}$	$1.659 \cdot 10^{-6}$	0
$t\bar{t} \to t\bar{t}$	0.02029	0.02029	0	0.0009005	0.0009005	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	-0.0002843	-0.0002843	0	$6.198 \cdot 10^{-6}$	$6.198 \cdot 10^{-6}$	0
$u\bar{d} \to c\bar{s}$	-0.0001901	-0.0001901	0	$4.145 \cdot 10^{-6}$	$4.145 \cdot 10^{-6}$	0
$u\bar{d} \to u\bar{d}$	0.0003841	0.0003841	0	$6.923 \cdot 10^{-6}$	$6.923 \cdot 10^{-6}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.0001036	-0.0001036	0	$2.677 \cdot 10^{-6}$	$2.677 \cdot 10^{-6}$	0
$u\bar{u} \to c\bar{c}$	$-7.398 \cdot 10^{-6}$	$-7.398 \cdot 10^{-6}$	0	$4.198 \cdot 10^{-7}$	$4.198 \cdot 10^{-7}$	0
$u\bar{u} \to u\bar{u}$	0.009958	0.009958	0	$6.936 \cdot 10^{-5}$	$6.936 \cdot 10^{-5}$	0
$zz  o W^+W^-$	-2.483	-2.483	0	0.05391	0.05391	0
$zz \to zz$	0.004945	0.004945	0	$7.495 \cdot 10^{-5}$	$7.495 \cdot 10^{-5}$	0

## 2.7 cHG

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$gg \to t\bar{t}$	-0.07951	-0.07951	0	0.04069	0.04069	0	
$gg \to u\bar{u}$	$-4.214 \cdot 10^{-11}$	$-4.214 \cdot 10^{-11}$	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	$1-\mathtt{mod}2/\mathtt{mod}1$		
$gg \to gg$	$9.374 \cdot 10^{-18}$	$9.374 \cdot 10^{-18}$	0	$4.054 \cdot 10^{-34}$	$4.054 \cdot 10^{-34}$	0		
$gg \to ggg$	$-1.33 \cdot 10^{-14}$	$-1.33 \cdot 10^{-14}$	0	$1.518 \cdot 10^{-26}$	$1.518 \cdot 10^{-26}$	0		
$gg \to t\bar{t}$	$-1.648 \cdot 10^{-17}$	$-1.648 \cdot 10^{-17}$	0	0.04069	0.04069	0		
$gg \to u\bar{u}$	$9.215 \cdot 10^{-28}$	$9.215 \cdot 10^{-28}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0		

## 2.9 cHW

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to Hzz$	$-8.796 \cdot 10^{-6}$	$-8.796 \cdot 10^{-6}$	0	$6.002 \cdot 10^{-6}$	$6.002 \cdot 10^{-6}$	0	
$HH \to W^+W^-$	-0.02107	-0.02107	0	7.9	7.9	0	
$HH  o W^+W^-\gamma$	$1.455 \cdot 10^{-6}$	$1.455 \cdot 10^{-6}$	0	0.0001353	0.0001353	0	
$HH \to W^+ \bar{t} b$	$-6.165 \cdot 10^{-6}$	$-6.165 \cdot 10^{-6}$	0	$2.623 \cdot 10^{-5}$	$2.623 \cdot 10^{-5}$	0	
$HH  o W^+ e^- \bar{\nu}_e$	$-4.017 \cdot 10^{-7}$	$-4.017 \cdot 10^{-7}$	0	$1.757 \cdot 10^{-6}$	$1.757 \cdot 10^{-6}$	0	
$HH \to W^- u \bar{d}$	$1.67 \cdot 10^{-6}$	$1.67 \cdot 10^{-6}$	0	$1.615 \cdot 10^{-5}$	$1.615 \cdot 10^{-5}$	0	
$HH \to z\bar{b}b$	$8.004 \cdot 10^{-7}$	$8.004 \cdot 10^{-7}$	0	$5.038 \cdot 10^{-7}$	$5.038 \cdot 10^{-7}$	0	
$HH \to z \nu_e \bar{\nu}_e$	$3.028 \cdot 10^{-7}$	$3.028 \cdot 10^{-7}$	0	$1.997 \cdot 10^{-6}$	$1.997 \cdot 10^{-6}$	0	
$HH \to z c \bar{c}$	$5.05 \cdot 10^{-7}$	$5.05\cdot10^{-7}$	0	$9.283 \cdot 10^{-7}$	$9.283 \cdot 10^{-7}$	0	
$HH \to z d\bar{d}$	$1.444 \cdot 10^{-7}$	$1.444 \cdot 10^{-7}$	0	$3.577 \cdot 10^{-6}$	$3.577 \cdot 10^{-6}$	0	
$HH \rightarrow ze^+e^-$	$-6.999 \cdot 10^{-9}$	$-6.999 \cdot 10^{-9}$	0	$9.839 \cdot 10^{-7}$	$9.839 \cdot 10^{-7}$	0	

HH  o zt ar t	$-5.054 \cdot 10^{-6}$ $-5.054$	$\cdot 10^{-6}$ 0		$3.186 \cdot 10^{-6}$ 3	$.186 \cdot 10^{-6}$	0
$HH \rightarrow zz$	0.03518 0.038			2.296	2.296	0
$HW^+ \to \gamma t \bar{b}$	$-1.741 \cdot 10^{-6}$ $-1.741$				$.017 \cdot 10^{-6}$	0
$HW^+ \rightarrow \gamma u \bar{d}$	$7.81 \cdot 10^{-9}$ $7.81 \cdot$			$6.591 \cdot 10^{-8}$ 6	$.591 \cdot 10^{-8}$	0
$HW^+ \rightarrow u\bar{d}$	0.01191 0.01	191 0		0.05665	0.05665	0
$HW^- \to \bar{t}b$	-0.04024 $-0.04$	1024 0		0.05194	0.05194	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$2.118 \cdot 10^{-8}$ $2.118 \cdot$	$10^{-8}$ 0		$1.026 \cdot 10^{-7}$ 1	$.026 \cdot 10^{-7}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$		.004583	0	0.0218	0.0218	0
$H\gamma  ightarrow bar{b}$	$-8.254 \cdot 10^{-5}$ $-8.$	$254 \cdot 10^{-5}$	0	0.01682	0.01682	0
$H\gamma \to c\bar{c}$	$-7.727 \cdot 10^{-6}$ $-7.$	$727 \cdot 10^{-6}$	0	0.01583	0.01583	0
$H\gamma \to d\bar{d}$	$-3.161 \cdot 10^{-12}$ $-3.1$	$161 \cdot 10^{-12}$	0	0.01046	0.01046	0
$H\gamma \to e^+e^-$	$-1.206 \cdot 10^{-13}$ $-1.206 \cdot 10^{-13}$	$206 \cdot 10^{-13}$	0	0.004115	0.004115	0
$H\gamma \to t\bar{t}$	-0.01591 -	0.01591	0	0.01051	0.01051	0
$Hz \to \mu^+\mu^-$	0.001512 $0.001512$	.001512	0	0.007871	0.007871	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.002535 $0.002535$	.002535	0	0.007082	0.007082	0
$Hz \to b\bar{b}$	0.006205 $0.006205$	.006205	0	0.02061	0.02061	0
$Hz \to s\bar{s}$	0.006239 $0.006239$	.006239	0	0.02062	0.02062	0
$Hz \to t\bar{t}$	-0.06744 -	0.06744	0	0.03175	0.03175	0
$Hz \to u\bar{u}$	0.006442 $0.006442$	.006442	0	0.02604	0.02604	0
$W^+W^- \to H b \bar b$	$-8.391 \cdot 10^{-8}$ $-8.$	$391 \cdot 10^{-8}$	0	$3.235 \cdot 10^{-8}$	$3.235 \cdot 10^{-8}$	0
$W^+W^-  o Hc\bar{c}$		$756 \cdot 10^{-7}$	0	$1.032 \cdot 10^{-7}$	$1.032 \cdot 10^{-7}$	0
$W^+W^- \to H d\bar{d}$	$-9.746 \cdot 10^{-8}$ $-9.$	$746 \cdot 10^{-8}$	0	$2.343 \cdot 10^{-8}$	$3 \cdot 2.343 \cdot 10^{-8}$	0
$W^+W^-  o Htar t$	$1.313 \cdot 10^{-6}$ 1.3	$13 \cdot 10^{-6}$	0	$8.967 \cdot 10^{-6}$	$8.967 \cdot 10^{-6}$	0
$W^+W^- \to W^+W^-$	0.2449	0.2449	0	2.828	2.828	0
$W^+W^-  o \gamma\gamma$	-0.01412 -	0.01412	0	0.02503	0.02503	0
$W^+W^- \to \gamma\gamma\gamma$	$-1.159 \cdot 10^{-8}$ $-1.$	$159 \cdot 10^{-8}$	0	$3.066 \cdot 10^{-8}$	$3.066 \cdot 10^{-8}$	0
$\gamma W^+ \to z W^+$	0.04039	.04039	0	0.04498	0.04498	0
$b\bar{b}  o \gamma \gamma$	$-1.214 \cdot 10^{-7}$ $-1.$	$214 \cdot 10^{-7}$	0	$6.558 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	0
$zz \to W^+W^-$	-0.4024 -	-0.4024	0	1.421	1.421	0

 $zz \to zz$  0.005986 0.005986 0 0.8125 0.8125

#### 2.10 cHWB

	inter		square		
	mod1 mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to Hzz$	$-4.392 \cdot 10^{-6}  -4.392 \cdot 10^{-6}$	$^{-6}$ 0	$2.678 \cdot 10^{-6}$	$2.678 \cdot 10^{-6}$	0
$HH \to W^+W^-$	-8.443 $-8.443$	0	4.772	4.772	0
$HH \to W^+W^-\gamma$	$-9.827 \cdot 10^{-5}$ $-9.827 \cdot 10^{-5}$	$^{-5}$ 0	$8.552 \cdot 10^{-5}$	$8.552 \cdot 10^{-5}$	0
$HH \to W^+ \bar{t} b$	$-2.734 \cdot 10^{-5}$ $-2.734 \cdot 10^{-5}$	$^{-5}$ 0	$2.012 \cdot 10^{-5}$	$2.012 \cdot 10^{-5}$	0
$HH \to W^+ e^- \bar{\nu}_e$	$-9.257 \cdot 10^{-7}$ $-9.257 \cdot 10^{-7}$	$^{-7}$ 0	$1.904 \cdot 10^{-7}$	$1.904 \cdot 10^{-7}$	0
$HH \to W^- u \bar{d}$	$-2.554 \cdot 10^{-6}$ $-2.554 \cdot 10^{-6}$	$^{-6}$ 0	$3.21 \cdot 10^{-7}$	$3.21 \cdot 10^{-7}$	0
$HH \to z\bar{b}b$	$3.681 \cdot 10^{-7}$ $3.681 \cdot 10^{-7}$	7 0	$6.066 \cdot 10^{-7}$	$6.066 \cdot 10^{-7}$	0
$HH \to z \nu_e \bar{\nu}_e$	$1.83 \cdot 10^{-7}$ $1.83 \cdot 10^{-7}$	0	$1.816 \cdot 10^{-6}$	$1.816 \cdot 10^{-6}$	0
$HH \to zc\bar{c}$	$7.434 \cdot 10^{-8}$ $7.434 \cdot 10^{-8}$	0	$1.119 \cdot 10^{-7}$	$1.119 \cdot 10^{-7}$	0
$HH \to z d\bar{d}$	$6.667 \cdot 10^{-8}$ $6.667 \cdot 10^{-8}$	0	$2.024 \cdot 10^{-7}$	$2.024\cdot10^{-7}$	0
$HH \rightarrow ze^+e^-$	$3.856 \cdot 10^{-8}$ $3.856 \cdot 10^{-8}$	0	$1.898 \cdot 10^{-7}$	$1.898 \cdot 10^{-7}$	0
$HH \to zt\bar{t}$	$-4.556 \cdot 10^{-6}$ $-4.556 \cdot 10^{-6}$	$^{-6}$ 0	$9.672 \cdot 10^{-7}$	$9.672 \cdot 10^{-7}$	0
$HH \rightarrow zz$	$0.01758 \qquad 0.01758$	0	0.6936	0.6936	0
$HW^+  o \gamma t \bar{b}$	$-1.441 \cdot 10^{-5}$ $-1.441 \cdot 10^{-5}$	$^{-5}$ 0	$3.013 \cdot 10^{-6}$	$3.013\cdot10^{-6}$	0
$HW^+ \to \gamma u \bar{d}$	$-3.387 \cdot 10^{-7}$ $-3.387 \cdot 10^{-7}$	$^{-7}$ 0	$1.545 \cdot 10^{-6}$	$1.545 \cdot 10^{-6}$	0
$HW^+  o u \bar d$	$-0.005794 \qquad -0.005794$	0	0.0004183	0.0004183	0
$HW^- \to \bar{t}b$	-0.6529 $-0.6529$	0	0.2251	0.2251	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-1.274 \cdot 10^{-8}  -1.274 \cdot 10^{-8}$	$^{-8}$ 0	$5.653 \cdot 10^{-8}$	$5.653 \cdot 10^{-8}$	0
$HW^-  o \mu^- \bar{\nu}_{\mu}$	$-0.002109 \qquad -0.0021$	.09 0	0.0001523	0.0001523	0
$H\gamma  o b\bar{b}$	$6.644 \cdot 10^{-5}$ $6.644 \cdot 10^{-5}$	$0^{-5}$ 0	0.01148	0.01148	0
$H\gamma \to c\bar{c}$	$7.163 \cdot 10^{-6}$ $7.163 \cdot 10^{-6}$	$0^{-6}$ 0	0.017	0.017	0
$H\gamma \to d\bar{d}$	$2.84 \cdot 10^{-11}$ $2.84 \cdot 10^{-11}$	-11 0	0.01019	0.01019	0
$H\gamma \to e^+e^-$	$1.477 \cdot 10^{-13}$ $1.477 \cdot 10^{-13}$	$0^{-13}$ 0	0.006566	0.006566	0

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$H\gamma \to t\bar{t}$	0.01654	0.01654	0	0.01205	0.01205	0
$Hz \to \mu^+\mu^-$	0.0006057	0.0006057	0	0.002473	0.002473	0
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	0.001309	0.001309	0	0.002019	0.002019	0
$Hz  o b ar{b}$	0.00412	0.00412	0	0.006306	0.006306	0
$Hz \to s\bar{s}$	0.00344	0.00344	0	0.005296	0.005296	0
$Hz \to t\bar{t}$	-0.046	-0.046	0	0.007706	0.007706	0
$Hz \to u\bar{u}$	0.00095	0.00095	0	0.003831	0.003831	0
$W^+W^-  o Hb\bar{b}$	$-3.805 \cdot 10^{-6}$	$-3.805 \cdot 10^{-6}$	0	$8.536 \cdot 10^{-7}$	$8.536 \cdot 10^{-7}$	0
$W^+W^- \to H c \bar c$	$-2.902 \cdot 10^{-7}$	$-2.902 \cdot 10^{-7}$	0	$8.186 \cdot 10^{-8}$	$8.186 \cdot 10^{-8}$	0
$W^+W^-  o Hd\bar{d}$	$-8.113 \cdot 10^{-7}$	$-8.113 \cdot 10^{-7}$	0	$1.392 \cdot 10^{-7}$	$1.392 \cdot 10^{-7}$	0
$W^+W^-  o H t \bar t$	$-3.048 \cdot 10^{-5}$	$-3.048 \cdot 10^{-5}$	0	$7.002 \cdot 10^{-6}$	$7.002 \cdot 10^{-6}$	0
$W^+W^- \to W^+W^-$	-10.54	-10.54	0	1.883	1.883	0
$W^+W^- \to \gamma\gamma$	0.02183	0.02183	0	0.1064	0.1064	0
$W^+W^- \to \gamma\gamma\gamma$	$2.516 \cdot 10^{-8}$	$2.516 \cdot 10^{-8}$	0	$1.438 \cdot 10^{-7}$	$1.438 \cdot 10^{-7}$	0
$\bar{b}t \to \bar{d}u$	-0.006402	-0.006402	0	0.0003082	0.0003082	0
$\gamma W^+ \to z W^+$	0.1154	0.1154	0	0.9095	0.9095	0
$\mu^+\mu^- \to \tau^+\tau^-$	-0.0001917	-0.0001917	0	$5.565 \cdot 10^{-5}$	$5.565 \cdot 10^{-5}$	0
$\nu_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$	$1.248 \cdot 10^{-20}$	$1.248 \cdot 10^{-20}$	0	$4.775 \cdot 10^{-38}$	$4.775 \cdot 10^{-38}$	0
$b\bar{b}  o \gamma \gamma$	$4.425 \cdot 10^{-7}$	$4.425 \cdot 10^{-7}$	0	$2.152 \cdot 10^{-6}$	$2.152 \cdot 10^{-6}$	0
$b\bar{b} \to \mu^+\mu^-$	0.0001144	0.0001144	0	$2.544 \cdot 10^{-5}$	$2.544 \cdot 10^{-5}$	0
$b\bar{b}  o  u_e \bar{\nu}_e$	-0.0002759	-0.0002759	0	$5.33 \cdot 10^{-6}$	$5.33 \cdot 10^{-6}$	0
$b\bar{b}  o b\bar{b}$	0.006661	0.006661	0	0.0001227	0.0001227	0
$b\bar{b}  o d\bar{d}$	-0.0007397	-0.0007397	0	$2.901 \cdot 10^{-5}$	$2.901 \cdot 10^{-5}$	0
$b\bar{b}  o t\bar{t}$	-0.008903	-0.008903	0	0.003363	0.003363	0
$b\bar{b} \to u\bar{u}$	-0.0005989	-0.0005989	0	$4.515 \cdot 10^{-5}$	$4.515 \cdot 10^{-5}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	$-8.332 \cdot 10^{-6}$	$-8.332 \cdot 10^{-6}$	0	$4.01 \cdot 10^{-7}$	$4.01 \cdot 10^{-7}$	0
$c\bar{c} \rightarrow \mu^+ \mu^-$	-0.0004528	-0.0004528	0	$6.541 \cdot 10^{-5}$	$6.541 \cdot 10^{-5}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	-0.002312	-0.002312	0	0.0001113	0.0001113	0
$d\bar{d} \to c\bar{c}$	-0.001962	-0.001962	0	0.0001167	0.0001167	0

$d\bar{d} \to e^+e^-$	$-5.105 \cdot 10^{-5}$	$-5.105 \cdot 10^{-5}$	0	$2.038 \cdot 10^{-5}$	$2.038 \cdot 10^{-5}$	0
$d\bar{d} \to s\bar{s}$	-0.0001737	-0.0001737	0	$1.521\cdot10^{-5}$	$1.521\cdot10^{-5}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	0.008916	0.008916	0	0.003863	0.003863	0
$e^+\nu_e \to \mu^+\nu_\mu$	-0.000439	-0.000439	0	$2.113 \cdot 10^{-5}$	$2.113 \cdot 10^{-5}$	0
$e^+\nu_e \to e^+\nu_e$	-0.0008074	-0.0008074	0	0.0009854	0.0009854	0
$e^+\tau^- \to e^+\tau^-$	-0.000261	-0.000261	0	$3.753 \cdot 10^{-6}$	$3.753 \cdot 10^{-6}$	0
$e^+e^- \to \mu^+\mu^-$	-0.0004952	-0.0004952	0	0.0002461	0.0002461	0
$e^+e^- \rightarrow e^+e^-$	-0.2183	-0.2183	0	0.06962	0.06962	0
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$-8.866 \cdot 10^{-5}$	$-8.866 \cdot 10^{-5}$	0	$3.308 \cdot 10^{-6}$	$3.308 \cdot 10^{-6}$	0
$s\bar{s} \to s\bar{s}$	0.02091	0.02091	0	0.0005154	0.0005154	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0001252	-0.0001252	0	$1.558 \cdot 10^{-5}$	$1.558 \cdot 10^{-5}$	0
$t\bar{t} \to \tau^+ \tau^-$	-0.0001099	-0.0001099	0	$1.019 \cdot 10^{-5}$	$1.019 \cdot 10^{-5}$	0
$t\bar{t} \to c\bar{c}$	-0.0002208	-0.0002208	0	$2.265 \cdot 10^{-5}$	$2.265 \cdot 10^{-5}$	0
$t\bar{t} \to d\bar{d}$	-0.001068	-0.001068	0	$6.992 \cdot 10^{-5}$	$6.992 \cdot 10^{-5}$	0
$t\bar{t} \to s\bar{s}$	$6.04 \cdot 10^{-5}$	$6.04 \cdot 10^{-5}$	0	$3.806 \cdot 10^{-5}$	$3.806 \cdot 10^{-5}$	0
$t\bar{t} \to t\bar{t}$	0.009775	0.009775	0	0.0002238	0.0002238	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	-0.0001962	-0.0001962	0	$9.446 \cdot 10^{-6}$	$9.446 \cdot 10^{-6}$	0
$u\bar{d} \to c\bar{s}$	-0.001909	-0.001909	0	$9.191 \cdot 10^{-5}$	$9.191 \cdot 10^{-5}$	0
$u\bar{d} \to u\bar{d}$	0.06277	0.06277	0	0.008817	0.008817	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-8.05 \cdot 10^{-5}$	$-8.05 \cdot 10^{-5}$	0	$1.313 \cdot 10^{-5}$	$1.313 \cdot 10^{-5}$	0
$u\bar{u} \to c\bar{c}$	-0.001125	-0.001125	0	$9.965 \cdot 10^{-5}$	$9.965 \cdot 10^{-5}$	0
$u\bar{u} \to u\bar{u}$	0.00456	0.00456	0	0.0001883	0.0001883	0
$zz  o W^+W^-$	-4.426	-4.426	0	0.4156	0.4156	0
$zz \to zz$	0.003308	0.003308	0	0.241	0.241	0

## 2.11 cHWBtil

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

$HH \rightarrow Hzz$	$2.848 \cdot 10^{-6}$ 2.8	$48 \cdot 10^{-6}$	0	$8.367 \cdot 10^{-7}$	$8.367 \cdot 10^{-7}$	0
$HH  o W^+W^-\gamma$	$1.656 \cdot 10^{-6}$ 1.6	$56 \cdot 10^{-6}$	0	$5.279 \cdot 10^{-5}$	$5.279 \cdot 10^{-5}$	0
$HH \to z\bar{b}b$	$1.063 \cdot 10^{-5}$ 1.0	$63 \cdot 10^{-5}$	0	$2.315 \cdot 10^{-5}$	$2.315 \cdot 10^{-5}$	0
$HH \to z \nu_e \bar{\nu}_e$	$-6.75 \cdot 10^{-8}$ $-6.8$	$.75 \cdot 10^{-8}$	0	$2.936 \cdot 10^{-8}$	$2.936 \cdot 10^{-8}$	0
$HH \to zc\bar{c}$	$-4.716 \cdot 10^{-7}$ $-4.5$	$716 \cdot 10^{-7}$	0	$1.513 \cdot 10^{-6}$	$1.513 \cdot 10^{-6}$	0
$HH \to z d\bar{d}$	$7.656 \cdot 10^{-7}$ $7.6$	$56 \cdot 10^{-7}$	0	$2.241 \cdot 10^{-6}$	$2.241 \cdot 10^{-6}$	0
$HH \rightarrow ze^+e^-$	$1.639 \cdot 10^{-7}$ 1.6	$39 \cdot 10^{-7}$	0	$1.104 \cdot 10^{-6}$	$1.104 \cdot 10^{-6}$	0
$HH \to z t \bar{t}$	$-1.104 \cdot 10^{-7}$ $-1.$	$104\cdot 10^{-7}$	0	$1.203 \cdot 10^{-6}$	$1.203 \cdot 10^{-6}$	0
$HH \rightarrow zz$	$1.908 \cdot 10^{-16}$ 1.90	$08 \cdot 10^{-16}$	0	0.7757	0.7757	0
$HW^+  o \gamma t \bar{b}$	$1.445 \cdot 10^{-7}$ 1.4	$45 \cdot 10^{-7}$	0	$1.422 \cdot 10^{-5}$	$1.422 \cdot 10^{-5}$	0
$HW^+ \to \gamma u \bar{d}$	$-4.696 \cdot 10^{-8}$ $-4.696 \cdot 10^{-8}$	$696 \cdot 10^{-8}$	0	$7.427 \cdot 10^{-7}$	$7.427 \cdot 10^{-7}$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-9.836 \cdot 10^{-8}$ $-9.8$	$836 \cdot 10^{-8}$	0	$1.272 \cdot 10^{-6}$	$1.272 \cdot 10^{-6}$	0
$H\gamma  o b\bar{b}$	$-3.131 \cdot 10^{-10}$ $-3.13$	$131 \cdot 10^{-10}$	0	0.006426	0.006426	0
$H\gamma \to c\bar{c}$	$-4.163 \cdot 10^{-10}$ $-4.1$	$163 \cdot 10^{-10}$	0	0.01445	0.01445	0
$H\gamma \to d\bar{d}$	$8.73 \cdot 10^{-16}$ $8.7$	$3 \cdot 10^{-16}$	0	0.006901	0.006901	0
$H\gamma \to e^+e^-$	$-6.501 \cdot 10^{-18}$ $-6.5$	$501 \cdot 10^{-18}$	0	0.005296	0.005296	0
$H\gamma \to t\bar{t}$	0.0002322 0.0	0002322	0	0.01803	0.01803	0
$Hz \to \mu^+\mu^-$	$1.668 \cdot 10^{-7}$ 1.6	$68 \cdot 10^{-7}$	0	0.002553	0.002553	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$-3.027 \cdot 10^{-19}$ -	$3.027 \cdot 10^{-19}$	0	0.002952	0.002952	0
$Hz \to b\bar{b}$	$-2.299 \cdot 10^{-7}$ -	$2.299 \cdot 10^{-7}$	0	0.005278	0.005278	0
$Hz \to s\bar{s}$	$-1.96 \cdot 10^{-7}$ -	$-1.96 \cdot 10^{-7}$	0	0.004655	0.004655	0
$Hz \to t\bar{t}$	$4 \cdot 10^{-6}$	$4 \cdot 10^{-6}$	0	0.004674	0.004674	0
$Hz \to u\bar{u}$	$-3.926 \cdot 10^{-7}$ -	$3.926 \cdot 10^{-7}$	0	0.004635	0.004635	0
$W^+W^- \to H b \bar b$	$2.038 \cdot 10^{-5}$	$2.038 \cdot 10^{-5}$	0	$1.271\cdot 10^{-}$	$1.271 \cdot 10^{-5}$	0
$W^+W^-  o Hc\bar{c}$	$-5.218 \cdot 10^{-8}$ -	$5.218 \cdot 10^{-8}$	0	$2.419 \cdot 10^{-}$	$2.419 \cdot 10^{-7}$	0
$W^+W^- \to H d\bar{d}$	$-2.716 \cdot 10^{-8}$ -	$2.716 \cdot 10^{-8}$	0	$2.272\cdot 10^{-}$	$2.272 \cdot 10^{-8}$	0
$W^+W^-  o H t \bar t$	$-5.814 \cdot 10^{-8}$ -	$5.814 \cdot 10^{-8}$	0	$1.645\cdot 10^{-}$	$1.645 \cdot 10^{-7}$	0
$W^+W^- \to W^+W^-$	$3.636 \cdot 10^{-15}$ 3	$0.713 \cdot 10^{-15}$	-0.0212	0.05406	0.05406	0
$W^+W^-  o \gamma\gamma$	$8.02 \cdot 10^{-18}$ 8	$0.485 \cdot 10^{-18}$	-0.05795	0.07754	0.07754	0

$W^+W^- \to \gamma\gamma\gamma$	$-8.675 \cdot 10^{-9}$	$-8.675 \cdot 10^{-9}$	0	$1.146 \cdot 10^{-7}$ $1.146 \cdot 10^{-7}$	0
$\gamma W^+ \to z W^+$	$1.328 \cdot 10^{-18}$	$-9.327 \cdot 10^{-18}$	8.024	0.5722   0.5722	0
$b\bar{b}  o \gamma \gamma$	$-5.979 \cdot 10^{-24}$	$-5.979 \cdot 10^{-24}$	0	$2.152 \cdot 10^{-6}$ $2.152 \cdot 10^{-6}$	0
$zz \to W^+W^-$	$-2.851 \cdot 10^{-16}$	$-2.808 \cdot 10^{-16}$	0.01486	$0.1679 \qquad 0.1679$	0
$zz \rightarrow zz$	$-7.968 \cdot 10^{-18}$	$-7.968 \cdot 10^{-18}$	0	0.24 $0.24$	0

## 2.12 cHWtil

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to Hzz$	$5.16 \cdot 10^{-6}$	$5.16 \cdot 10^{-6}$	0	$2.746 \cdot 10^{-6}$	$2.746 \cdot 10^{-6}$	0	
$HH  o W^+W^-$	$-1.176 \cdot 10^{-15}$	$-1.176 \cdot 10^{-15}$	0	7.747	7.747	0	
$HH  o W^+W^-\gamma$	$-7.551 \cdot 10^{-7}$	$-7.551 \cdot 10^{-7}$	0	$9.391 \cdot 10^{-5}$	$9.391 \cdot 10^{-5}$	0	
$HH  o W^+ \bar t b$	$1.934 \cdot 10^{-5}$	$1.934 \cdot 10^{-5}$	0	$1.857 \cdot 10^{-5}$	$1.857 \cdot 10^{-5}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$-4.405 \cdot 10^{-8}$	$-4.405 \cdot 10^{-8}$	0	$1.206 \cdot 10^{-6}$	$1.206 \cdot 10^{-6}$	0	
$HH \to W^- u \bar{d}$	$-6.519 \cdot 10^{-7}$	$-6.519 \cdot 10^{-7}$	0	$9.652 \cdot 10^{-7}$	$9.652 \cdot 10^{-7}$	0	
HH  o z ar b b	$2.348 \cdot 10^{-5}$	$2.348 \cdot 10^{-5}$	0	0.0001127	0.0001127	0	
$HH \to z \nu_e \bar{\nu}_e$	$-1.223 \cdot 10^{-7}$	$-1.223 \cdot 10^{-7}$	0	$9.633 \cdot 10^{-8}$	$9.633 \cdot 10^{-8}$	0	
$HH \to zc\bar{c}$	$-1.287 \cdot 10^{-6}$	$-1.287 \cdot 10^{-6}$	0	$8.815 \cdot 10^{-6}$	$8.815 \cdot 10^{-6}$	0	
$HH \to z d\bar{d}$	$1.837 \cdot 10^{-6}$	$1.837 \cdot 10^{-6}$	0	$1.296 \cdot 10^{-5}$	$1.296 \cdot 10^{-5}$	0	
$HH \rightarrow ze^+e^-$	$3.358 \cdot 10^{-7}$	$3.358 \cdot 10^{-7}$	0	$3.647 \cdot 10^{-6}$	$3.647 \cdot 10^{-6}$	0	
$HH  o zt \bar t$	$3.604 \cdot 10^{-7}$	$3.604 \cdot 10^{-7}$	0	$8.866 \cdot 10^{-6}$	$8.866 \cdot 10^{-6}$	0	
$HH \rightarrow zz$	$3.487 \cdot 10^{-16}$	$3.487 \cdot 10^{-16}$	0	2.546	2.546	0	
$HW^+  o \gamma t \bar{b}$	$4.165 \cdot 10^{-8}$	$4.165 \cdot 10^{-8}$	0	$3.519 \cdot 10^{-6}$	$3.519 \cdot 10^{-6}$	0	
$HW^+ \to \gamma u \bar{d}$	$6.941 \cdot 10^{-9}$	$6.941 \cdot 10^{-9}$	0	$7.396 \cdot 10^{-8}$	$7.396 \cdot 10^{-8}$	0	
$HW^+ \to u\bar{d}$	$-4.304 \cdot 10^{-15}$	$-4.304 \cdot 10^{-15}$	0	0.05171	0.05171	0	
$HW^- \to \bar{t}b$	0.0001386	0.0001386	0	0.07128	0.07128	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$2.077\cdot10^{-8}$	$2.077 \cdot 10^{-8}$	0	$1.922 \cdot 10^{-7}$	$1.922 \cdot 10^{-7}$	0	
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$-3.888 \cdot 10^{-1}$	$-3.888 \cdot 10^{-1}$	0	0.02567	0.02567	0	

$H\gamma  o bar{b}$	$4.973 \cdot 10^{-10}$	$4.973 \cdot 10^{-10}$	0	0.00927	0.00927	0
$H\gamma \to c\bar{c}$	$6.611 \cdot 10^{-10}$	$6.611 \cdot 10^{-10}$	0	0.01286	0.01286	0
$H\gamma \to d\bar{d}$	$-1.386 \cdot 10^{-15}$	$-1.386 \cdot 10^{-15}$	0	0.009957	0.009957	0
$H\gamma \to e^+e^-$	$1.032 \cdot 10^{-17}$	$1.032 \cdot 10^{-17}$	0	0.003134	0.003134	0
$H\gamma \to t\bar{t}$	-0.0003687	-0.0003687	0	0.01534	0.01534	0
$Hz \to \mu^+\mu^-$	$-2.648 \cdot 10^{-7}$	$-2.648 \cdot 10^{-7}$	0	0.008387	0.008387	0
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$-2.891 \cdot 10^{-19}$	$-2.891 \cdot 10^{-19}$	0	0.009686	0.009686	0
$Hz \to b\bar{b}$	$3.955 \cdot 10^{-7}$	$3.955 \cdot 10^{-7}$	0	0.03104	0.03104	0
$Hz \to s\bar{s}$	$3.112 \cdot 10^{-7}$	$3.112 \cdot 10^{-7}$	0	0.02738	0.02738	0
$Hz \to t\bar{t}$	$1.403 \cdot 10^{-5}$	$1.403 \cdot 10^{-5}$	0	0.02946	0.02946	0
$Hz \to u\bar{u}$	$6.235 \cdot 10^{-7}$	$6.235 \cdot 10^{-7}$	0	0.02733	0.02733	0
$W^+W^-  o Hb\bar{b}$	$-1.276 \cdot 10^{-6}$	$-1.276 \cdot 10^{-6}$	0	$1.128 \cdot 10^{-5}$	$1.128 \cdot 10^{-5}$	0
$W^+W^- \to Hc\bar{c}$	$-5.087 \cdot 10^{-8}$	$-5.087 \cdot 10^{-8}$	0	$2.484 \cdot 10^{-7}$	$2.484 \cdot 10^{-7}$	0
$W^+W^- \to H d\bar{d}$	$-2.199 \cdot 10^{-8}$	$-2.199 \cdot 10^{-8}$	0	$9.696 \cdot 10^{-9}$	$9.696 \cdot 10^{-9}$	0
$W^+W^- \to H t \bar t$	$1.535 \cdot 10^{-6}$	$1.535 \cdot 10^{-6}$	0	$1.154 \cdot 10^{-5}$	$1.154 \cdot 10^{-5}$	0
$W^+W^-  o W^+W^-$	$-1.934 \cdot 10^{-15}$	$-1.923 \cdot 10^{-15}$	0.005399	1.834	1.834	0
$W^+W^-  o \gamma\gamma$	$9.081 \cdot 10^{-18}$	$9.081 \cdot 10^{-18}$	0	0.02503	0.02503	0
$W^+W^- \to \gamma\gamma\gamma$	$-3.76 \cdot 10^{-9}$	$-3.76 \cdot 10^{-9}$	0	$3.418 \cdot 10^{-8}$	$3.418 \cdot 10^{-8}$	0
$\gamma W^+  o z W^+$	$-4.112 \cdot 10^{-17}$	$-4.125 \cdot 10^{-17}$	-0.003073	0.03963	0.03963	0
$b\bar{b} \to \gamma \gamma$	$3.3 \cdot 10^{-24}$	$3.3 \cdot 10^{-24}$	0	$6.558 \cdot 10^{-7}$	$6.558 \cdot 10^{-7}$	0
$zz  o W^+W^-$	$-4.763 \cdot 10^{-16}$	$-4.763 \cdot 10^{-16}$	0	1.42	1.42	0
$zz \to zz$	$-1.453 \cdot 10^{-17}$	$-1.453 \cdot 10^{-17}$	0	0.7875	0.7875	0

## 2.13 cHd

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$HH \to z\bar{b}b$	$-2.457 \cdot 10^{-7}$	$-2.457 \cdot 10^{-7}$	0	$1.351 \cdot 10^{-7}$	$1.351 \cdot 10^{-7}$	0	
$HH \rightarrow zd\bar{d}$	$-2.655 \cdot 10^{-7}$	$-2.655 \cdot 10^{-7}$	0	$5.854 \cdot 10^{-7}$	$5.854 \cdot 10^{-7}$	0	

$Hz \to b\bar{b}$	-0.01984	-0.01984	0	0.4936	0.4936	0
$Hz \to s\bar{s}$	-0.02886	-0.02886	0	0.6757	0.6757	0
$W^+W^- \to H b \bar b$	$-2.577 \cdot 10^{-5}$	$-2.577 \cdot 10^{-5}$	0	$6.526 \cdot 10^{-7}$	$6.526 \cdot 10^{-7}$	0
$W^+W^-  o Hd\bar{d}$	$-4.592 \cdot 10^{-8}$	$-4.592 \cdot 10^{-8}$	0	$4.047 \cdot 10^{-7}$	$4.047 \cdot 10^{-7}$	0
$b\bar{b}  o \mu^+\mu^-$	$-6.008 \cdot 10^{-5}$	$-6.008 \cdot 10^{-5}$	0	$3.319 \cdot 10^{-6}$	$3.319 \cdot 10^{-6}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$-6.384 \cdot 10^{-5}$	$-6.384 \cdot 10^{-5}$	0	$1.243 \cdot 10^{-5}$	$1.243 \cdot 10^{-5}$	0
$b\bar{b}  o b\bar{b}$	0.009659	0.009659	0	0.001193	0.001193	0
$b\bar{b}  o d\bar{d}$	$-5.516 \cdot 10^{-5}$	$-5.516 \cdot 10^{-5}$	0	$9.146 \cdot 10^{-6}$	$9.146 \cdot 10^{-6}$	0
$b\bar{b}  o t\bar{t}$	$-9.271 \cdot 10^{-5}$	$-9.271 \cdot 10^{-5}$	0	$5.336 \cdot 10^{-6}$	$5.336 \cdot 10^{-6}$	0
$b\bar{b} \to u\bar{u}$	$7.663 \cdot 10^{-5}$	$7.663 \cdot 10^{-5}$	0	$3.166 \cdot 10^{-5}$	$3.166 \cdot 10^{-5}$	0
$d\bar{d} \to c\bar{c}$	-0.0001084	-0.0001084	0	$5.695 \cdot 10^{-6}$	$5.695 \cdot 10^{-6}$	0
$d\bar{d} \rightarrow e^+e^-$	$-7.292 \cdot 10^{-6}$	$-7.292 \cdot 10^{-6}$	0	$2.994 \cdot 10^{-6}$	$2.994 \cdot 10^{-6}$	0
$d\bar{d} \to s\bar{s}$	$-6.184 \cdot 10^{-5}$	$-6.184 \cdot 10^{-5}$	0	$6.578 \cdot 10^{-6}$	$6.578 \cdot 10^{-6}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-9.197 \cdot 10^{-6}$	$-9.197 \cdot 10^{-6}$	0	$1.79 \cdot 10^{-6}$	$1.79 \cdot 10^{-6}$	0
$s\bar{s} \to s\bar{s}$	0.002485	0.002485	0	0.0004091	0.0004091	0
$t\bar{t}  o d\bar{d}$	$7.854 \cdot 10^{-5}$	$7.854 \cdot 10^{-5}$	0	$2.848 \cdot 10^{-5}$	$2.848 \cdot 10^{-5}$	0
$t\bar{t} \to s\bar{s}$	$4.491 \cdot 10^{-5}$	$4.491\cdot10^{-5}$	0	$1.894 \cdot 10^{-5}$	$1.894 \cdot 10^{-5}$	0
$u\bar{d} \to u\bar{d}$	0.0001219	0.0001219	0	$5.197 \cdot 10^{-5}$	$5.197 \cdot 10^{-5}$	0

## **2.14 cHe**

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$HH \rightarrow z e^+ e^-$	$-4.161 \cdot 10^{-7}$	$-4.161 \cdot 10^{-7}$	0	$1.288 \cdot 10^{-6}$	$1.288 \cdot 10^{-6}$	0		
$Hz \to \mu^+\mu^-$	-0.04016	-0.04016	0	0.3134	0.3134	0		
$\mu^+\mu^- \to \tau^+\tau^-$	0.0001085	0.0001085	0	$2.419 \cdot 10^{-5}$	$2.419 \cdot 10^{-5}$	0		
$b\bar{b}  o \mu^+\mu^-$	$-9.281 \cdot 10^{-5}$	$-9.281 \cdot 10^{-5}$	0	$1.505 \cdot 10^{-5}$	$1.505 \cdot 10^{-5}$	0		
$c\bar{c} \to \mu^+ \mu^-$	-0.0001099	-0.0001099	0	$1.903 \cdot 10^{-6}$	$1.903 \cdot 10^{-6}$	0		
$d\bar{d} \rightarrow e^+e^-$	$-4.587 \cdot 10^{-5}$	$-4.587 \cdot 10^{-5}$	0	$6.691 \cdot 10^{-6}$	$6.691 \cdot 10^{-6}$	0		

$e^+\nu_\mu \to e^+\nu_\mu$	-0.0152	-0.0152	0	$0.0009866 \qquad 0.0009866$	0
$e^+\nu_e^- \rightarrow e^+\nu_e^-$	-0.00351	-0.00351	0	$0.0002278 \qquad 0.0002278$	0
$e^+\tau^- \to e^+\tau^-$	0.0013	0.0013	0	$4.509 \cdot 10^{-5}$ $4.509 \cdot 10^{-5}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	-0.001357	-0.001357	0	$4.353 \cdot 10^{-5}$ $4.353 \cdot 10^{-5}$	0
$e^+e^- \rightarrow e^+e^-$	-0.08956	-0.08956	0	$0.02184 \qquad 0.02184$	0
$t\bar{t} \to \tau^+ \tau^-$	$4.61 \cdot 10^{-5}$	$4.61 \cdot 10^{-5}$	0	$6.517 \cdot 10^{-6}$ $6.517 \cdot 10^{-6}$	0

## 2.15 cHl1

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to z \nu_e \bar{\nu}_e$	$-4.332 \cdot 10^{-7}$	$-4.332 \cdot 10^{-7}$	0	$1.522 \cdot 10^{-7}$	$1.522 \cdot 10^{-7}$	0	
$HH \rightarrow ze^+e^-$	$4.748 \cdot 10^{-7}$	$4.748 \cdot 10^{-7}$	0	$1.288 \cdot 10^{-6}$	$1.288 \cdot 10^{-6}$	0	
$Hz  o \mu^+\mu^-$	0.04581	0.04581	0	0.3134	0.3134	0	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	-0.09602	-0.09602	0	0.35	0.35	0	
$\mu^+\mu^- \to \tau^+\tau^-$	$1.222 \cdot 10^{-5}$	$1.222 \cdot 10^{-5}$	0	$2.365 \cdot 10^{-5}$	$2.365 \cdot 10^{-5}$	0	
$ u_{ au}\bar{ u}_{ au}  ightarrow  u_{ au}\bar{ u}_{ au}$	$-5.05 \cdot 10^{-5}$	$-5.05 \cdot 10^{-5}$	0	$3.061 \cdot 10^{-6}$	$3.061 \cdot 10^{-6}$	0	
$\nu_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$		-0.0001977	0	$1.198 \cdot 10^{-5}$	$1.198 \cdot 10^{-5}$	0	
$b\bar{b} \rightarrow \mu^+ \mu^-$	$-1.551 \cdot 10^{-5}$	$-1.551 \cdot 10^{-5}$	0	$5.551 \cdot 10^{-7}$	$5.551 \cdot 10^{-7}$	0	
$b\bar{b} \to \nu_e \bar{\nu}_e$	-0.0004414	-0.0004414	0	$1.338 \cdot 10^{-5}$	$1.338 \cdot 10^{-5}$	0	
$c\bar{c} \to \mu^+ \mu^-$	0.000333	0.000333	0	$8.346 \cdot 10^{-6}$	$8.346 \cdot 10^{-6}$	0	
$d\bar{d} \rightarrow e^+e^-$	$5.43 \cdot 10^{-5}$	$5.43 \cdot 10^{-5}$	0	$2.522 \cdot 10^{-6}$	$2.522 \cdot 10^{-6}$	0	
$e^+\nu_\mu \to e^+\nu_\mu$	-0.002623	-0.002623	0	0.0003343	0.0003343	0	
$e^+\nu_e \to e^+\nu_e$	-0.0006244	-0.0006244	0	$6.01 \cdot 10^{-5}$	$6.01 \cdot 10^{-5}$	0	
$e^+\tau^- \to e^+\tau^-$	-0.001135	-0.001135	0	$3.483 \cdot 10^{-5}$	$3.483 \cdot 10^{-5}$	0	
$e^+e^- \rightarrow \mu^+\mu^-$	0.001669	0.001669	0	$5.604 \cdot 10^{-5}$	$5.604 \cdot 10^{-5}$	0	
$e^+e^- \rightarrow e^+e^-$	0.227	0.227	0	0.02314	0.02314	0	
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	-0.0001665	-0.0001665	0	$5.048 \cdot 10^{-6}$	$5.048 \cdot 10^{-6}$	0	
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0001199	-0.0001199	0	$3.633 \cdot 10^{-6}$	$3.633 \cdot 10^{-6}$	0	

$t\bar{t} \to \tau^+ \tau^-$	$-1.475 \cdot 10^{-5}  -1.475 \cdot 10^{-5}$	0	$1.823 \cdot 10^{-6}$ $1.823 \cdot 10^{-6}$ 0
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.0001116  -0.0001116	0	$3.382 \cdot 10^{-6}  3.382 \cdot 10^{-6}$

# 2.16 cHl3

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
HH  o HH	-0.02902	-0.02902	0	0.001759	0.001759	0	
$HH \to HHH$	$-1.625 \cdot 10^{-8}$	$-1.625 \cdot 10^{-8}$	0	$1.478 \cdot 10^{-9}$	$1.478 \cdot 10^{-9}$	0	
$HH \to H \tau^+ \tau^-$	$-1.173 \cdot 10^{-11}$	$-1.173 \cdot 10^{-11}$	0	$1.067 \cdot 10^{-12}$	$1.067 \cdot 10^{-12}$	0	
$HH  o Hbar{b}$	$-9.016 \cdot 10^{-11}$	$-9.016 \cdot 10^{-11}$	0	$8.199 \cdot 10^{-12}$	$8.199 \cdot 10^{-12}$	0	
$HH \to H s \bar{s}$	$-8.041 \cdot 10^{-14}$	$-8.041 \cdot 10^{-14}$	0	$7.312 \cdot 10^{-15}$	$7.312 \cdot 10^{-15}$	0	
$HH \to H t \bar t$	$-1.496 \cdot 10^{-5}$	$-1.496 \cdot 10^{-5}$	0	$1.361 \cdot 10^{-6}$	$1.361 \cdot 10^{-6}$	0	
$HH \to Hu\bar{u}$	$-2.677 \cdot 10^{-16}$	$-2.677 \cdot 10^{-16}$	0	$2.435 \cdot 10^{-17}$	$2.435 \cdot 10^{-17}$	0	
$HH \to Hzz$	$-3.807 \cdot 10^{-6}$	$-3.807 \cdot 10^{-6}$	0	$3.462 \cdot 10^{-7}$	$3.462 \cdot 10^{-7}$	0	
$HH  o W^+W^-$	-2.209	-2.209	0	1.369	1.369	0	
$HH \to W^+W^-\gamma$	$-4.245 \cdot 10^{-5}$	$-4.245 \cdot 10^{-5}$	0	$1.71 \cdot 10^{-5}$	$1.71 \cdot 10^{-5}$	0	
$HH  o W^+ \bar{t} b$	$-4.093 \cdot 10^{-5}$	$-4.093 \cdot 10^{-5}$	0	$2.179 \cdot 10^{-5}$	$2.179 \cdot 10^{-5}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$1.785 \cdot 10^{-7}$	$1.785 \cdot 10^{-7}$	0	$2.244 \cdot 10^{-7}$	$2.244 \cdot 10^{-7}$	0	
$HH \to W^- u \bar{d}$	$-9.643 \cdot 10^{-7}$	$-9.643 \cdot 10^{-7}$	0	$2.169 \cdot 10^{-7}$	$2.169 \cdot 10^{-7}$	0	
$HH \to z\bar{b}b$	$-3.735 \cdot 10^{-7}$	$-3.735 \cdot 10^{-7}$	0	$3.999 \cdot 10^{-8}$	$3.999 \cdot 10^{-8}$	0	
$HH \to z \nu_e \bar{\nu}_e$	$4.991 \cdot 10^{-7}$	$4.991 \cdot 10^{-7}$	0	$3.361 \cdot 10^{-7}$	$3.361 \cdot 10^{-7}$	0	
$HH \to z c \bar{c}$	$-1.403 \cdot 10^{-7}$	$-1.403 \cdot 10^{-7}$	0	$1.82 \cdot 10^{-8}$	$1.82 \cdot 10^{-8}$	0	
$HH \to z d\bar{d}$	$-1.066 \cdot 10^{-7}$	$-1.066 \cdot 10^{-7}$	0	$1.139 \cdot 10^{-8}$	$1.139 \cdot 10^{-8}$	0	
$HH \rightarrow ze^+e^-$	$6.79 \cdot 10^{-7}$	$6.79 \cdot 10^{-7}$	0	$1.619 \cdot 10^{-6}$	$1.619 \cdot 10^{-6}$	0	
$HH \to z t \bar{t}$	$-4.243 \cdot 10^{-6}$	$-4.243 \cdot 10^{-6}$	0	$4.136 \cdot 10^{-7}$	$4.136 \cdot 10^{-7}$	0	
$HH \rightarrow zz$	-0.0353	-0.0353	0	0.00214	0.00214	0	
$HW^+  o \gamma t \bar{b}$	$-1.763 \cdot 10^{-6}$	$-1.763 \cdot 10^{-6}$	0	$1.721 \cdot 10^{-7}$	$1.721 \cdot 10^{-7}$	0	
$HW^+ \to \gamma u \bar{d}$	$-2.016 \cdot 10^{-8}$	$-2.016 \cdot 10^{-8}$	0	$2.026 \cdot 10^{-9}$	$2.026 \cdot 10^{-9}$	0	

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$HW^+ \to u\bar{d}$	-0.008821	-0.008821	0	0.0008864	0.0008864	0
$HW^-  o \bar{t}b$	-0.5421	-0.5421	0	0.1122	0.1122	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$7.31 \cdot 10^{-8}$	$7.31 \cdot 10^{-8}$	0	$2.574 \cdot 10^{-7}$	$2.574 \cdot 10^{-7}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$	0.112	0.112	0	0.5218	0.5218	0
$H\gamma  o b ar{b}$	$-6.385 \cdot 10^{-5}$	$-6.385 \cdot 10^{-5}$	0	$1.935 \cdot 10^{-6}$	$1.935 \cdot 10^{-6}$	0
$H\gamma \to c\bar{c}$	$-1.365 \cdot 10^{-5}$	$-1.365 \cdot 10^{-5}$	0	$4.137 \cdot 10^{-7}$	$4.137 \cdot 10^{-7}$	0
$H\gamma \to d\bar{d}$	$-1.352 \cdot 10^{-11}$ -	$-1.352 \cdot 10^{-11}$	0	$4.098 \cdot 10^{-13}$	$1.098 \cdot 10^{-13}$	0
$H\gamma \to e^+e^-$	$-6.514 \cdot 10^{-13}$ -	$-6.514 \cdot 10^{-13}$	0	$1.974 \cdot 10^{-14}$	$1.974 \cdot 10^{-14}$	0
$H\gamma \to t\bar{t}$	-0.05945	-0.05945	0	0.001802	0.001802	0
$Hz \to \mu^+\mu^-$	0.04101	0.04101	0	0.2741	0.2741	0
$Hz  o  u_{ au} \bar{ u}_{ au}$	0.08834	0.08834	0	0.3167	0.3167	0
$Hz \to b\bar{b}$	-0.004105	-0.004105	0	0.0003213	0.0003213	0
$Hz \to s\bar{s}$	-0.004111	-0.004111	0	0.0003204	0.0003204	0
$Hz \to t\bar{t}$	-0.673	-0.673	0	0.04611	0.04611	0
$Hz \to u\bar{u}$	-0.002494	-0.002494	0	0.0002676	0.0002676	0
$W^+W^-  o Hb\bar{b}$	$-1.602 \cdot 10^{-6}$	$-1.602 \cdot 10^{-6}$	0	$3.372 \cdot 10^{-7}$	$3.372 \cdot 10^{-7}$	0
$W^+W^-  o Hc\bar{c}$	$-9.075 \cdot 10^{-7}$	$-9.075 \cdot 10^{-7}$	0	$1.533 \cdot 10^{-7}$	$1.533 \cdot 10^{-7}$	0
$W^+W^- \to H d\bar{d}$	$-4.141 \cdot 10^{-7}$	$-4.141 \cdot 10^{-7}$	0	$7.163 \cdot 10^{-8}$	$7.163 \cdot 10^{-8}$	0
$W^+W^-  o H t \bar t$	$-7.333 \cdot 10^{-6}$	$-7.333 \cdot 10^{-6}$	0	$1.594 \cdot 10^{-6}$	$1.594 \cdot 10^{-6}$	0
$W^+W^- \rightarrow W^+W^-$	-2.582	-2.582	0	0.3676	0.3676	0
$\bar{b}t \to \bar{d}u$	-0.004807	-0.004807	0	0.0004191	0.0004191	0
$\gamma W^+ \to z W^+$	-0.07332	-0.07332	0	0.004171	0.004171	0
$\mu^+\mu^- \rightarrow \tau^+\tau^-$	$-9.961 \cdot 10^{-5}$	$-9.961 \cdot 10^{-5}$	0	$1.327 \cdot 10^{-5}$	$1.327 \cdot 10^{-5}$	0
$ u_{\tau}\bar{\nu}_{\tau} \to \nu_{\tau}\bar{\nu}_{\tau} $	$1.573 \cdot 10^{-20}$	$1.573 \cdot 10^{-20}$	0	$7.641 \cdot 10^{-37}$	$7.641 \cdot 10^{-37}$	0
$ u_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$	$1.596 \cdot 10^{-19}$	$1.596 \cdot 10^{-19}$	0	$1.881 \cdot 10^{-36}$	$1.881 \cdot 10^{-36}$	0
$b\bar{b} \rightarrow \mu^+\mu^-$	$-1.574 \cdot 10^{-6}$	$-1.574 \cdot 10^{-6}$	0	$1.218 \cdot 10^{-6}$	$1.218 \cdot 10^{-6}$	0
$b\bar{b}  o \nu_e \bar{\nu}_e$	$-2.08 \cdot 10^{-5}$	$-2.08 \cdot 10^{-5}$	0	$3.157 \cdot 10^{-6}$	$3.157 \cdot 10^{-6}$	0
$bar{b}  o bar{ar{b}}$	0.1046	0.1046	0	0.006446	0.006446	0
$b\bar{b}  o d\bar{d}$	$-6.72 \cdot 10^{-5}$	$-6.72 \cdot 10^{-5}$	0	$6.566 \cdot 10^{-6}$	$6.566 \cdot 10^{-6}$	0

b ar b  o t ar t	0.002247	0.002247	0	0.009266	0.009266	0
$b\bar{b} \to u\bar{u}$	$5.59 \cdot 10^{-6}$	$5.59 \cdot 10^{-6}$	0	$2.344 \cdot 10^{-6}$	$2.344 \cdot 10^{-6}$	0
$b\bar{t} \to e^-\bar{\nu}_e$	-0.0003055	-0.0003055	0	$1.738 \cdot 10^{-5}$	$1.738 \cdot 10^{-5}$	0
$c\bar{c} \to \mu^+ \mu^-$	$1.343 \cdot 10^{-6}$	$1.343 \cdot 10^{-6}$	0	$7.669 \cdot 10^{-7}$	$7.669 \cdot 10^{-7}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	-0.0022	-0.0022	0	0.0001252	0.0001252	0
$d\bar{d} \to c\bar{c}$	-0.002735	-0.002735	0	0.0002574	0.0002574	0
$d\bar{d} \to e^+e^-$	-0.0005002	-0.0005002	0	$3.582 \cdot 10^{-5}$	$3.582 \cdot 10^{-5}$	0
$d\bar{d} \to s\bar{s}$	-0.0004967	-0.0004967	0	$4.23 \cdot 10^{-5}$	$4.23 \cdot 10^{-5}$	0
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	-0.3101	-0.3101	0	0.2984	0.2984	0
$e^+\nu_e \to \mu^+\nu_\mu$	-0.001363	-0.001363	0	$3.623 \cdot 10^{-5}$	$3.623 \cdot 10^{-5}$	0
$e^+\nu_e \to e^+\nu_e$	-0.006389	-0.006389	0	0.001334	0.001334	0
$e^+\tau^- \to e^+\tau^-$	-0.0009182	-0.0009182	0	0.0001142	0.0001142	0
$e^+e^- \to \mu^+\mu^-$	-0.0001197	-0.0001197	0	$2.356 \cdot 10^{-5}$	$2.356 \cdot 10^{-5}$	0
$e^+e^- \rightarrow e^+e^-$	-0.003158	-0.003158	0	0.0003997	0.0003997	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	-0.0007343	-0.0007343	0	$3.408 \cdot 10^{-5}$	$3.408 \cdot 10^{-5}$	0
$s\bar{s} \to s\bar{s}$	0.1049	0.1049	0	0.006639	0.006639	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.000784	-0.000784	0	$5.62\cdot10^{-5}$	$5.62 \cdot 10^{-5}$	0
$t\bar{t} \to \tau^+ \tau^-$	-0.0005851	-0.0005851	0	$4.783 \cdot 10^{-5}$	$4.783 \cdot 10^{-5}$	0
$t\bar{t} \to c\bar{c}$	-0.00134	-0.00134	0	0.0001259	0.0001259	0
$t\bar{t} \to d\bar{d}$	-0.0003973	-0.0003973	0	$4.107 \cdot 10^{-5}$	$4.107 \cdot 10^{-5}$	0
$t\bar{t} \to s\bar{s}$	-0.001685	-0.001685	0	0.0001611	0.0001611	0
$t\bar{t} \to t\bar{t}$	0.1073	0.1073	0	0.01467	0.01467	0
$u\bar{d} \to \mu^+ \nu_\mu$	-0.0009393	-0.0009393	0	$5.343 \cdot 10^{-5}$	$5.343 \cdot 10^{-5}$	0
$u\bar{d} \to c\bar{s}$	-0.006392	-0.006392	0	0.0005573	0.0005573	0
$u\bar{d} \to u\bar{d}$	0.006439	0.006439	0	0.0004193	0.0004193	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.0007842	-0.0007842	0	$5.472 \cdot 10^{-5}$	$5.472 \cdot 10^{-5}$	0
$u\bar{u} \to c\bar{c}$	-0.0002234	-0.0002234	0	$2.391 \cdot 10^{-5}$	$2.391 \cdot 10^{-5}$	0
$u\bar{u} \to u\bar{u}$	0.0001541	0.0001541	0	$3.165 \cdot 10^{-6}$	$3.165 \cdot 10^{-6}$	0
$zz  o W^+W^-$	-9.532	-9.532	0	0.8207	0.8207	0

## 2.17 cHq1

		interfer	rence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to z\bar{b}b$	$1.532 \cdot 10^{-6}$	$1.532 \cdot 10^{-6}$	0	$1.698 \cdot 10^{-6}$	$1.698 \cdot 10^{-6}$	0
$HH \to zc\bar{c}$	$-4.385 \cdot 10^{-6}$	$-4.385 \cdot 10^{-6}$	0	$1.395 \cdot 10^{-5}$	$1.395 \cdot 10^{-5}$	0
$HH \to z d\bar{d}$	$7.573 \cdot 10^{-6}$	$7.573 \cdot 10^{-6}$	0	$1.408 \cdot 10^{-5}$	$1.408 \cdot 10^{-5}$	0
$HH \to zt\bar{t}$	$2.061 \cdot 10^{-5}$	$2.061 \cdot 10^{-5}$	0	$2.625 \cdot 10^{-5}$	$2.625 \cdot 10^{-5}$	0
$Hz  o b ar{b}$	0.03909	0.03909	0	0.1751	0.1751	0
$Hz \to s\bar{s}$	0.1099	0.1099	0	0.4745	0.4745	0
$Hz \to t\bar{t}$	2.088	2.088	0	1.496	1.496	0
$Hz \to u\bar{u}$	-0.1852	-0.1852	0	0.9805	0.9805	0
$W^+W^-  o Hb\bar{b}$	$1.667 \cdot 10^{-6}$	$1.667 \cdot 10^{-6}$	0	$4.224 \cdot 10^{-7}$	$4.224 \cdot 10^{-7}$	0
$W^+W^- \to Hc\bar{c}$	$-2.58 \cdot 10^{-7}$	$-2.58 \cdot 10^{-7}$	0	$3.528 \cdot 10^{-7}$	$3.528 \cdot 10^{-7}$	0
$W^+W^-  o Hd\bar{d}$	$4.967 \cdot 10^{-7}$	$4.967 \cdot 10^{-7}$	0	$2.565 \cdot 10^{-7}$	$2.565 \cdot 10^{-7}$	0
$W^+W^- \to H t \bar t$	$-9.058 \cdot 10^{-7}$	$-9.058 \cdot 10^{-7}$	0	$9.654 \cdot 10^{-7}$	$9.654 \cdot 10^{-7}$	0
$b\bar{b}  o \mu^+\mu^-$	$5.203 \cdot 10^{-5}$	$5.203 \cdot 10^{-5}$	0	$4.624 \cdot 10^{-6}$	$4.624 \cdot 10^{-6}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	0.0005226	0.0005226	0	$1.876 \cdot 10^{-5}$	$1.876 \cdot 10^{-5}$	0
b ar b  o b ar b	-0.01511	-0.01511	0	0.0001812	0.0001812	0
$b\bar{b}  o d\bar{d}$	0.001453	0.001453	0	$9.402 \cdot 10^{-5}$	$9.402 \cdot 10^{-5}$	0
$b\bar{b}  o t\bar{t}$	-0.0006754	-0.0006754	0	$4.702 \cdot 10^{-6}$	$4.702 \cdot 10^{-6}$	0
$b\bar{b} \to u\bar{u}$	$-6.575 \cdot 10^{-5}$	$-6.575 \cdot 10^{-5}$	0	$2.181 \cdot 10^{-6}$	$2.181 \cdot 10^{-6}$	0
$c\bar{c} \rightarrow \mu^+\mu^-$	-0.0002577	-0.0002577	0	$5.067 \cdot 10^{-6}$	$5.067 \cdot 10^{-6}$	0
$d\bar{d} \to c\bar{c}$	-0.0002619	-0.0002619	0	$1.673 \cdot 10^{-6}$	$1.673 \cdot 10^{-6}$	0
$d\bar{d} \rightarrow e^+e^-$	$6.144 \cdot 10^{-5}$	$6.144 \cdot 10^{-5}$	0		$2.939 \cdot 10^{-6}$	0
$d\bar{d} \to s\bar{s}$	0.0004217	0.0004217	0	$2.765 \cdot 10^{-5}$	$2.765 \cdot 10^{-5}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.0001926	0.0001926	0	$6.915 \cdot 10^{-6}$	$6.915 \cdot 10^{-6}$	0

$s\bar{s} \to s\bar{s}$	-0.04896	-0.04896	0	0.001078	0.001078	0
$t\bar{t}  ightarrow  u_{\mu} \bar{ u}_{\mu}$	-0.0001567	-0.0001567	0	$7.214 \cdot 10^{-6}$	$7.214 \cdot 10^{-6}$	0
$t\bar{t} \to \tau^+ \tau^-$	$1.169 \cdot 10^{-5}$	$1.169 \cdot 10^{-5}$	0	$3.525 \cdot 10^{-6}$	$3.525 \cdot 10^{-6}$	0
$t\bar{t} \to c\bar{c}$	0.0001252	0.0001252	0	$1.153 \cdot 10^{-5}$	$1.153 \cdot 10^{-5}$	0
$t\bar{t}  o d\bar{d}$	-0.0001444	-0.0001444	0	$1.89 \cdot 10^{-6}$	$1.89 \cdot 10^{-6}$	0
$t\bar{t} \to s\bar{s}$	$5.891 \cdot 10^{-5}$	$5.891 \cdot 10^{-5}$	0	$7.116 \cdot 10^{-6}$	$7.116 \cdot 10^{-6}$	0
$t\bar{t} \to t\bar{t}$	0.07733	0.07733	0	0.008739	0.008739	0
$u\bar{d} \to u\bar{d}$	-0.008015	-0.008015	0	0.000571	0.000571	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.0001353	-0.0001353	0	$5.954 \cdot 10^{-6}$	$5.954 \cdot 10^{-6}$	0
$u\bar{u} \to c\bar{c}$	-0.001365	-0.001365	0	$7.361 \cdot 10^{-5}$	$7.361 \cdot 10^{-5}$	0
$u\bar{u} \to u\bar{u}$	0.01022	0.01022	0	0.0001291	0.0001291	0

# 2.18 cHq3

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o W^+ \bar t b$	$7.356 \cdot 10^{-6}$	$7.356 \cdot 10^{-6}$	0	$1.024 \cdot 10^{-5}$	$1.024 \cdot 10^{-5}$	0	
$HH  o W^- u \bar{d}$	$3.334 \cdot 10^{-6}$	$3.334 \cdot 10^{-6}$	0	$3.273 \cdot 10^{-6}$	$3.273 \cdot 10^{-6}$	0	
$HH  o z \bar b b$	$1.008 \cdot 10^{-5}$	$1.008 \cdot 10^{-5}$	0	$2.92 \cdot 10^{-5}$	$2.92 \cdot 10^{-5}$	0	
$HH \to z c \bar{c}$	$2.955 \cdot 10^{-6}$	$2.955 \cdot 10^{-6}$	0	$8.168 \cdot 10^{-6}$	$8.168 \cdot 10^{-6}$	0	
$HH \to z d\bar{d}$	$1.261 \cdot 10^{-6}$	$1.261 \cdot 10^{-6}$	0	$1.599 \cdot 10^{-6}$	$1.599 \cdot 10^{-6}$	0	
$HH \to z t \bar{t}$	$-2.266 \cdot 10^{-5}$	$-2.266 \cdot 10^{-5}$	0	$3.51\cdot 10^{-5}$	$3.51\cdot10^{-5}$	0	
$HW^+ \to \gamma t \bar{b}$	$-8.987 \cdot 10^{-8}$	$-8.987 \cdot 10^{-8}$	0	$3.976 \cdot 10^{-8}$	$3.976 \cdot 10^{-8}$	0	
$HW^+  o \gamma u \bar{d}$	$9.65 \cdot 10^{-7}$	$9.65 \cdot 10^{-7}$	0	$4.955 \cdot 10^{-6}$	$4.955 \cdot 10^{-6}$	0	
$HW^+ \to u\bar{d}$	0.3965	0.3965	0	1.886	1.886	0	
$HW^-  o \bar{t}b$	-1.712	-1.712	0	1.92	1.92	0	
$Hz \to b\bar{b}$	0.233	0.233	0	1.011	1.011	0	
$Hz \to s\bar{s}$	0.2341	0.2341	0	1.011	1.011	0	
$Hz \to t\bar{t}$	-2.077	-2.077	0	1.061	1.061	0	

$Hz \to u\bar{u}$	0.1395	0.1395	0	0.7386	0.7386	0
$W^+W^-  o Hb\bar b$	$-1.566 \cdot 10^{-6}$	$-1.566 \cdot 10^{-6}$	0	$1.236 \cdot 10^{-6}$	$1.236 \cdot 10^{-6}$	0
$W^+W^- \to H c \bar c$	$-1.361 \cdot 10^{-7}$	$-1.361 \cdot 10^{-7}$	0	$1.496 \cdot 10^{-6}$	$1.496 \cdot 10^{-6}$	0
$W^+W^-  o H d \bar d$	$-2.617 \cdot 10^{-7}$	$-2.617 \cdot 10^{-7}$	0	$8.147 \cdot 10^{-7}$	$8.147 \cdot 10^{-7}$	0
$W^+W^-  o H t \bar t$	$1.166 \cdot 10^{-5}$	$1.166 \cdot 10^{-5}$	0	$9.549 \cdot 10^{-6}$	$9.549 \cdot 10^{-6}$	0
$\bar{b}t \to \bar{d}u$	0.003344	0.003344	0	0.0002027	0.0002027	0
$b\bar{b} \to \mu^+ \mu^-$	$4.78 \cdot 10^{-5}$	$4.78 \cdot 10^{-5}$	0	$3.958 \cdot 10^{-6}$	$3.958 \cdot 10^{-6}$	0
$b\bar{b} \to \nu_e \bar{\nu}_e$	$3.252 \cdot 10^{-5}$	$3.252 \cdot 10^{-5}$	0	$1.168 \cdot 10^{-6}$	$1.168 \cdot 10^{-6}$	0
$b\bar{b}  o b\bar{b}$	-0.08525	-0.08525	0	0.003953	0.003953	0
$b\bar{b} \to d\bar{d}$	$8.694 \cdot 10^{-5}$	$8.694 \cdot 10^{-5}$	0	$6.331 \cdot 10^{-6}$	$6.331 \cdot 10^{-6}$	0
$b\bar{b} \to t\bar{t}$	-0.005918	-0.005918	0	0.003932	0.003932	0
$b\bar{b} \to u\bar{u}$	$6.272 \cdot 10^{-5}$	$6.272 \cdot 10^{-5}$	0	$8.18 \cdot 10^{-6}$	$8.18 \cdot 10^{-6}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	0.0001629	0.0001629	0	$4.937 \cdot 10^{-6}$	$4.937 \cdot 10^{-6}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-4.4 \cdot 10^{-5}$	$-4.4 \cdot 10^{-5}$	0	$4.362 \cdot 10^{-6}$	$4.362 \cdot 10^{-6}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0.001173	0.001173	0	$3.557 \cdot 10^{-5}$	$3.557 \cdot 10^{-5}$	0
$d\bar{d} \to c\bar{c}$	0.001927	0.001927	0	0.0001213	0.0001213	0
$d\bar{d} \to e^+e^-$	0.0002056	0.0002056	0	$4.921 \cdot 10^{-6}$	$4.921 \cdot 10^{-6}$	0
$d\bar{d} \to s\bar{s}$	0.0004059	0.0004059	0	$2.664 \cdot 10^{-5}$	$2.664 \cdot 10^{-5}$	0
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	0.0005684	0.0005684	0	$2.041 \cdot 10^{-5}$	$2.041 \cdot 10^{-5}$	0
$s\bar{s} \to s\bar{s}$	-0.08569	-0.08569	0	0.00407	0.00407	0
$t \bar t  o  u_\mu ar u_\mu$	0.0004893	0.0004893	0	$2.186 \cdot 10^{-5}$	$2.186 \cdot 10^{-5}$	0
$t\bar{t} \to \tau^+ \tau^-$	0.0002905	0.0002905	0	$5.725 \cdot 10^{-6}$	$5.725 \cdot 10^{-6}$	0
$t\bar{t} \to c\bar{c}$	0.0008841	0.0008841	0	$4.967 \cdot 10^{-5}$	$4.967 \cdot 10^{-5}$	0
$t\bar{t} \to d\bar{d}$	0.0002965	0.0002965	0	$2.083 \cdot 10^{-5}$	$2.083 \cdot 10^{-5}$	0
$t\bar{t} \to s\bar{s}$	0.001176	0.001176	0	$7.44 \cdot 10^{-5}$	$7.44 \cdot 10^{-5}$	0
$t\bar{t} \to t\bar{t}$	-0.05297	-0.05297	0	0.008622	0.008622	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	0.0005009	0.0005009	0	$1.518 \cdot 10^{-5}$	$1.518 \cdot 10^{-5}$	0
$u\bar{d} \to c\bar{s}$	0.004447	0.004447	0	0.0002696	0.0002696	0
$u\bar{d} \to u\bar{d}$	-0.004291	-0.004291	0	0.0002208	0.0002208	0

$u\bar{u} \to \nu_e \bar{\nu}_e$	0.000495	0.000495	0	$2.179 \cdot 10^{-5}$ $2.179 \cdot 10^{-5}$	0
$u\bar{u} \to c\bar{c}$	$9.059 \cdot 10^{-5}$	$9.059 \cdot 10^{-5}$	0	$1.648 \cdot 10^{-5}$ $1.648 \cdot 10^{-5}$	0
$u\bar{u} \to u\bar{u}$	-0.000348	-0.000348	0	$2.722 \cdot 10^{-5}$ $2.722 \cdot 10^{-5}$	0

## 2.19 cHu

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to zc\bar{c}$	$3.182 \cdot 10^{-6}$	$3.182 \cdot 10^{-6}$	0	$4.901 \cdot 10^{-6}$	$4.901 \cdot 10^{-6}$	0	
$HH \to z t \bar{t}$	$-3.912 \cdot 10^{-6}$	$-3.912 \cdot 10^{-6}$	0	$1.066 \cdot 10^{-5}$	$1.066 \cdot 10^{-5}$	0	
$Hz \to t\bar{t}$	-2.206	-2.206	0	1.205	1.205	0	
$Hz \to u\bar{u}$	0.05761	0.05761	0	0.6743	0.6743	0	
$W^+W^-  o Hc\bar{c}$	$4.779 \cdot 10^{-8}$	$4.779 \cdot 10^{-8}$	0	$4.311 \cdot 10^{-8}$	$4.311 \cdot 10^{-8}$	0	
$W^+W^-  o H t \bar t$	$-1.582 \cdot 10^{-6}$	$-1.582 \cdot 10^{-6}$	0	$1.849 \cdot 10^{-6}$	$1.849 \cdot 10^{-6}$	0	
$b\bar{b} \to t\bar{t}$	-0.0006787	-0.0006787	0	$3.731 \cdot 10^{-6}$	$3.731 \cdot 10^{-6}$	0	
$b\bar{b} \to u\bar{u}$	0.0001955	0.0001955	0	$4.759 \cdot 10^{-5}$	$4.759 \cdot 10^{-5}$	0	
$c\bar{c} \to \mu^+ \mu^-$	$-8.21 \cdot 10^{-5}$	$-8.21 \cdot 10^{-5}$	0	$4.775 \cdot 10^{-6}$	$4.775 \cdot 10^{-6}$	0	
$d\bar{d} \to c\bar{c}$	$5.909 \cdot 10^{-5}$	$5.909 \cdot 10^{-5}$	0	$2.251 \cdot 10^{-6}$	$2.251 \cdot 10^{-6}$	0	
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$-6.894 \cdot 10^{-6}$	$-6.894 \cdot 10^{-6}$	0	$8.756 \cdot 10^{-7}$	$8.756 \cdot 10^{-7}$	0	
$t\bar{t} \to \tau^+ \tau^-$	0.0001931	0.0001931	0	$4.686 \cdot 10^{-6}$	$4.686 \cdot 10^{-6}$	0	
$t\bar{t} \to c\bar{c}$	0.0001123	0.0001123	0	$2.036 \cdot 10^{-5}$	$2.036 \cdot 10^{-5}$	0	
$t\bar{t} \to d\bar{d}$	0.0001391	0.0001391	0	$4.41 \cdot 10^{-5}$	$4.41 \cdot 10^{-5}$	0	
$t\bar{t} \to s\bar{s}$	$8.218 \cdot 10^{-5}$	$8.218 \cdot 10^{-5}$	0	$2.921 \cdot 10^{-5}$	$2.921 \cdot 10^{-5}$	0	
$t\bar{t} \to t\bar{t}$	-0.03422	-0.03422	0	0.008904	0.008904	0	
$u\bar{d} \to u\bar{d}$	0.0003142	0.0003142	0	$7.755 \cdot 10^{-5}$	$7.755 \cdot 10^{-5}$	0	
$u\bar{u} \to \nu_e \bar{\nu}_e$	$3.992 \cdot 10^{-5}$	$3.992 \cdot 10^{-5}$	0	$3.886 \cdot 10^{-6}$	$3.886 \cdot 10^{-6}$	0	
$u\bar{u} \to c\bar{c}$	-0.0002343	-0.0002343	0	$5.09\cdot10^{-5}$	$5.09 \cdot 10^{-5}$	0	
$u\bar{u} \to u\bar{u}$	-0.01856	-0.01856	0	0.0006417	0.0006417	0	

#### 2.20 cHudIm

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH  o W^+ \bar t b$	$-1.402 \cdot 10^{-9}$	$-1.402 \cdot 10^{-9}$	$3.344 \cdot 10^{-5}$	$8.448 \cdot 10^{-9}$	$8.447 \cdot 10^{-9}$	$6.691 \cdot 10^{-5}$	
$HH \to W^- u \bar{d}$	$1.617 \cdot 10^{-26}$	$1.617 \cdot 10^{-26}$	0	$5.793 \cdot 10^{-24}$	$5.793 \cdot 10^{-24}$	0	
$HW^+  o \gamma t \bar{b}$	$-1.403 \cdot 10^{-10}$	$-1.403 \cdot 10^{-10}$	$3.35 \cdot 10^{-5}$	$6.315 \cdot 10^{-11}$	$6.314 \cdot 10^{-11}$	$6.691 \cdot 10^{-5}$	
$HW^+ \to \gamma u \bar{d}$	$2.156 \cdot 10^{-25}$	$2.156 \cdot 10^{-25}$	0	$2.053 \cdot 10^{-25}$	$2.053 \cdot 10^{-25}$	0	
$HW^+  o u \bar d$	$3.735 \cdot 10^{-23}$	$3.735 \cdot 10^{-23}$	0	$4.575 \cdot 10^{-20}$	$4.575 \cdot 10^{-20}$	0	
$HW^-  o \bar{t}b$	$-1.881 \cdot 10^{-7}$	$-1.881 \cdot 10^{-7}$	$3.344 \cdot 10^{-5}$	0.0001709	0.0001709	$6.69 \cdot 10^{-5}$	
$W^+W^-  o Hb\bar{b}$	$-1.667 \cdot 10^{-10}$	$-1.667 \cdot 10^{-10}$	$3.342 \cdot 10^{-5}$	$1.574 \cdot 10^{-10}$	$1.573 \cdot 10^{-10}$	$6.692 \cdot 10^{-5}$	
$W^+W^- \to H c \bar c$	$6.506 \cdot 10^{-20}$	$6.506 \cdot 10^{-20}$	0	$1.666 \cdot 10^{-24}$	$1.666 \cdot 10^{-24}$	0	
$W^+W^-  o H d \bar d$	$1.437 \cdot 10^{-25}$	$1.437 \cdot 10^{-25}$	0	$5.631 \cdot 10^{-35}$	$5.631 \cdot 10^{-35}$	0	
$W^+W^-  o H t \bar t$	$-1.603 \cdot 10^{-11}$	$-1.603 \cdot 10^{-11}$	$3.343 \cdot 10^{-5}$	$5.812 \cdot 10^{-13}$	$5.812 \cdot 10^{-13}$	$6.69 \cdot 10^{-5}$	
$\bar{b}t \to \bar{d}u$	$3.021 \cdot 10^{-24}$	$-4.135 \cdot 10^{-24}$	2.369	$5.403 \cdot 10^{-10}$	$5.403 \cdot 10^{-10}$	$6.691 \cdot 10^{-5}$	
$b\bar{b}  o t\bar{t}$	$9.046 \cdot 10^{-22}$	$-8.091 \cdot 10^{-22}$	1.894	$3.74 \cdot 10^{-7}$	$3.74 \cdot 10^{-7}$	$6.69 \cdot 10^{-5}$	
$b \bar t  o e^- \bar  u_e$	$-1.795 \cdot 10^{-24}$	$2.697 \cdot 10^{-25}$	1.15	$7.161 \cdot 10^{-9}$	$7.16 \cdot 10^{-9}$	$6.69 \cdot 10^{-5}$	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-2.559 \cdot 10^{-31}$	$-2.559 \cdot 10^{-31}$	0	$2.184 \cdot 10^{-18}$	$2.184 \cdot 10^{-18}$	0	
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-4.54 \cdot 10^{-39}$	$-4.54 \cdot 10^{-39}$	0	$8.283 \cdot 10^{-25}$	$8.283 \cdot 10^{-25}$	0	
$u\bar{d} \to c\bar{s}$	$6.794 \cdot 10^{-34}$	$6.794 \cdot 10^{-34}$	0	$1.748 \cdot 10^{-16}$		0	
$u\bar{d} \to u\bar{d}$	$-5.655 \cdot 10^{-36}$	$-5.655 \cdot 10^{-36}$	0	$1.353 \cdot 10^{-25}$	$1.353 \cdot 10^{-25}$	0	

## 2.21 cHudRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+ \bar t b$	$-1.618 \cdot 10^{-7}$	$-1.618 \cdot 10^{-7}$	$3.343 \cdot 10^{-5}$	$9.362 \cdot 10^{-9}$	$9.361 \cdot 10^{-9}$	$6.69 \cdot 10^{-5}$		
$HH \to W^- u \bar{d}$	$-3.417 \cdot 10^{-24}$	$-3.417 \cdot 10^{-24}$	0	$3.275 \cdot 10^{-25}$	$3.275 \cdot 10^{-25}$	0		
$HW^+ \to \gamma t \bar{b}$	$-6.732 \cdot 10^{-12}$	$-6.732 \cdot 10^{-12}$	$3.345 \cdot 10^{-5}$	$2.275 \cdot 10^{-12}$	$2.275 \cdot 10^{-12}$	$6.689 \cdot 10^{-5}$		

$HW^+ \to \gamma u \bar{d}$	$-2.308 \cdot 10^{-26}$	$-2.308 \cdot 10^{-26}$	0	$4.819 \cdot 10^{-27}$	$4.819 \cdot 10^{-27}$	0
$HW^+  o u \bar d$	$-2.344 \cdot 10^{-19}$	$-2.344 \cdot 10^{-19}$	0	$5.744 \cdot 10^{-20}$	$5.744 \cdot 10^{-20}$	0
$HW^- \to \bar{t}b$	-0.001019	-0.001019	$3.346 \cdot 10^{-5}$	0.0001525	0.0001524	$6.684 \cdot 10^{-5}$
$W^+W^-  o Hb\bar{b}$	$-3.272 \cdot 10^{-7}$	$-3.272 \cdot 10^{-7}$	$3.346 \cdot 10^{-5}$	$1.265 \cdot 10^{-9}$	$1.265 \cdot 10^{-9}$	$6.694 \cdot 10^{-5}$
$W^+W^- \to Hc\bar{c}$	$2.335 \cdot 10^{-17}$	$2.335 \cdot 10^{-17}$	0	$5.319 \cdot 10^{-24}$	$5.319 \cdot 10^{-24}$	0
$W^+W^-  o Hd\bar{d}$	$-3.589 \cdot 10^{-25}$	$-3.589 \cdot 10^{-25}$	0	$1.145 \cdot 10^{-35}$	$1.145 \cdot 10^{-35}$	0
$W^+W^- \to H t \bar t$	$1.085 \cdot 10^{-9}$	$1.085 \cdot 10^{-9}$	$3.345 \cdot 10^{-5}$	$1.137 \cdot 10^{-12}$	$1.137 \cdot 10^{-12}$	$6.686 \cdot 10^{-5}$
$\bar{b}t \to \bar{d}u$	$-4.67 \cdot 10^{-8}$	$-4.67 \cdot 10^{-8}$	$3.347 \cdot 10^{-5}$	$4.772 \cdot 10^{-10}$	$4.772 \cdot 10^{-10}$	$6.691 \cdot 10^{-5}$
$b\bar{b}  o t\bar{t}$	$2.676 \cdot 10^{-5}$	$2.676 \cdot 10^{-5}$	$3.344 \cdot 10^{-5}$	$1.81 \cdot 10^{-6}$	$1.81 \cdot 10^{-6}$	$6.691 \cdot 10^{-5}$
$b\bar{t} \to e^-\bar{\nu}_e$	$-1.557 \cdot 10^{-8}$	$-1.557 \cdot 10^{-8}$	$3.347 \cdot 10^{-5}$	$2.252 \cdot 10^{-9}$	$2.252 \cdot 10^{-9}$	$6.688 \cdot 10^{-5}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-4.004 \cdot 10^{-16}$	$-4.004 \cdot 10^{-16}$	0	$3.774 \cdot 10^{-18}$	$3.774 \cdot 10^{-18}$	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-3.037 \cdot 10^{-24}$	$-3.037 \cdot 10^{-24}$	0	$4.305 \cdot 10^{-25}$	$4.305 \cdot 10^{-25}$	0
$u\bar{d} \to c\bar{s}$	$-1.249 \cdot 10^{-15}$	$-1.249 \cdot 10^{-15}$	0	$3.793 \cdot 10^{-16}$	$3.793 \cdot 10^{-16}$	0
$u\bar{d} \to u\bar{d}$	$-1.114 \cdot 10^{-20}$	$-1.114 \cdot 10^{-20}$	0	$5.679 \cdot 10^{-24}$	$5.679 \cdot 10^{-24}$	0

## 2.22 cW

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o W^+W^-\gamma$	$3.031 \cdot 10^{-6}$	$3.031 \cdot 10^{-6}$	0	$7.528 \cdot 10^{-7}$	$7.528 \cdot 10^{-7}$	0	
$HW^+ \to \gamma t \bar{b}$	$1.938 \cdot 10^{-6}$	$1.938 \cdot 10^{-6}$	0	$8.601 \cdot 10^{-6}$	$8.601 \cdot 10^{-6}$	0	
$HW^+ \rightarrow \gamma u \bar{d}$	$1.547 \cdot 10^{-8}$	$1.547\cdot10^{-8}$	0	$3.393 \cdot 10^{-9}$	$3.393 \cdot 10^{-9}$	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-2.565 \cdot 10^{-9}$	$-2.565 \cdot 10^{-9}$	0	$3.089 \cdot 10^{-9}$	$3.089 \cdot 10^{-9}$	0	
$W^+W^-  o Hb\bar{b}$	$-2.597 \cdot 10^{-7}$	$-2.597 \cdot 10^{-7}$	0	$8.375 \cdot 10^{-7}$	$8.375 \cdot 10^{-7}$	0	
$W^+W^- \to Hc\bar{c}$	$-1.277 \cdot 10^{-7}$	$-1.277 \cdot 10^{-7}$	0	$8.864 \cdot 10^{-7}$	$8.864 \cdot 10^{-7}$	0	
$W^+W^-  o Hd\bar{d}$	$-4.565 \cdot 10^{-8}$	$-4.565 \cdot 10^{-8}$	0	$4.954 \cdot 10^{-7}$	$4.954 \cdot 10^{-7}$	0	
$W^+W^-  o Ht\bar{t}$	$-1.931 \cdot 10^{-7}$	$-1.931 \cdot 10^{-7}$	0	$3.153 \cdot 10^{-6}$	$3.153 \cdot 10^{-6}$	0	
$W^+W^-  o W^+W^-$	0.09321	0.09321	0	1.543	1.543	0	
$W^+W^- \to \gamma\gamma$	0.0007227	0.0007227	0	0.7175	0.7175	0	

$W^+W^- \to \gamma\gamma\gamma$	$1.599 \cdot 10^{-7}$	$1.599 \cdot 10^{-7}$	0	$2.893 \cdot 10^{-6}$	$2.893 \cdot 10^{-6}$	0
$\gamma W^+  o z W^+$	0.007021	0.007021	0	1.345	1.345	0
$zz \to W^+W^-$	-0.02496	-0.02496	0	15.43	15.43	0

## 2.23 cWtil

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to W^+W^-\gamma$	$-1.517 \cdot 10^{-6}$	$-1.517 \cdot 10^{-6}$	0	$7.528 \cdot 10^{-7}$	$7.528 \cdot 10^{-7}$	0	
$HW^+ \to \gamma t \bar{b}$	$2.369 \cdot 10^{-7}$	$2.369 \cdot 10^{-7}$	0	$8.601 \cdot 10^{-6}$	$8.601 \cdot 10^{-6}$	0	
$HW^+ \to \gamma u \bar{d}$	$-5.631 \cdot 10^{-9}$	$-5.631 \cdot 10^{-9}$	0	$3.393 \cdot 10^{-9}$	$3.393 \cdot 10^{-9}$	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-7.011 \cdot 10^{-10}$	$-7.011 \cdot 10^{-10}$	0	$3.089 \cdot 10^{-9}$	$3.089 \cdot 10^{-9}$	0	
$W^+W^- \to H b \bar b$	$7.55 \cdot 10^{-8}$	$7.55 \cdot 10^{-8}$	0	$8.398 \cdot 10^{-7}$	$8.398 \cdot 10^{-7}$	0	
$W^+W^- \to Hc\bar{c}$	$-1.456 \cdot 10^{-7}$	$-1.456 \cdot 10^{-7}$	0	$8.877 \cdot 10^{-7}$	$8.877 \cdot 10^{-7}$	0	
$W^+W^- \to H d\bar{d}$	$-5.271 \cdot 10^{-8}$	$-5.271 \cdot 10^{-8}$	0	$4.968 \cdot 10^{-7}$	$4.968 \cdot 10^{-7}$	0	
$W^+W^-  o H t \bar t$	$-1.002 \cdot 10^{-7}$	$-1.002 \cdot 10^{-7}$	0	$3.154 \cdot 10^{-6}$	$3.154 \cdot 10^{-6}$	0	
$W^+W^- \to W^+W^-$	$5.872 \cdot 10^{-14}$	$6.287 \cdot 10^{-14}$	-0.07069	1.543	1.543	0	
$W^+W^- \to \gamma\gamma$	$-2.641 \cdot 10^{-18}$	$-2.337 \cdot 10^{-18}$	0.1152	0.7175	0.7175	0	
$W^+W^- \to \gamma\gamma\gamma$	$-3.413 \cdot 10^{-7}$	$-3.413 \cdot 10^{-7}$	0	$2.892 \cdot 10^{-6}$	$2.892 \cdot 10^{-6}$	0	
$\gamma W^+ \to z W^+$	$6.18 \cdot 10^{-15}$	$7.635 \cdot 10^{-15}$	-0.2355	1.345	1.345	0	
$zz \to W^+W^-$	$-1.623 \cdot 10^{-13}$	$-1.621 \cdot 10^{-13}$	0.0008635	15.43	15.43	0	

#### 2.24 cdBIm

		interfere	ence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
$HH  o z \bar{b} b$	$1.446 \cdot 10^{-10}$	$1.446 \cdot 10^{-10}$	$3.333 \cdot 10^{-5}$	$6.148 \cdot 10^{-11}  6.148 \cdot 10^{-11}  6.674 \cdot 10^{-5}$
$HH \to z d\bar{d}$	$5.021 \cdot 10^{-15}$	$5.021 \cdot 10^{-15}$	0	$7.01 \cdot 10^{-16}$ $7.01 \cdot 10^{-16}$ 0
$HW^+  o \gamma t \bar{b}$	$-1.58 \cdot 10^{-10}$	$-1.58 \cdot 10^{-10}$	$3.334 \cdot 10^{-5}$	$4.828 \cdot 10^{-9}$ $4.827 \cdot 10^{-9}$ $6.672 \cdot 10^{-5}$

$HW^+ \to \gamma u \bar{d}$	$-6.272 \cdot 10^{-17}$	$-6.272 \cdot 10^{-17}$	0	$9.778 \cdot 10^{-17}$	$9.778 \cdot 10^{-17}$	0
$H\gamma  o bar{b}$	$-3.943 \cdot 10^{-24}$	$-3.115 \cdot 10^{-24}$	0.2098	0.001295	0.001295	$6.674 \cdot 10^{-5}$
$H\gamma \to d\bar{d}$	$-4.368 \cdot 10^{-36}$	$-4.368 \cdot 10^{-36}$	0	$1.49 \cdot 10^{-9}$	$1.49 \cdot 10^{-9}$	0
$Hz  o b\bar{b}$	$6.827 \cdot 10^{-8}$	$6.827 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	0.0001233	0.0001233	$6.675 \cdot 10^{-5}$
$Hz \to s\bar{s}$	$2.774 \cdot 10^{-11}$	$2.774 \cdot 10^{-11}$	0	$8.611 \cdot 10^{-8}$	$8.611 \cdot 10^{-8}$	0
$W^+W^-  o Hb\bar{b}$	$7.472 \cdot 10^{-9}$	$7.472 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$7.443 \cdot 10^{-9}$	$7.442 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$
$W^+W^- \to H d\bar{d}$	$-3.663 \cdot 10^{-17}$	$-3.663 \cdot 10^{-17}$	0	$3.065 \cdot 10^{-18}$	$3.065 \cdot 10^{-18}$	0
$b\bar{b} \to \gamma \gamma$	$-7.67 \cdot 10^{-25}$	$1.371 \cdot 10^{-23}$	18.87	$1.169 \cdot 10^{-6}$	$1.169 \cdot 10^{-6}$	$6.672 \cdot 10^{-5}$
$b\bar{b} \to \mu^+ \mu^-$	$-1.249 \cdot 10^{-22}$	$-1.249 \cdot 10^{-22}$	$4.594 \cdot 10^{-5}$	$1.379 \cdot 10^{-6}$	$1.379 \cdot 10^{-6}$	$6.672 \cdot 10^{-5}$
$b\bar{b} \to \nu_e \bar{\nu}_e$	$-2.055 \cdot 10^{-22}$	$-2.055 \cdot 10^{-22}$	$3.494 \cdot 10^{-5}$	$3.004 \cdot 10^{-7}$	$3.004 \cdot 10^{-7}$	$6.672 \cdot 10^{-5}$
$b\bar{b}  o b\bar{b}$	$7.307 \cdot 10^{-21}$	$7.501 \cdot 10^{-21}$	-0.02655	$1.539 \cdot 10^{-5}$	$1.539 \cdot 10^{-5}$	$6.672 \cdot 10^{-5}$
$b\bar{b} \to d\bar{d}$	$-5.904 \cdot 10^{-23}$	$-5.903 \cdot 10^{-23}$	$4.867 \cdot 10^{-5}$	$4.38 \cdot 10^{-7}$	$4.379 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to t\bar{t}$	$2.191 \cdot 10^{-21}$	$1.85 \cdot 10^{-21}$	0.1557	$1.32 \cdot 10^{-6}$	$1.32 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-3.024 \cdot 10^{-22}$	$-3.024 \cdot 10^{-22}$	$4.867 \cdot 10^{-5}$	$2.109 \cdot 10^{-7}$	$2.109 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$6.598 \cdot 10^{-29}$	$6.598 \cdot 10^{-29}$	0	$1.279 \cdot 10^{-12}$	$1.279 \cdot 10^{-12}$	0
$d\bar{d} \to e^+e^-$	$-7.556 \cdot 10^{-28}$	$-7.556 \cdot 10^{-28}$	0	$2.325 \cdot 10^{-12}$	$2.325 \cdot 10^{-12}$	0
$d\bar{d} \to s\bar{s}$	$2.727 \cdot 10^{-26}$	$1.183 \cdot 10^{-26}$	0.5664	$1.186 \cdot 10^{-10}$	$1.186 \cdot 10^{-10}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$4.971 \cdot 10^{-26}$	$4.971 \cdot 10^{-26}$	0	$1.503 \cdot 10^{-10}$	$1.503 \cdot 10^{-10}$	0
$s\bar{s} \to s\bar{s}$	$5.911 \cdot 10^{-23}$	$5.91 \cdot 10^{-23}$	0.0001943	$3.821 \cdot 10^{-9}$	$3.821 \cdot 10^{-9}$	0
$t\bar{t} \to d\bar{d}$	$4.043 \cdot 10^{-27}$	$4.11 \cdot 10^{-27}$	-0.01665	$8.274 \cdot 10^{-13}$	$8.274 \cdot 10^{-13}$	0
$t\bar{t} \to s\bar{s}$	$7.426 \cdot 10^{-24}$	$7.324 \cdot 10^{-24}$	0.01375	$8.227 \cdot 10^{-10}$	$8.227 \cdot 10^{-10}$	0
$u\bar{d} \to u\bar{d}$	$-3.826 \cdot 10^{-26}$	$-3.826 \cdot 10^{-26}$	$-5.75 \cdot 10^{-7}$	$2.809 \cdot 10^{-12}$	$2.809 \cdot 10^{-12}$	0

## 2.25 cdBRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$HH \to z\bar{b}b$	$-1.475 \cdot 10^{-9}$	$-1.475 \cdot 10^{-9}$	$3.335 \cdot 10^{-5}$	$2.991 \cdot 10^{-10}$	$2.991 \cdot 10^{-10}$	$6.674 \cdot 10^{-5}$	
$HH \to z d\bar{d}$	$1.388 \cdot 10^{-15}$	$1.388 \cdot 10^{-15}$	0	$4.544 \cdot 10^{-16}$	$4.544 \cdot 10^{-16}$	0	

$HW^+ \to \gamma t \bar{b}$	$8.807 \cdot 10^{-9}$	$8.806 \cdot 10^{-9}$	$3.336 \cdot 10^{-5}$	$2.291 \cdot 10^{-9}$	$2.291 \cdot 10^{-9}$	$6.673 \cdot 10^{-5}$
$HW^+ \to \gamma u \bar{d}$	$9.13 \cdot 10^{-17}$	$9.13 \cdot 10^{-17}$	0	$4.369 \cdot 10^{-16}$	$4.369 \cdot 10^{-16}$	0
$H\gamma  o b\bar{b}$	$-3.085 \cdot 10^{-7}$	$-3.085 \cdot 10^{-7}$	$3.336 \cdot 10^{-5}$	0.0001902	0.0001901	$6.674 \cdot 10^{-5}$
$H\gamma \to d\bar{d}$	$-8.147 \cdot 10^{-20}$	$-8.147 \cdot 10^{-20}$	0	$1.398 \cdot 10^{-9}$	$1.398 \cdot 10^{-9}$	0
$Hz \to b\bar{b}$	$-1.684 \cdot 10^{-5}$	$-1.684 \cdot 10^{-5}$	$3.338 \cdot 10^{-5}$	0.0002676	0.0002675	$6.675 \cdot 10^{-5}$
$Hz \to s\bar{s}$	$-8.345 \cdot 10^{-9}$	$-8.345 \cdot 10^{-9}$	0	$1.324 \cdot 10^{-7}$	$1.324 \cdot 10^{-7}$	0
$W^+W^- \to H b \bar b$	$6.047 \cdot 10^{-11}$	$6.047 \cdot 10^{-11}$	$3.337 \cdot 10^{-5}$	$3.042 \cdot 10^{-12}$	$3.041 \cdot 10^{-12}$	$6.674 \cdot 10^{-5}$
$W^+W^-  o H d \bar d$	$9.415 \cdot 10^{-17}$	$9.415 \cdot 10^{-17}$	0	$4.962 \cdot 10^{-18}$	$4.962 \cdot 10^{-18}$	0
$b\bar{b} \to \gamma \gamma$	$1.872 \cdot 10^{-7}$	$1.872 \cdot 10^{-7}$	$3.339 \cdot 10^{-5}$	$1.169 \cdot 10^{-6}$	$1.169 \cdot 10^{-6}$	$6.68 \cdot 10^{-5}$
$b\bar{b} \to \mu^+ \mu^-$	$3.784 \cdot 10^{-8}$	$3.784 \cdot 10^{-8}$	$3.338 \cdot 10^{-5}$	$8.647 \cdot 10^{-7}$	$8.646 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
$b\bar{b} \to \nu_e \bar{\nu}_e$	$-7.85 \cdot 10^{-8}$	$-7.85 \cdot 10^{-8}$	$3.336 \cdot 10^{-5}$	$2.632 \cdot 10^{-7}$	$2.632 \cdot 10^{-7}$	$6.672 \cdot 10^{-5}$
$b\bar{b}  o b\bar{b}$	$-4.703 \cdot 10^{-5}$	$-4.703 \cdot 10^{-5}$	$3.336 \cdot 10^{-5}$	$2.604 \cdot 10^{-5}$	$2.604 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to d\bar{d}$	$-1.469 \cdot 10^{-7}$	$-1.469 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$2.987 \cdot 10^{-7}$	$2.987 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$
$b\bar{b} \to t\bar{t}$	$8.809 \cdot 10^{-6}$	$8.809 \cdot 10^{-6}$	$3.336 \cdot 10^{-5}$	$1.281 \cdot 10^{-6}$	$1.281 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-2.735 \cdot 10^{-7}$	$-2.735 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$5.508 \cdot 10^{-7}$	$5.508 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$1.837 \cdot 10^{-12}$	$1.837 \cdot 10^{-12}$	0	$1.302 \cdot 10^{-12}$	$1.302 \cdot 10^{-12}$	0
$d\bar{d} \rightarrow e^+e^-$	$1.56 \cdot 10^{-12}$	$1.56 \cdot 10^{-12}$	0	$1.19 \cdot 10^{-12}$	$1.19 \cdot 10^{-12}$	0
$d\bar{d} \to s\bar{s}$	$-1.413 \cdot 10^{-10}$	$-1.413 \cdot 10^{-10}$	0	$2.859 \cdot 10^{-10}$	$2.859 \cdot 10^{-10}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-4.476 \cdot 10^{-10}$	$-4.476 \cdot 10^{-10}$	0	$4.689 \cdot 10^{-11}$	$4.689 \cdot 10^{-11}$	0
$s\bar{s} \to s\bar{s}$	$-2.378 \cdot 10^{-8}$	$-2.378 \cdot 10^{-8}$	0	$1.305 \cdot 10^{-8}$	$1.305 \cdot 10^{-8}$	0
$t\bar{t} \to d\bar{d}$	$5.206 \cdot 10^{-12}$	$5.206 \cdot 10^{-12}$	0	$2.384 \cdot 10^{-12}$	$2.384 \cdot 10^{-12}$	0
$t\bar{t} \to s\bar{s}$	$-1.04 \cdot 10^{-9}$	$-1.04 \cdot 10^{-9}$	0	$9.705 \cdot 10^{-10}$	$9.705 \cdot 10^{-10}$	0
$u\bar{d} \to u\bar{d}$	$-2.435 \cdot 10^{-12}$	$-2.435 \cdot 10^{-12}$	0	$6.357 \cdot 10^{-12}$	$6.357 \cdot 10^{-12}$	0

#### 2.26 cdGIm

		interfer	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o b\bar{b}$	$1.21 \cdot 10^{-19}$	$9.445 \cdot 10^{-20}$	0.2194	0.0008174	0.0008173	$6.674 \cdot 10^{-5}$	

$b\bar{b} \to d\bar{d}$	$-1.115 \cdot 10^{-27}$	$-1.165 \cdot 10^{-27}$	-0.04523	$1.092 \cdot 10^{-5}$	$1.092 \cdot 10^{-5}$	$6.675 \cdot 10^{-5}$
$b\bar{b} \to t\bar{t}$	$-2.392 \cdot 10^{-21}$	$-4.536 \cdot 10^{-21}$	-0.8963	$1.465 \cdot 10^{-5}$	$1.465\cdot10^{-5}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$1.795 \cdot 10^{-27}$	$1.361 \cdot 10^{-33}$	1	$5.981 \cdot 10^{-6}$	$5.981 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$2.481 \cdot 10^{-33}$	$2.481 \cdot 10^{-33}$	0	$1.415 \cdot 10^{-11}$	$1.415 \cdot 10^{-11}$	0
$d\bar{d} \to s\bar{s}$	$-1.746 \cdot 10^{-24}$	$-1.77 \cdot 10^{-24}$	-0.01357	$1.045 \cdot 10^{-8}$	$1.045 \cdot 10^{-8}$	0
$s\bar{s} \to s\bar{s}$	$-5.251 \cdot 10^{-24}$	$-5.251 \cdot 10^{-24}$	0	$4.11\cdot 10^{-7}$	$4.11\cdot 10^{-7}$	0
$t\bar{t} \to d\bar{d}$	$8.668 \cdot 10^{-28}$	$8.555 \cdot 10^{-28}$	0.01294	$2.682 \cdot 10^{-11}$	$2.682 \cdot 10^{-11}$	0
$t\bar{t} \to s\bar{s}$	$1.455 \cdot 10^{-24}$	$1.454 \cdot 10^{-24}$	0.0009867	$1.091 \cdot 10^{-8}$	$1.091 \cdot 10^{-8}$	0
$u\bar{d} \to u\bar{d}$	$-1.264 \cdot 10^{-26}$	$-1.264 \cdot 10^{-26}$	0	$6.935 \cdot 10^{-11}$	$6.935 \cdot 10^{-11}$	0

#### 2.27 cdGRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o b\bar{b}$	-0.0004169	-0.0004169	$3.336 \cdot 10^{-5}$	0.000165	0.000165	$6.673 \cdot 10^{-5}$		
$b\bar{b} \to d\bar{d}$	-0.000112	-0.000112	$3.329 \cdot 10^{-5}$	$1.991 \cdot 10^{-5}$	$1.991 \cdot 10^{-5}$	$6.675 \cdot 10^{-5}$		
$b\bar{b} \to t\bar{t}$	-0.0001099	-0.0001099	$3.34 \cdot 10^{-5}$	$1.875 \cdot 10^{-5}$	$1.875 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	-0.000112	-0.000112	$3.329 \cdot 10^{-5}$	$2.268 \cdot 10^{-5}$	$2.267 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-1.398 \cdot 10^{-10}$	$-1.398 \cdot 10^{-10}$	0	$1.073 \cdot 10^{-12}$	$1.073 \cdot 10^{-12}$	0		
$d\bar{d} \to s\bar{s}$	$-5.56 \cdot 10^{-8}$	$-5.56 \cdot 10^{-8}$	0	$1.055 \cdot 10^{-8}$	$1.055 \cdot 10^{-8}$	0		
$s\bar{s} \to s\bar{s}$	$-2.68 \cdot 10^{-7}$	$-2.68 \cdot 10^{-7}$	0	$2.033 \cdot 10^{-7}$	$2.033 \cdot 10^{-7}$	0		
$t\bar{t} \to d\bar{d}$	$-1.567 \cdot 10^{-10}$	$-1.567 \cdot 10^{-10}$	0	$2.536 \cdot 10^{-11}$	$2.536 \cdot 10^{-11}$	0		
$t\bar{t} \to s\bar{s}$	$-6.213 \cdot 10^{-8}$	$-6.213 \cdot 10^{-8}$	0	$5.371 \cdot 10^{-9}$	$5.371 \cdot 10^{-9}$	0		
$u\bar{d} \to u\bar{d}$	$-1.574 \cdot 10^{-10}$	$-1.574 \cdot 10^{-10}$	0	$8.28 \cdot 10^{-10}$	$8.28 \cdot 10^{-10}$	0		

#### 2.28 cdHIm

$HH  o Hbar{b}$	$-5.424 \cdot 10^{-12}$	$-5.424 \cdot 10^{-12}$	$3.337 \cdot 10^{-5}$	$1.463 \cdot 10^{-12}$	$1.463 \cdot 10^{-12}$	$6.671 \cdot 10^{-5}$
$HH \to Hs\bar{s}$	$7.358 \cdot 10^{-19}$	$7.358 \cdot 10^{-19}$	0	$9.067 \cdot 10^{-14}$	$9.067 \cdot 10^{-14}$	0
$HH \to W^+ \bar{t} b$	$-7.045 \cdot 10^{-8}$	$-7.045 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	$1.395 \cdot 10^{-8}$	$1.395 \cdot 10^{-8}$	$6.675 \cdot 10^{-5}$
$HH \to W^- u \bar{d}$	$-5.894 \cdot 10^{-16}$	$-5.894 \cdot 10^{-16}$	0	$2.287 \cdot 10^{-15}$	$2.287 \cdot 10^{-15}$	0
$HH  o z \bar{b} b$	$3.855 \cdot 10^{-10}$	$3.855 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$2.932 \cdot 10^{-10}$	$2.932 \cdot 10^{-10}$	$6.671 \cdot 10^{-5}$
$HH \to z d\bar{d}$	$4.523 \cdot 10^{-15}$	$4.523 \cdot 10^{-15}$	0	$1.206 \cdot 10^{-15}$	$1.206 \cdot 10^{-15}$	0
$HW^+ \to \gamma t \bar{b}$	$-1.602 \cdot 10^{-12}$	$-1.602 \cdot 10^{-12}$	$3.34 \cdot 10^{-5}$	$9.085 \cdot 10^{-14}$	$9.085 \cdot 10^{-14}$	$6.673 \cdot 10^{-5}$
$HW^+ \to \gamma u \bar{d}$	$-3.579 \cdot 10^{-17}$	$-3.579 \cdot 10^{-17}$	0	$2.336 \cdot 10^{-18}$	$2.336 \cdot 10^{-18}$	0
$HW^+ \to u\bar{d}$	$-2.395 \cdot 10^{-13}$	$-2.395 \cdot 10^{-13}$	0	$4.422 \cdot 10^{-11}$	$4.422 \cdot 10^{-11}$	0
$HW^- \to \bar{t}b$	$4.619 \cdot 10^{-8}$	$4.619 \cdot 10^{-8}$	$3.336 \cdot 10^{-5}$	$3.638 \cdot 10^{-5}$	$3.637 \cdot 10^{-5}$	$6.672 \cdot 10^{-5}$
$H\gamma  o b\bar{b}$	$-4.235 \cdot 10^{-22}$	$-4.235 \cdot 10^{-22}$	$3.814 \cdot 10^{-5}$	$2.841 \cdot 10^{-7}$	$2.841 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$H\gamma \to d\bar{d}$	$-4.039 \cdot 10^{-28}$	$-4.039 \cdot 10^{-28}$	0	$3.844 \cdot 10^{-13}$	$3.844 \cdot 10^{-13}$	0
$Hz  o b ar{b}$	$1.764 \cdot 10^{-10}$	$1.764 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$3.634 \cdot 10^{-5}$	$3.633 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$
$Hz \to s\bar{s}$	$5.022 \cdot 10^{-14}$	$5.022 \cdot 10^{-14}$	0	$1.77 \cdot 10^{-8}$	$1.77 \cdot 10^{-8}$	0
$W^+W^- \to Hb\bar{b}$	$-8.944 \cdot 10^{-10}$	$-8.943 \cdot 10^{-10}$	$3.336 \cdot 10^{-5}$	$3.515 \cdot 10^{-11}$	$3.515 \cdot 10^{-11}$	$6.674 \cdot 10^{-5}$
$W^+W^- \to Hc\bar{c}$	$5.963 \cdot 10^{-14}$	$5.963 \cdot 10^{-14}$	0	$3.455 \cdot 10^{-21}$	$3.455 \cdot 10^{-21}$	0
$W^+W^-  o Hd\bar{d}$	$1.074 \cdot 10^{-16}$	$1.074 \cdot 10^{-16}$	0	$1.99 \cdot 10^{-17}$	$1.99 \cdot 10^{-17}$	0
$W^+W^- \to H t \bar t$	$1.439 \cdot 10^{-10}$	$1.439 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$1.977 \cdot 10^{-14}$	$1.977 \cdot 10^{-14}$	$6.672 \cdot 10^{-5}$
$b\bar{b}  o \mu^+\mu^-$	$-4.429 \cdot 10^{-30}$	$-1.646 \cdot 10^{-30}$	0.6284	$6.711 \cdot 10^{-14}$	$6.711 \cdot 10^{-14}$	$6.672 \cdot 10^{-5}$
$b\bar{b}  o b\bar{b}$	$1.088 \cdot 10^{-21}$	$6.199 \cdot 10^{-22}$	0.4304	$1.571 \cdot 10^{-9}$	$1.571 \cdot 10^{-9}$	$6.671 \cdot 10^{-5}$
$b\bar{b} \to d\bar{d}$	$-8.51 \cdot 10^{-31}$	$-1.239 \cdot 10^{-30}$	-0.456	$7.866 \cdot 10^{-16}$	$7.865 \cdot 10^{-16}$	$3.336 \cdot 10^{-5}$
$b\bar{b}  o t\bar{t}$	$1.776 \cdot 10^{-21}$	$8.882 \cdot 10^{-22}$	0.5	$4.74 \cdot 10^{-7}$	$4.74 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-7.772 \cdot 10^{-32}$	$-1.229 \cdot 10^{-31}$	-0.5815	$8.414 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	$6.673 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$-2.615 \cdot 10^{-32}$	$-2.615 \cdot 10^{-32}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
$d\bar{d} \rightarrow e^+e^-$	$-2.571 \cdot 10^{-39}$	$-2.571 \cdot 10^{-39}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
$d\bar{d} \to s\bar{s}$	$7.215 \cdot 10^{-34}$	$7.215 \cdot 10^{-34}$	0	$3.893 \cdot 10^{-19}$	$3.893 \cdot 10^{-19}$	0
$s\bar{s} \to s\bar{s}$	$5.942 \cdot 10^{-25}$	$5.942 \cdot 10^{-25}$	$-5.891 \cdot 10^{-7}$	$3.934 \cdot 10^{-16}$	$3.934 \cdot 10^{-16}$	0
$t\bar{t} \to d\bar{d}$	$1.49 \cdot 10^{-28}$	$1.069 \cdot 10^{-28}$	0.2824	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	0
$t\bar{t} \to s\bar{s}$	$-2.965 \cdot 10^{-25}$	$-4.633 \cdot 10^{-27}$	0.9844	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0

 $u\bar{d} \to u\bar{d}$  3.276 · 10<sup>-36</sup> 3.218 · 10<sup>-36</sup> 0.01774 9.783 · 10<sup>-23</sup> 9.783 · 10<sup>-23</sup> 0

## 2.29 cdHRe

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to Hb\bar{b}$	$-9.58 \cdot 10^{-9}$	$-9.58 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$1.274 \cdot 10^{-9}$	$1.273 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$	
$HH \to Hs\bar{s}$	$-3.227 \cdot 10^{-12}$	$-3.227 \cdot 10^{-12}$	0	$1.129 \cdot 10^{-12}$	$1.129 \cdot 10^{-12}$	0	
$HH \to W^+ \bar{t} b$	$-1.281 \cdot 10^{-8}$	$-1.281 \cdot 10^{-8}$	$3.333 \cdot 10^{-5}$	$4.156 \cdot 10^{-9}$	$4.156 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$	
$HH \to W^- u \bar{d}$	$-1.004 \cdot 10^{-14}$	$-1.004 \cdot 10^{-14}$	0	$1.317 \cdot 10^{-14}$	$1.317 \cdot 10^{-14}$	0	
HH  o z ar b b	$-1.435 \cdot 10^{-9}$	$-1.435 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$1.466 \cdot 10^{-9}$	$1.466 \cdot 10^{-9}$	$6.677 \cdot 10^{-5}$	
$HH \to z d\bar{d}$	$-5.438 \cdot 10^{-15}$	$-5.438 \cdot 10^{-15}$	0	$4.327 \cdot 10^{-15}$	$4.327 \cdot 10^{-15}$	0	
$HW^+ \to \gamma t \bar{b}$	$2.021 \cdot 10^{-9}$	$2.021 \cdot 10^{-9}$	$3.34 \cdot 10^{-5}$	$8.072 \cdot 10^{-11}$	$8.071 \cdot 10^{-11}$	$6.674 \cdot 10^{-5}$	
$HW^+  o \gamma u \bar{d}$	$-6.713 \cdot 10^{-16}$	$-6.713 \cdot 10^{-16}$	0	$1.592 \cdot 10^{-16}$	$1.592 \cdot 10^{-16}$	0	
$HW^+ \to u\bar{d}$	$-3.186 \cdot 10^{-11}$	$-3.186 \cdot 10^{-11}$	0	$4.514 \cdot 10^{-11}$	$4.514 \cdot 10^{-11}$	0	
$HW^-  o \bar{t}b$	-0.0003391	-0.0003391	$3.338 \cdot 10^{-5}$	$4.458 \cdot 10^{-5}$	$4.458 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$	
$H\gamma \to b\bar{b}$	$-5.337 \cdot 10^{-5}$	$-5.337 \cdot 10^{-5}$	$3.337 \cdot 10^{-5}$	$1.618 \cdot 10^{-6}$	$1.618 \cdot 10^{-6}$	$6.675 \cdot 10^{-5}$	
$H\gamma \to d\bar{d}$	$-3.033 \cdot 10^{-11}$	$-3.033 \cdot 10^{-11}$	0	$9.194 \cdot 10^{-13}$	$9.194 \cdot 10^{-13}$	0	
$Hz  o b ar{b}$	-0.0002254	-0.0002254	$3.336 \cdot 10^{-5}$	$4.218 \cdot 10^{-5}$	$4.217 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$	
$Hz \to s\bar{s}$	$-1.904 \cdot 10^{-8}$	$-1.904 \cdot 10^{-8}$	0	$1.804 \cdot 10^{-8}$	$1.804 \cdot 10^{-8}$	0	
$W^+W^- \to Hb\bar{b}$	$2.18 \cdot 10^{-10}$	$2.18 \cdot 10^{-10}$	$3.335 \cdot 10^{-5}$	$8.83 \cdot 10^{-11}$	$8.83 \cdot 10^{-11}$	$6.674 \cdot 10^{-5}$	
$W^+W^-  o Hc\bar{c}$	$5.741 \cdot 10^{-14}$	$5.741 \cdot 10^{-14}$	0	$2.382 \cdot 10^{-21}$	$2.382 \cdot 10^{-21}$	0	
$W^+W^- \to H d\bar{d}$	$-4.943 \cdot 10^{-18}$	$-4.943 \cdot 10^{-18}$	0	$8.258 \cdot 10^{-17}$	$8.258 \cdot 10^{-17}$	0	
$W^+W^-  o H t \bar t$	$6.291 \cdot 10^{-11}$	$6.291 \cdot 10^{-11}$	$3.338 \cdot 10^{-5}$	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	$6.675 \cdot 10^{-5}$	
$b\bar{b} \to \mu^+ \mu^-$	$-2.198 \cdot 10^{-12}$	$-2.197 \cdot 10^{-12}$	$3.336 \cdot 10^{-5}$	$6.711 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	$6.674 \cdot 10^{-5}$	
$b\bar{b}  o b\bar{b}$	0.0001145	0.0001145	$3.336 \cdot 10^{-5}$	$2.811 \cdot 10^{-9}$	$2.811 \cdot 10^{-9}$	$6.671 \cdot 10^{-5}$	
$b\bar{b}  o d\bar{d}$	$-2.601 \cdot 10^{-14}$	$-2.601 \cdot 10^{-14}$	$1.669 \cdot 10^{-5}$	$1.573 \cdot 10^{-15}$	$1.573 \cdot 10^{-15}$	$3.337 \cdot 10^{-5}$	
$b\bar{b}  o t\bar{t}$	$-1.033 \cdot 10^{-5}$	$-1.032 \cdot 10^{-5}$	$3.332 \cdot 10^{-5}$	$4.74 \cdot 10^{-7}$	$4.739 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$	
$b\bar{b} \to u\bar{u}$	$-2.773 \cdot 10^{-15}$	$-2.773 \cdot 10^{-15}$	$3.336 \cdot 10^{-5}$	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	$6.673 \cdot 10^{-5}$	

$d\bar{d} \to c\bar{c}$	$-1.189 \cdot 10^{-15}  -1.189 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$ $3.63 \cdot 10^{-17}$ 0
$d\bar{d} \to e^+e^-$	$-6.449 \cdot 10^{-23}  -6.449 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}  1.959 \cdot 10^{-24} \qquad 0$
$d\bar{d} \to s\bar{s}$	$-1.282 \cdot 10^{-17}  -1.282 \cdot 10^{-17}$	0	$7.787 \cdot 10^{-19}  7.787 \cdot 10^{-19} \qquad 0$
$s\bar{s} \to s\bar{s}$	$8.695 \cdot 10^{-8}$ $8.695 \cdot 10^{-8}$	0	$6.738 \cdot 10^{-16}  6.738 \cdot 10^{-16} $
$t\bar{t} \to d\bar{d}$	$-2.079 \cdot 10^{-11}  -2.079 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}  6.323 \cdot 10^{-13}$
$t\bar{t} \to s\bar{s}$	$-8.322 \cdot 10^{-9}$ $-8.322 \cdot 10^{-9}$	0	$2.507 \cdot 10^{-10}  2.507 \cdot 10^{-10}$
$u\bar{d} \to u\bar{d}$	$1.31 \cdot 10^{-21}$ $1.31 \cdot 10^{-21}$	0	$7.991 \cdot 10^{-23}  7.991 \cdot 10^{-23}$

#### 2.30 cdWIm

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to W^+ \bar{t} b$	$-3.827 \cdot 10^{-7}$	$-3.827 \cdot 10^{-7}$	$3.334 \cdot 10^{-5}$	$4.463 \cdot 10^{-8}$	$4.463 \cdot 10^{-8}$	$6.675 \cdot 10^{-5}$	
$HH \to W^- u \bar{d}$	$4.553 \cdot 10^{-17}$	$4.553 \cdot 10^{-17}$	0	$1.908 \cdot 10^{-16}$	$1.908 \cdot 10^{-16}$	0	
$HH \to z\bar{b}b$	$2.62 \cdot 10^{-10}$	$2.62 \cdot 10^{-10}$	$3.336 \cdot 10^{-5}$	$2.017 \cdot 10^{-10}$	$2.017 \cdot 10^{-10}$	$6.672 \cdot 10^{-5}$	
$HH \to z d\bar{d}$	$9.095 \cdot 10^{-15}$	$9.095 \cdot 10^{-15}$	0	$2.3 \cdot 10^{-15}$	$2.3 \cdot 10^{-15}$	0	
$HW^+  o \gamma t \bar{b}$	$1.577 \cdot 10^{-11}$	$1.577 \cdot 10^{-11}$	$3.341 \cdot 10^{-5}$	$1.11 \cdot 10^{-9}$	$1.11 \cdot 10^{-9}$	$6.667 \cdot 10^{-5}$	
$HW^+  o \gamma u \bar{d}$	$-1.318 \cdot 10^{-17}$	$-1.318 \cdot 10^{-17}$	0	$2.553 \cdot 10^{-16}$	$2.553 \cdot 10^{-16}$	0	
$HW^+ \to u\bar{d}$	$7.487 \cdot 10^{-15}$	$7.487 \cdot 10^{-15}$	0	$1.474 \cdot 10^{-9}$	$1.474 \cdot 10^{-9}$	0	
$HW^-  o \bar{t}b$	$-3.272 \cdot 10^{-7}$	$-3.272 \cdot 10^{-7}$	$3.334 \cdot 10^{-5}$	0.0006449	0.0006448	$6.674 \cdot 10^{-5}$	
$H\gamma \to b\bar{b}$	$1.134 \cdot 10^{-24}$	$1.134 \cdot 10^{-24}$	$-3.175 \cdot 10^{-6}$	0.0003945	0.0003945	$6.674 \cdot 10^{-5}$	
$H\gamma \to d\bar{d}$	$2.958 \cdot 10^{-37}$	$2.958 \cdot 10^{-37}$	0	$4.541 \cdot 10^{-10}$	$4.541 \cdot 10^{-10}$	0	
$Hz \to b\bar{b}$	$1.237 \cdot 10^{-7}$	$1.237 \cdot 10^{-7}$	$3.331 \cdot 10^{-5}$	0.0004046	0.0004046	$6.673 \cdot 10^{-5}$	
$Hz \to s\bar{s}$	$5.024 \cdot 10^{-11}$	$5.024 \cdot 10^{-11}$	0	$2.826 \cdot 10^{-7}$	$2.826 \cdot 10^{-7}$	0	
$W^+W^- \to H b \bar b$	$-6.934 \cdot 10^{-9}$	$-6.934 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$4.653 \cdot 10^{-9}$	$4.653 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$	
$W^+W^-  o H c \bar c$	$-2.253 \cdot 10^{-14}$	$-2.253 \cdot 10^{-14}$	0	$5.39 \cdot 10^{-19}$	$5.39 \cdot 10^{-19}$	0	
$W^+W^-  o Hd\bar{d}$	$4.198 \cdot 10^{-15}$	$4.198 \cdot 10^{-15}$	0	$3.386 \cdot 10^{-15}$	$3.386 \cdot 10^{-15}$	0	
$W^+W^-  o H t \bar t$	$6.706 \cdot 10^{-11}$	$6.706 \cdot 10^{-11}$	$3.337 \cdot 10^{-5}$	$9.744 \cdot 10^{-12}$	$9.744 \cdot 10^{-12}$	$6.674 \cdot 10^{-5}$	
$\bar{b}t \to \bar{d}u$	$-9.796 \cdot 10^{-21}$	$-9.39 \cdot 10^{-21}$	0.04142	$3.395 \cdot 10^{-6}$	$3.395 \cdot 10^{-6}$	$6.672 \cdot 10^{-5}$	

$b\bar{b}  o \gamma \gamma$	$-6.907 \cdot 10^{-25}$	$-5.604 \cdot 10^{-24}$	-7.113	$3.563 \cdot 10^{-7}$	$3.562 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$
$b\bar{b} \to \mu^+\mu^-$	$8.62 \cdot 10^{-23}$	$8.62 \cdot 10^{-23}$	$6.248 \cdot 10^{-5}$	$9.119 \cdot 10^{-7}$	$9.118 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
$b\bar{b}  o  u_e \bar{\nu}_e$	$-3.722 \cdot 10^{-22}$	$-3.722 \cdot 10^{-22}$	$3.858 \cdot 10^{-5}$	$9.857 \cdot 10^{-7}$	$9.856 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$b\bar{b}  o b\bar{b}$	$1.305 \cdot 10^{-20}$	$1.325 \cdot 10^{-20}$	-0.01559	$9.022 \cdot 10^{-5}$	$9.022 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to d\bar{d}$	$1.084 \cdot 10^{-21}$	$1.084 \cdot 10^{-21}$	$2.767 \cdot 10^{-7}$	$2.593 \cdot 10^{-6}$	$2.593 \cdot 10^{-6}$	$6.675 \cdot 10^{-5}$
$b\bar{b} \to t\bar{t}$	$-1.862 \cdot 10^{-20}$	$-7\cdot 10^{-21}$	0.624	0.0002323	0.0002323	$6.676 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$5.004 \cdot 10^{-22}$	$5.004 \cdot 10^{-22}$	$3.731 \cdot 10^{-5}$	$3.701 \cdot 10^{-7}$	$3.7\cdot10^{-7}$	$6.675 \cdot 10^{-5}$
$b\bar{t} \to e^- \bar{\nu}_e$	$-2.243 \cdot 10^{-21}$	$-2.207 \cdot 10^{-21}$	0.01597	$2.555 \cdot 10^{-6}$	$2.555 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-5.851 \cdot 10^{-25}$	$-5.851 \cdot 10^{-25}$	0	$5.723 \cdot 10^{-10}$	$5.723 \cdot 10^{-10}$	0
$d\bar{d} \to c\bar{c}$	$-1.566 \cdot 10^{-27}$	$-1.566 \cdot 10^{-27}$	0	$2.243 \cdot 10^{-12}$	$2.243 \cdot 10^{-12}$	0
$d\bar{d} \to e^+e^-$	$-2.471 \cdot 10^{-28}$	$-2.471 \cdot 10^{-28}$	0	$1.537 \cdot 10^{-12}$	$1.537 \cdot 10^{-12}$	0
$d\bar{d} \to s\bar{s}$	$3.722 \cdot 10^{-26}$	$5.151 \cdot 10^{-26}$	-0.3841	$7.023 \cdot 10^{-10}$	$7.023 \cdot 10^{-10}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.005 \cdot 10^{-26}$	$9.005 \cdot 10^{-26}$	0	$4.931 \cdot 10^{-10}$	$4.931 \cdot 10^{-10}$	0
$s\bar{s} \to s\bar{s}$	$9.309 \cdot 10^{-23}$	$9.314 \cdot 10^{-23}$	-0.0004937	$2.25 \cdot 10^{-8}$	$2.25 \cdot 10^{-8}$	0
$t\bar{t} \to d\bar{d}$	$7.316 \cdot 10^{-27}$	$7.247 \cdot 10^{-27}$	0.009417	$1.322 \cdot 10^{-12}$	$1.322 \cdot 10^{-12}$	0
$t\bar{t} \to s\bar{s}$	$1.297 \cdot 10^{-23}$	$1.307 \cdot 10^{-23}$	-0.008127	$1.392 \cdot 10^{-9}$	$1.392 \cdot 10^{-9}$	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-5.281 \cdot 10^{-27}$	$-5.281 \cdot 10^{-27}$	0	$3.083 \cdot 10^{-12}$	$3.083 \cdot 10^{-12}$	0
$u\bar{d} \to c\bar{s}$	$1.747 \cdot 10^{-26}$	$1.747 \cdot 10^{-26}$	0	$2.541 \cdot 10^{-9}$	$2.541 \cdot 10^{-9}$	0
$u\bar{d} \to u\bar{d}$	$6.107 \cdot 10^{-27}$	$6.107 \cdot 10^{-27}$	$2.87 \cdot 10^{-5}$	$1.203 \cdot 10^{-11}$	$1.203 \cdot 10^{-11}$	0

## 2.31 cdWRe

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to W^+ \bar{t} b$	$2.402 \cdot 10^{-8}$	$2.402 \cdot 10^{-8}$	$3.335 \cdot 10^{-5}$	$9.463 \cdot 10^{-9}$	$9.462 \cdot 10^{-9}$	$6.673 \cdot 10^{-5}$
$HH \to W^- u \bar{d}$	$6.494 \cdot 10^{-16}$	$6.494 \cdot 10^{-16}$	0	$3.913 \cdot 10^{-15}$	$3.913 \cdot 10^{-15}$	0
$HH \to z\bar{b}b$	$-2.673 \cdot 10^{-9}$	$-2.673 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$9.814 \cdot 10^{-10}$	$9.813 \cdot 10^{-10}$	$6.674 \cdot 10^{-5}$
$HH \to z d\bar{d}$	$2.515 \cdot 10^{-15}$	$2.515 \cdot 10^{-15}$	0	$1.491 \cdot 10^{-15}$	$1.491 \cdot 10^{-15}$	0
$HW^+ \to \gamma t \bar{b}$	$-3.37 \cdot 10^{-9}$	$-3.37 \cdot 10^{-9}$	$3.335 \cdot 10^{-5}$	$3.769 \cdot 10^{-10}$	$3.768 \cdot 10^{-10}$	$6.674 \cdot 10^{-5}$

$HW^+ \to \gamma u \bar{d}$	$1.852 \cdot 10^{-16}$	$1.852 \cdot 10^{-16}$	0	$3.958 \cdot 10^{-15}$	$3.958 \cdot 10^{-15}$	0
$HW^+ \rightarrow u\bar{d}$	$-4.597 \cdot 10^{-11}$	$-4.597 \cdot 10^{-11}$	0	$1.335 \cdot 10^{-9}$	$1.335 \cdot 10^{-9}$	0
$HW^- \to \bar{t}b$	-0.0001139	-0.0001139	$3.344 \cdot 10^{-5}$	0.001254	0.001254	$6.673 \cdot 10^{-5}$
$H\gamma  o b\bar{b}$	$1.703 \cdot 10^{-7}$	$1.703 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$5.795 \cdot 10^{-5}$	$5.794 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$
$H\gamma \to d\bar{d}$	$4.498 \cdot 10^{-20}$	$4.498 \cdot 10^{-20}$	0	$4.26 \cdot 10^{-10}$	$4.26 \cdot 10^{-10}$	0
$Hz \to b\bar{b}$	$-3.05 \cdot 10^{-5}$	$-3.05 \cdot 10^{-5}$	$3.338 \cdot 10^{-5}$	0.000878	0.0008779	$6.673 \cdot 10^{-5}$
$Hz \to s\bar{s}$	$-1.512 \cdot 10^{-8}$	$-1.512 \cdot 10^{-8}$	0	$4.343 \cdot 10^{-7}$	$4.343 \cdot 10^{-7}$	0
$W^+W^-  o Hb\bar b$	$4.908 \cdot 10^{-10}$	$4.908 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$1.116 \cdot 10^{-9}$	$1.116 \cdot 10^{-9}$	$6.678 \cdot 10^{-5}$
$W^+W^-  o Hc\bar{c}$	$-2.526 \cdot 10^{-13}$	$-2.526 \cdot 10^{-13}$	0	$4.976 \cdot 10^{-19}$	$4.976 \cdot 10^{-19}$	0
$W^+W^-  o H d \bar d$	$-3.67 \cdot 10^{-17}$	$-3.67 \cdot 10^{-17}$	0	$1.721 \cdot 10^{-15}$	$1.721 \cdot 10^{-15}$	0
$W^+W^-  o H t \bar t$	$-2.22 \cdot 10^{-9}$	$-2.22 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$7.805 \cdot 10^{-12}$	$7.805 \cdot 10^{-12}$	$6.674 \cdot 10^{-5}$
$\bar{b}t \to \bar{d}u$	$-5.422 \cdot 10^{-6}$	$-5.422 \cdot 10^{-6}$	$3.336 \cdot 10^{-5}$	$7.554 \cdot 10^{-6}$	$7.554 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
$b\bar{b} \to \gamma \gamma$	$-1.033 \cdot 10^{-7}$	$-1.033 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$3.563 \cdot 10^{-7}$	$3.563 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to \mu^+ \mu^-$	$-4.727 \cdot 10^{-7}$	$-4.727 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$5.718 \cdot 10^{-7}$	$5.718 \cdot 10^{-7}$	$6.672 \cdot 10^{-5}$
$b\bar{b} \to \nu_e \bar{\nu}_e$	$-1.422 \cdot 10^{-7}$	$-1.422 \cdot 10^{-7}$	$3.333 \cdot 10^{-5}$	$8.637 \cdot 10^{-7}$	$8.636 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$b\bar{b}  o b\bar{b}$	0.0003579	0.0003579	$3.336 \cdot 10^{-5}$	0.0001516	0.0001516	$6.67 \cdot 10^{-5}$
$b\bar{b} \to d\bar{d}$	$-4.018 \cdot 10^{-7}$	$-4.018 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$1.769 \cdot 10^{-6}$	$1.769 \cdot 10^{-6}$	$6.677 \cdot 10^{-5}$
$b\bar{b} \to t\bar{t}$	$-7.493 \cdot 10^{-5}$	$-7.493 \cdot 10^{-5}$	$3.338 \cdot 10^{-5}$	$1.368 \cdot 10^{-5}$	$1.368 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-6.236 \cdot 10^{-7}$	$-6.236 \cdot 10^{-7}$	$3.337 \cdot 10^{-5}$	$9.664 \cdot 10^{-7}$	$9.664 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
$b\bar{t} \to e^- \bar{\nu}_e$	$-9.999 \cdot 10^{-7}$	$-9.999 \cdot 10^{-7}$	$3.336 \cdot 10^{-5}$	$2.191 \cdot 10^{-6}$	$2.191 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-1.282 \cdot 10^{-9}$	$-1.282 \cdot 10^{-9}$	0	$7.703 \cdot 10^{-10}$	$7.703 \cdot 10^{-10}$	0
$d\bar{d} \to c\bar{c}$	$-5.033 \cdot 10^{-12}$	$-5.033 \cdot 10^{-12}$	0	$2.285 \cdot 10^{-12}$	$2.285 \cdot 10^{-12}$	0
$d\bar{d} \rightarrow e^+e^-$	$-1.587 \cdot 10^{-12}$	$-1.587 \cdot 10^{-12}$	0	$7.872 \cdot 10^{-13}$	$7.872 \cdot 10^{-13}$	0
$d\bar{d} \to s\bar{s}$	$-7.734 \cdot 10^{-10}$	$-7.734 \cdot 10^{-10}$	0	$1.693 \cdot 10^{-9}$	$1.693 \cdot 10^{-9}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-8.108 \cdot 10^{-10}$	$-8.108 \cdot 10^{-10}$	0	$1.539 \cdot 10^{-10}$	$1.539 \cdot 10^{-10}$	0
$s\bar{s} \to s\bar{s}$	$1.807 \cdot 10^{-7}$	$1.807 \cdot 10^{-7}$	0	$7.594 \cdot 10^{-8}$	$7.594 \cdot 10^{-8}$	0
$t\bar{t} \to d\bar{d}$	$-7.299 \cdot 10^{-12}$	$-7.299 \cdot 10^{-12}$	0	$4.052 \cdot 10^{-12}$	$4.052 \cdot 10^{-12}$	0
$t\bar{t} \to s\bar{s}$	$1.67 \cdot 10^{-10}$	$1.67 \cdot 10^{-10}$	0	$1.651 \cdot 10^{-9}$	$1.651 \cdot 10^{-9}$	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-2.113 \cdot 10^{-12}$	$-2.113 \cdot 10^{-12}$	0	$3.088 \cdot 10^{-12}$	$3.088 \cdot 10^{-12}$	0

$u\bar{d} \to c\bar{s}$	$-3.065 \cdot 10^{-9}$	$-3.065 \cdot 10^{-9}$	0	$3.403 \cdot 10^{-9}$	$3.403 \cdot 10^{-9}$	0
$u\bar{d} \to u\bar{d}$	$2.332 \cdot 10^{-11}$	$2.332 \cdot 10^{-11}$	0	$1.913 \cdot 10^{-11}$	$1.913 \cdot 10^{-11}$	0

## 2.32 cdd

		interference			square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o b\bar{b}$	-3.485	-3.485	0	5.459	5.459	0	
$b\bar{b} \to d\bar{d}$	0.03433	0.03433	0	2.407	2.407	0	
$d\bar{d} \to s\bar{s}$	0.04558	0.04558	0	3.195	3.195	0	
$s\bar{s} \to s\bar{s}$	-0.6645	-0.6645	0	2.641	2.641	0	

#### 2.33 cdd1

		interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1			
$b\bar{b}  o b\bar{b}$	-3.485	-3.485	0	5.459	5.459	0			
$b\bar{b} \to d\bar{d}$	1.596	1.596	0	2.407	2.407	$4.155 \cdot 10^{-8}$			
$d\bar{d} \to s\bar{s}$	2.119	2.119	0	3.195	3.195	0			
$s\bar{s} \to s\bar{s}$	-0.6645	-0.6645	$-3.01 \cdot 10^{-8}$	2.641	2.641	$-7.572 \cdot 10^{-8}$			

## 2.34 ceBIm

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \rightarrow ze^+e^-$	$3.963 \cdot 10^{-20}$	$3.963 \cdot 10^{-20}$	0	$1.969 \cdot 10^{-18}$	$1.969 \cdot 10^{-18}$	0
$HW^-  o \gamma e^- \bar{\nu}_e$	$1.065 \cdot 10^{-20}$	$1.065 \cdot 10^{-20}$	0	$2.515 \cdot 10^{-20}$	$2.515 \cdot 10^{-20}$	0
$H\gamma \to e^+e^-$	$2.984 \cdot 10^{-29}$	$2.984 \cdot 10^{-29}$	0	$4.666 \cdot 10^{-12}$	$4.666 \cdot 10^{-12}$	0

$Hz \to \mu^+\mu^-$	$6.477 \cdot 10^{-12}$ $6.477 \cdot 10^{-12}$	0	$5.275 \cdot 10^{-8}$ $5.275 \cdot 10^{-8}$ 0
$\mu^+\mu^- \rightarrow \tau^+\tau^-$	$3.575 \cdot 10^{-23}$ $3.575 \cdot 10^{-23}$	0	$9.702 \cdot 10^{-7}$ $9.702 \cdot 10^{-7}$ 0
$b\bar{b} \to \mu^+ \mu^-$	$-1.228 \cdot 10^{-27}  -1.228 \cdot 10^{-27}$	0	$2.59 \cdot 10^{-11}$ $2.59 \cdot 10^{-11}$ 0
$c\bar{c} \to \mu^+ \mu^-$	$1.3 \cdot 10^{-26}$ $1.3 \cdot 10^{-26}$	0	$2.114 \cdot 10^{-10}  2.114 \cdot 10^{-10} \qquad 0$
$d\bar{d} \to e^+ e^-$	$2.214 \cdot 10^{-30} \qquad 2.214 \cdot 10^{-30}$	0	$2.925 \cdot 10^{-15}  2.925 \cdot 10^{-15} \qquad 0$
$e^+\nu_\mu \to e^+\nu_\mu$	$2.545 \cdot 10^{-28}$ $2.545 \cdot 10^{-28}$	0	$1.821 \cdot 10^{-13}  1.821 \cdot 10^{-13}$
$e^+\nu_e \to e^+\nu_e$	$-7.231 \cdot 10^{-27}  -7.231 \cdot 10^{-27}$	0	$5.472 \cdot 10^{-14}  5.472 \cdot 10^{-14} \qquad 0$
$e^+\tau^- \rightarrow e^+\tau^-$	$1.669 \cdot 10^{-16}$ $1.669 \cdot 10^{-16}$	0	$3.108 \cdot 10^{-7}$ $3.108 \cdot 10^{-7}$ 0
$e^+e^-  o \mu^+\mu^-$	$-1.856 \cdot 10^{-26}  -1.856 \cdot 10^{-26}$	0	$2.01 \cdot 10^{-9} \qquad 2.01 \cdot 10^{-9} \qquad 0$
$e^+e^- \rightarrow e^+e^-$	$1.489 \cdot 10^{-28}$ $1.489 \cdot 10^{-28}$	0	$1.264 \cdot 10^{-11}  1.264 \cdot 10^{-11} \qquad 0$
$t\bar{t} \to \tau^+ \tau^-$	$-5.999 \cdot 10^{-23}  -5.999 \cdot 10^{-23}$	0	$9.731 \cdot 10^{-8}  9.731 \cdot 10^{-8}$

# 2.35 ceBRe

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to ze^+e^-$	$-2.346 \cdot 10^{-19}$	$-2.346 \cdot 10^{-19}$	0	$2.655 \cdot 10^{-19}$	$2.655 \cdot 10^{-19}$	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-1.767 \cdot 10^{-18}$	$-1.767 \cdot 10^{-18}$	0	$1.942 \cdot 10^{-17}$	$1.942 \cdot 10^{-17}$	0	
$H\gamma \to e^+e^-$	$2.895 \cdot 10^{-23}$	$2.895 \cdot 10^{-23}$	0	$6.317 \cdot 10^{-12}$	$6.317 \cdot 10^{-12}$	0	
$Hz \to \mu^+\mu^-$	$-3.428 \cdot 10^{-10}$	$-3.428 \cdot 10^{-10}$	0	$4.319 \cdot 10^{-8}$	$4.319 \cdot 10^{-8}$	0	
$\mu^+\mu^- \to \tau^+\tau^-$	$1.688 \cdot 10^{-6}$	$1.688 \cdot 10^{-6}$	0	$3.968 \cdot 10^{-7}$	$3.968 \cdot 10^{-7}$	0	
$b\bar{b}  o \mu^+\mu^-$	$1.321 \cdot 10^{-11}$	$1.321 \cdot 10^{-11}$	0	$9.891 \cdot 10^{-11}$	$9.891 \cdot 10^{-11}$	0	
$c\bar{c} \to \mu^+ \mu^-$	$4.177 \cdot 10^{-10}$	$4.177 \cdot 10^{-10}$	0	$2.492 \cdot 10^{-10}$	$2.492 \cdot 10^{-10}$	0	
$d\bar{d} \rightarrow e^+e^-$	$1.202 \cdot 10^{-15}$	$1.202 \cdot 10^{-15}$	0	$3.125 \cdot 10^{-15}$	$3.125 \cdot 10^{-15}$	0	
$e^+\nu_\mu \to e^+\nu_\mu$	$7.789 \cdot 10^{-14}$	$7.789 \cdot 10^{-14}$	0	$7.144 \cdot 10^{-14}$	$7.144 \cdot 10^{-14}$	0	
$e^+\nu_e \to e^+\nu_e$	$1.381 \cdot 10^{-13}$	$1.381 \cdot 10^{-13}$	0	$9.089 \cdot 10^{-14}$	$9.089 \cdot 10^{-14}$	0	
$e^+\tau^- \to e^+\tau^-$	$-3.051 \cdot 10^{-6}$	$-3.051 \cdot 10^{-6}$	0	$1.817 \cdot 10^{-5}$	$1.817 \cdot 10^{-5}$	0	
$e^+e^-  o \mu^+\mu^-$	$5.16 \cdot 10^{-9}$	$5.16 \cdot 10^{-9}$	0	$3.267 \cdot 10^{-9}$	$3.267 \cdot 10^{-9}$	0	
$e^+e^- \rightarrow e^+e^-$	$3.554 \cdot 10^{-13}$	$3.554 \cdot 10^{-13}$	0	$8.883 \cdot 10^{-13}$	$8.883 \cdot 10^{-13}$	0	

 $t\bar{t} \to \tau^+ \tau^ -3.021 \cdot 10^{-7}$   $-3.021 \cdot 10^{-7}$  0  $3.481 \cdot 10^{-8}$   $3.481 \cdot 10^{-8}$  0

### 2.36 ceHIm

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH  o H  au^+  au^-$	$1.188 \cdot 10^{-13}$	$1.188 \cdot 10^{-13}$	0	$1.384 \cdot 10^{-10}$	$1.384 \cdot 10^{-10}$	0
$HH \to W^+ e^- \bar{\nu}_e$	$6.567 \cdot 10^{-18}$	$6.567 \cdot 10^{-18}$	0	$1.459 \cdot 10^{-17}$	$1.459 \cdot 10^{-17}$	0
$HH \rightarrow ze^+e^-$	$-1.279 \cdot 10^{-17}$	$-1.279 \cdot 10^{-17}$	0	$5.897 \cdot 10^{-18}$	$5.897 \cdot 10^{-18}$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-7.633 \cdot 10^{-20}$	$-7.633 \cdot 10^{-20}$	0	$3.013 \cdot 10^{-19}$	$3.013 \cdot 10^{-19}$	0
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$4.086 \cdot 10^{-11}$	$4.086 \cdot 10^{-11}$	0	$7.486 \cdot 10^{-9}$	$7.486 \cdot 10^{-9}$	0
$H\gamma \to e^+e^-$	$1.262 \cdot 10^{-29}$	$1.262 \cdot 10^{-29}$	0	$1.76 \cdot 10^{-14}$	$1.76 \cdot 10^{-14}$	0
$Hz \to \mu^+\mu^-$	$7.801 \cdot 10^{-16}$	$7.801 \cdot 10^{-16}$	0	$7.459 \cdot 10^{-9}$	$7.459 \cdot 10^{-9}$	0
$\mu^+\mu^- \to \tau^+\tau^-$	$-1.258 \cdot 10^{-28}$	$-1.258 \cdot 10^{-28}$	0	$7.277 \cdot 10^{-14}$	$7.277 \cdot 10^{-14}$	0
$b\bar{b} \to \mu^+ \mu^-$	$-1.034 \cdot 10^{-29}$	$-1.034 \cdot 10^{-29}$	0	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-1.238 \cdot 10^{-30}$	$-1.238 \cdot 10^{-30}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
$d\bar{d} \to e^+e^-$	$1.131 \cdot 10^{-38}$	$1.131 \cdot 10^{-38}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
$e^+\tau^- \to e^+\tau^-$	$-7.704 \cdot 10^{-28}$	$-7.704 \cdot 10^{-28}$	0	$1.595 \cdot 10^{-18}$	$1.595 \cdot 10^{-18}$	0
$e^+e^- \to \mu^+\mu^-$	$4.701 \cdot 10^{-36}$	$4.701 \cdot 10^{-36}$	0	$6.017 \cdot 10^{-21}$	$6.017 \cdot 10^{-21}$	0
$e^+e^- \rightarrow e^+e^-$	$-4.464 \cdot 10^{-29}$	$-4.464 \cdot 10^{-29}$	0	$4.385 \cdot 10^{-25}$	$4.385 \cdot 10^{-25}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-1.093 \cdot 10^{-22}$	$-1.093 \cdot 10^{-22}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	0

### 2.37 ceHRe

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to H \tau^+ \tau^-$	$-2.617 \cdot 10^{-10}$	$-2.617 \cdot 10^{-10}$	0	$9.818 \cdot 10^{-11}$	$9.818 \cdot 10^{-11}$	0		
$HH \to W^+ e^- \bar{\nu}_e$	$-1.953 \cdot 10^{-17}$	$-1.953 \cdot 10^{-17}$	0	$5.641 \cdot 10^{-18}$	$5.641 \cdot 10^{-18}$	0		
$HH \to ze^+e^-$	$2.38 \cdot 10^{-18}$	$2.38 \cdot 10^{-18}$	0	$1.018 \cdot 10^{-18}$	$1.018 \cdot 10^{-18}$	0		

$HW^- \to \gamma e^- \bar{\nu}_e$	$2.669 \cdot 10^{-19}$ $2.669 \cdot 10^{-19}$	0	$5.36 \cdot 10^{-21}$	$5.36 \cdot 10^{-21}$	0
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$-1.383 \cdot 10^{-8}$ $-1.383 \cdot 10^{-8}$	8 0	$7.982 \cdot 10^{-9}$	$7.982 \cdot 10^{-9}$	0
$H\gamma \to e^+e^-$	$-4.289 \cdot 10^{-13}  -4.289 \cdot 10^{-1}$	.3 0	$1.3 \cdot 10^{-14}$	$1.3 \cdot 10^{-14}$	0
$Hz  o \mu^+\mu^-$	$5.701 \cdot 10^{-10}$ $5.701 \cdot 10^{-10}$	0	$7.491 \cdot 10^{-9}$	$7.491 \cdot 10^{-9}$	0
$\mu^+\mu^- \to \tau^+\tau^-$	$-2.445 \cdot 10^{-12}  -2.445 \cdot 10^{-1}$	0 - 2	$1.455 \cdot 10^{-13}$	$1.455 \cdot 10^{-13}$	0
$b\bar{b} \to \mu^+ \mu^-$	$-2.223 \cdot 10^{-12}  -2.223 \cdot 10^{-1}$	0 - 2	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-2.065 \cdot 10^{-13}  -2.065 \cdot 10^{-1}$	.3 0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
$d\bar{d} \to e^+e^-$	$-6.46 \cdot 10^{-23}$ $-6.46 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
$e^+\tau^- \to e^+\tau^-$	$-1.123 \cdot 10^{-16}  -1.123 \cdot 10^{-1}$	0	$2.795 \cdot 10^{-18}$	$2.795 \cdot 10^{-18}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	$-1.999 \cdot 10^{-19}  -1.999 \cdot 10^{-1}$	.9 0	$1.203 \cdot 10^{-20}$	$1.203 \cdot 10^{-20}$	0
$e^+e^- \rightarrow e^+e^-$	$1.449 \cdot 10^{-13}$ $1.449 \cdot 10^{-13}$	0	$8.129 \cdot 10^{-25}$	$8.129 \cdot 10^{-25}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-9.92 \cdot 10^{-7}$ $-9.92 \cdot 10^{-7}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	0

## 2.38 ceWIm

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to W^+ e^- \bar{\nu}_e$	$-2.657 \cdot 10^{-17}$	$-2.657 \cdot 10^{-17}$	0	$4.483 \cdot 10^{-17}$	$4.483 \cdot 10^{-17}$	0	
$HH \rightarrow ze^+e^-$	$7.179 \cdot 10^{-20}$	$7.179 \cdot 10^{-20}$	0	$6.463 \cdot 10^{-18}$	$6.463 \cdot 10^{-18}$	0	
$HW^-  o \gamma e^- \bar{\nu}_e$	$-3.839 \cdot 10^{-19}$	$-3.839 \cdot 10^{-19}$	0	$1.643 \cdot 10^{-18}$	$1.643 \cdot 10^{-18}$	0	
$HW^-  o \mu^- \bar{\nu}_{\mu}$	$9.275 \cdot 10^{-12}$	$9.275 \cdot 10^{-12}$	0	$2.174 \cdot 10^{-7}$	$2.174 \cdot 10^{-7}$	0	
$H\gamma \rightarrow e^+e^-$	$-1.647 \cdot 10^{-29}$	$-1.647 \cdot 10^{-29}$	0	$1.422 \cdot 10^{-12}$	$1.422 \cdot 10^{-12}$	0	
$Hz \to \mu^+\mu^-$	$1.173 \cdot 10^{-11}$	$1.173 \cdot 10^{-11}$	0	$1.731 \cdot 10^{-7}$	$1.731 \cdot 10^{-7}$	0	
$\mu^+\mu^- \rightarrow \tau^+\tau^-$	$-2.727 \cdot 10^{-23}$	$-2.727 \cdot 10^{-23}$	0	$6.416 \cdot 10^{-7}$	$6.416 \cdot 10^{-7}$	0	
$b\bar{b}  o \mu^+\mu^-$	$-1.767 \cdot 10^{-27}$	$-1.767 \cdot 10^{-27}$	0	$1.534 \cdot 10^{-10}$	$1.534 \cdot 10^{-10}$	0	
$b\bar{t} \rightarrow e^- \bar{\nu}_e$	$-1.045 \cdot 10^{-28}$	$-1.045 \cdot 10^{-28}$	0	$6.82 \cdot 10^{-15}$	$6.82 \cdot 10^{-15}$	0	
$c\bar{c} \to \mu^+ \mu^-$	$-3.234 \cdot 10^{-26}$	$-3.234 \cdot 10^{-26}$	0	$3.709 \cdot 10^{-10}$	$3.709 \cdot 10^{-10}$	0	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$9.403 \cdot 10^{-23}$	$9.403 \cdot 10^{-23}$	0	$1.648 \cdot 10^{-7}$	$1.648 \cdot 10^{-7}$	0	
$d\bar{d} \to e^+e^-$	$3.729 \cdot 10^{-30}$	$3.729 \cdot 10^{-30}$	0	$1.732 \cdot 10^{-14}$	$1.732 \cdot 10^{-14}$	0	

$e^+\nu_\mu \to e^+\nu_\mu$	$4.74 \cdot 10^{-28}$	$4.74 \cdot 10^{-28}$	0	$5.974 \cdot 10^{-13}$	$5.974 \cdot 10^{-13}$	0
$e^+\nu_e \to \mu^+\nu_\mu$	$1.034 \cdot 10^{-25}$	$1.034 \cdot 10^{-25}$	0	$3.325 \cdot 10^{-9}$	$3.325 \cdot 10^{-9}$	0
$e^+\nu_e \to e^+\nu_e$	$-1.291 \cdot 10^{-26}$	$-1.291 \cdot 10^{-26}$	0	$2.131 \cdot 10^{-15}$	$2.131 \cdot 10^{-15}$	0
$e^+\tau^- \to e^+\tau^-$	$3.067 \cdot 10^{-16}$	$3.067 \cdot 10^{-16}$	0	$2.023 \cdot 10^{-7}$	$2.023 \cdot 10^{-7}$	0
$e^+e^- \to \mu^+\mu^-$	$-8.405 \cdot 10^{-26}$	$-8.405 \cdot 10^{-26}$	0	$1.329 \cdot 10^{-9}$	$1.329 \cdot 10^{-9}$	0
$e^+e^- \rightarrow e^+e^-$	$2.21 \cdot 10^{-28}$	$2.21 \cdot 10^{-28}$	0	$7.393 \cdot 10^{-12}$	$7.393 \cdot 10^{-12}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-2.654 \cdot 10^{-22}$	$-2.654 \cdot 10^{-22}$	0	$1.645 \cdot 10^{-7}$	$1.645 \cdot 10^{-7}$	0
$u\bar{d} \to \mu^+ \nu_\mu$	$5.733 \cdot 10^{-27}$	$5.733 \cdot 10^{-27}$	0	$1.224 \cdot 10^{-9}$	$1.224 \cdot 10^{-9}$	0

## 2.39 ceWRe

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to W^+ e^- \bar{\nu}_e$	$-5.361 \cdot 10^{-17}$	$-5.361 \cdot 10^{-17}$	0	$4.483 \cdot 10^{-17}$	$4.483 \cdot 10^{-17}$	0
$HH \rightarrow ze^+e^-$	$7.295 \cdot 10^{-19}$	$7.295 \cdot 10^{-19}$	0	$6.463 \cdot 10^{-18}$	$6.463 \cdot 10^{-18}$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-4.535 \cdot 10^{-22}$	$-4.535 \cdot 10^{-22}$	0	$1.643 \cdot 10^{-18}$	$1.643 \cdot 10^{-18}$	0
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$-7.968 \cdot 10^{-9}$	$-7.968 \cdot 10^{-9}$	0	$2.174 \cdot 10^{-7}$	$2.174 \cdot 10^{-7}$	0
$H\gamma \to e^+e^-$	$4.757 \cdot 10^{-24}$	$4.757 \cdot 10^{-24}$	0	$1.422 \cdot 10^{-12}$	$1.422 \cdot 10^{-12}$	0
$Hz \to \mu^+\mu^-$	$-6.21 \cdot 10^{-10}$	$-6.21 \cdot 10^{-10}$	0	$1.731 \cdot 10^{-7}$	$1.731 \cdot 10^{-7}$	0
$\mu^+\mu^-  o  au^+ au^-$	$-7.631 \cdot 10^{-7}$	$-7.631 \cdot 10^{-7}$	0	$6.416 \cdot 10^{-7}$	$6.416 \cdot 10^{-7}$	0
$b\bar{b} \to \mu^+ \mu^-$	$1.558 \cdot 10^{-10}$	$1.558 \cdot 10^{-10}$	0	$1.534 \cdot 10^{-10}$	$1.534 \cdot 10^{-10}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	$-5.362 \cdot 10^{-14}$	$-5.362 \cdot 10^{-14}$	0	$6.82 \cdot 10^{-15}$	$6.82 \cdot 10^{-15}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-1.001 \cdot 10^{-9}$	$-1.001 \cdot 10^{-9}$	0	$3.709 \cdot 10^{-10}$	$3.709 \cdot 10^{-10}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-5.218 \cdot 10^{-7}$	$-5.218 \cdot 10^{-7}$	0	$1.648 \cdot 10^{-7}$	$1.648 \cdot 10^{-7}$	0
$d\bar{d} \to e^+e^-$	$-4.878 \cdot 10^{-15}$	$-4.878 \cdot 10^{-15}$	0	$1.732 \cdot 10^{-14}$	$1.732 \cdot 10^{-14}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$2.934 \cdot 10^{-13}$	$2.934 \cdot 10^{-13}$	0	$5.974 \cdot 10^{-13}$	$5.974 \cdot 10^{-13}$	0
$e^+\nu_e \to \mu^+\nu_\mu$	$-1.392 \cdot 10^{-9}$	$-1.392 \cdot 10^{-9}$	0	$3.325 \cdot 10^{-9}$	$3.325 \cdot 10^{-9}$	0
$e^+\nu_e \to e^+\nu_e$	$-3.88 \cdot 10^{-14}$	$-3.88 \cdot 10^{-14}$	0	$2.131 \cdot 10^{-15}$	$2.131 \cdot 10^{-15}$	0
$e^+\tau^- \to e^+\tau^-$	$-4.814 \cdot 10^{-7}$	$-4.814 \cdot 10^{-7}$	0	$2.024 \cdot 10^{-7}$	$2.024 \cdot 10^{-7}$	0

$e^+e^- \rightarrow \mu^+\mu^-$	$-3.624 \cdot 10^{-9}$ $-3.624 \cdot 10^{-9}$	0	$1.329 \cdot 10^{-9}$ $1.329 \cdot 10^{-9}$ 0
$e^+e^- \rightarrow e^+e^-$	$4.785 \cdot 10^{-12}$ $4.785 \cdot 10^{-12}$	0	$7.393 \cdot 10^{-12}  7.393 \cdot 10^{-12} \qquad 0$
$t\bar{t} \to \tau^+ \tau^-$	$-4.932 \cdot 10^{-7}$ $-4.932 \cdot 10^{-7}$	0	$1.645 \cdot 10^{-7}$ $1.645 \cdot 10^{-7}$ 0
$u\bar{d} \rightarrow \mu^+ \nu_\mu$	$-5.375 \cdot 10^{-10}  -5.375 \cdot 10^{-10}$	0	$1.224 \cdot 10^{-9}$ $1.224 \cdot 10^{-9}$ 0

## 2.40 ced

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to \mu^+ \mu^-$	0.0005082	0.0005082	0	0.00594	0.00594	0	
$d\bar{d} \rightarrow e^+e^-$	0.02061	0.02061	0	0.2407	0.2407	0	

### **2.41** cee

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\mu^+\mu^- \to \tau^+\tau^-$	0.07944	0.07944	0	0.6187	0.6187	0	
$e^+\tau^- \to e^+\tau^-$	-0.00281	-0.00281	0	0.02041	0.02041	0	
$e^+e^- \rightarrow \mu^+\mu^-$	0.3548	0.3548	0	2.763	2.763	0	
$e^+e^- \rightarrow e^+e^-$	-15.33	-15.33	0	14.3	14.3	0	

### 2.42 ceu

		rference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
$c\bar{c} \to \mu^+ \mu^-$	-0.04265	-0.04265	0	0.2491	0.2491	0
$t\bar{t} \to \tau^+ \tau^-$	-0.004189	-0.004189	0	0.02203	0.02203	0

## 2.43 cld

		interf	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o \mu^+\mu^-$	0.01064	0.01064	0	0.2503	0.2503	0		
$b\bar{b}  o  u_e \bar{ u}_e$	0.008663	0.008663	0	0.2011	0.2011	0		
$d\bar{d} \rightarrow e^+e^-$	0.0003196	0.0003196	0	0.007516	0.007516	0		
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$6.423 \cdot 10^{-5}$	$6.423 \cdot 10^{-5}$	0	0.001491	0.001491	0		

## 2.44 cle

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$\mu^+\mu^- \to \tau^+\tau^-$	0.1088	0.1088	0	0.8527	0.8527	0	
$e^+\nu_\mu \to e^+\nu_\mu$	-6.826	-6.826	0	1	1	0	
$e^+\nu_e \to e^+\nu_e$	-0.445	-0.445	0	1	1	0	
$e^+\tau^- \to e^+\tau^-$	-0.5284	-0.5284	0	2	2	0	
$e^+e^- \to \mu^+\mu^-$	0.07313	0.07313	0	0.5733	0.5733	0	
$e^+e^- \rightarrow e^+e^-$	-0.9562	-0.9562	0	2.143	2.143	0	

## 2.45 cledqIm

		interfere	ence	square	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-$	mod2/mod1			
$b\bar{b} \to \mu^+ \mu^-$	$9.053 \cdot 10^{-29}$	$1.803 \cdot 10^{-28}$	-0.9914	$3.539 \cdot 10^{-11}  3.538 \cdot 10^{-11}  6.9$	$672 \cdot 10^{-5}$			
$b\bar{t} \to e^- \bar{\nu}_e$	$-1.427 \cdot 10^{-19}$	$-1.427 \cdot 10^{-19}$	$3.335 \cdot 10^{-5}$	$4.138 \cdot 10^{-16}  4.138 \cdot 10^{-16}  6.4$	$672 \cdot 10^{-5}$			
$c\bar{s} \to \tau^+ \nu_{\tau}$	$8.338 \cdot 10^{-16}$	$8.338 \cdot 10^{-16}$	0	$2.477 \cdot 10^{-12}  2.477 \cdot 10^{-12}$	0			
$d\bar{d} \to e^+e^-$	$4.175 \cdot 10^{-38}$	$4.175 \cdot 10^{-38}$	0	$1.033 \cdot 10^{-21}  1.033 \cdot 10^{-21}$	0			
$u\bar{d} \to \mu^+ \nu_\mu$	$7.395 \cdot 10^{-21}$	$7.395 \cdot 10^{-21}$	0	$2.208 \cdot 10^{-17}  2.208 \cdot 10^{-17}$	0			

## 2.46 cledqRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to \mu^+\mu^-$	$-7.111 \cdot 10^{-11}$	$-7.111 \cdot 10^{-11}$	$3.337 \cdot 10^{-5}$	$3.539 \cdot 10^{-11}$	$3.538 \cdot 10^{-11}$	$6.672 \cdot 10^{-5}$		
$b\bar{t} \to e^- \bar{\nu}_e$	$-8.501 \cdot 10^{-16}$	$-8.501 \cdot 10^{-16}$	$3.336 \cdot 10^{-5}$	$4.138 \cdot 10^{-16}$	$4.138 \cdot 10^{-16}$	$6.674 \cdot 10^{-5}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-4.973 \cdot 10^{-12}$	$-4.973 \cdot 10^{-12}$	0	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	0		
$d\bar{d} \rightarrow e^+e^-$	$-2.088 \cdot 10^{-21}$	$-2.088 \cdot 10^{-21}$	0	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	0		
$u\bar{d} \rightarrow \mu^+ \nu_\mu$	$-4.418 \cdot 10^{-17}$	$-4.418 \cdot 10^{-17}$	0	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	0		

## 2.47 clequ1Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{t} \to e^- \bar{\nu}_e$	$2.369 \cdot 10^{-16}$	$2.369 \cdot 10^{-16}$	0	$7.068 \cdot 10^{-13}$	$7.068 \cdot 10^{-13}$	$7.074 \cdot 10^{-8}$		
$c\bar{c} \to \mu^+ \mu^-$	$-8.78 \cdot 10^{-29}$	$-8.78 \cdot 10^{-29}$	0	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	0		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-1.54 \cdot 10^{-13}$	$-1.54 \cdot 10^{-13}$	0	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	0		
$t\bar{t} \to \tau^+ \tau^-$	$-7.419 \cdot 10^{-22}$	$1.195 \cdot 10^{-23}$	1.016	$1.711 \cdot 10^{-5}$	$1.711 \cdot 10^{-5}$	$5.844 \cdot 10^{-8}$		
$u\bar{d} \rightarrow \mu^+ \nu_{\mu}$	$-1.583 \cdot 10^{-21}$	$-1.583 \cdot 10^{-21}$	0	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	0		

## 2.48 clequ1Re

		interfe	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{t} \to e^- \bar{\nu}_e$	$1.422 \cdot 10^{-12}$	$1.422 \cdot 10^{-12}$	$7.032 \cdot 10^{-8}$	$7.068 \cdot 10^{-13}$	$7.068 \cdot 10^{-13}$	$5.659 \cdot 10^{-8}$		
$c\bar{c} \to \mu^+ \mu^-$	$6.546 \cdot 10^{-12}$	$6.546 \cdot 10^{-12}$	0	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	0		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$9.191 \cdot 10^{-10}$	$9.191 \cdot 10^{-10}$	0	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	0		
$t\bar{t} \to \tau^+ \tau^-$	$3.409 \cdot 10^{-5}$	$3.409 \cdot 10^{-5}$	$2.933 \cdot 10^{-8}$	$1.711 \cdot 10^{-5}$	$1.711 \cdot 10^{-5}$	$5.844 \cdot 10^{-8}$		
$u\bar{d} \to \mu^+ \nu_\mu$	$9.477 \cdot 10^{-18}$	$9.477 \cdot 10^{-18}$	0	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	0		

## 2.49 clequ3 Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{t} \to e^- \bar{\nu}_e$	$7.603 \cdot 10^{-17}$	$7.603 \cdot 10^{-17}$	$3.946 \cdot 10^{-8}$	$3.797 \cdot 10^{-13}$	$3.797 \cdot 10^{-13}$	$5.268 \cdot 10^{-8}$		
$c\bar{c} \to \mu^+ \mu^-$	$-1.317 \cdot 10^{-27}$	$-1.317 \cdot 10^{-27}$	0	$2.34 \cdot 10^{-11}$	$2.34 \cdot 10^{-11}$	0		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$4.346 \cdot 10^{-13}$	$4.346 \cdot 10^{-13}$	0	$3.946 \cdot 10^{-9}$	$3.946 \cdot 10^{-9}$	0		
$t\bar{t} \to \tau^+ \tau^-$	$-8.641 \cdot 10^{-21}$	$4.971 \cdot 10^{-21}$	1.575	0.000223	0.000223	$4.483 \cdot 10^{-8}$		
$u\bar{d} \rightarrow \mu^+ \nu_\mu$	$-5.275 \cdot 10^{-22}$	$-5.275 \cdot 10^{-22}$	0	$3.185 \cdot 10^{-19}$	$3.185 \cdot 10^{-19}$	0		

## 2.50 clequ3Re

		interfer	rence	square	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	${\tt mod1} \hspace{1.5cm} {\tt mod2} \hspace{1.5cm} 1-{\tt mod}$	12/mod1			
$b \bar t  o e^- \bar  u_e$	$4.538 \cdot 10^{-13}$	$4.538 \cdot 10^{-13}$	$2.203 \cdot 10^{-8}$	$3.797 \cdot 10^{-13}  3.797 \cdot 10^{-13}  5.268$	$\cdot 10^{-8}$			
$c\bar{c} \to \mu^+ \mu^-$	$1.811 \cdot 10^{-11}$	$1.811 \cdot 10^{-11}$	0	$2.34 \cdot 10^{-11}$ $2.34 \cdot 10^{-11}$	)			
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-2.595 \cdot 10^{-9}$	$-2.595 \cdot 10^{-9}$	0	$3.946 \cdot 10^{-9}$ $3.946 \cdot 10^{-9}$	)			
$t\bar{t} \to \tau^+ \tau^-$	-0.0001172	-0.0001172	0	$0.000223 \qquad 0.000223 \qquad 4.483$	$\cdot 10^{-8}$			
$u\bar{d} \rightarrow \mu^+ \nu_\mu$	$3.149 \cdot 10^{-18}$	$3.149 \cdot 10^{-18}$	0	$3.185 \cdot 10^{-19}  3.185 \cdot 10^{-19}$	)			

### 2.51 cll

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\mu^+\mu^- \to \tau^+\tau^-$	0.436	0.436	0	3.171	3.171	0	
$\nu_{\tau}\bar{\nu}_{\tau} \to \nu_{\tau}\bar{\nu}_{\tau}$	-0.01152	-0.01152	0	0.6949	0.6949	0	
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	0.1975	0.1975	0	1.428	1.428	0	
$e^+\nu_\mu \to e^+\nu_\mu$	0.1667	0.1667	0	1.103	1.103	0	
$e^+\nu_e \to e^+\nu_e$	0.5274	0.5274	0	1.372	1.372	0	

$e^+\tau^- \to e^+\tau^-$	-2.006	-2.006	0	2.682	2.682	0
$e^+e^-  o \mu^+\mu^-$	0.2311	0.2311	0	1.681	1.681	0
$e^+e^- \rightarrow e^+e^-$	-0.05204	-0.05204	0	1.638	1.638	0

## 2.52 cll1

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to HH$	0.01451	0.01451	0	0.0004399	0.0004399	0	
$HH \to HHH$	$8.124 \cdot 10^{-9}$	$8.124 \cdot 10^{-9}$	0	$3.694 \cdot 10^{-10}$	$3.694 \cdot 10^{-10}$	0	
$HH \to H \tau^+ \tau^-$	$5.864 \cdot 10^{-12}$	$5.864 \cdot 10^{-12}$	0	$2.666 \cdot 10^{-13}$	$2.666 \cdot 10^{-13}$	0	
$HH  o Hbar{b}$	$4.508 \cdot 10^{-11}$	$4.508 \cdot 10^{-11}$	0	$2.05 \cdot 10^{-12}$	$2.05 \cdot 10^{-12}$	0	
$HH \to H s \bar{s}$	$4.02 \cdot 10^{-14}$	$4.02 \cdot 10^{-14}$	0	$1.828 \cdot 10^{-15}$	$1.828 \cdot 10^{-15}$	0	
$HH  o Htar{t}$	$7.481 \cdot 10^{-6}$	$7.481 \cdot 10^{-6}$	0	$3.402 \cdot 10^{-7}$	$3.402 \cdot 10^{-7}$	0	
$HH \to Hu\bar{u}$	$1.339 \cdot 10^{-16}$	$1.339 \cdot 10^{-16}$	0	$6.087 \cdot 10^{-18}$	$6.087 \cdot 10^{-18}$	0	
$HH \to Hzz$	$1.904 \cdot 10^{-6}$	$1.904 \cdot 10^{-6}$	0	$8.656 \cdot 10^{-8}$	$8.656 \cdot 10^{-8}$	0	
$HH  o W^+W^-$	-0.3234	-0.3234	0	0.1547	0.1547	0	
$HH  o W^+W^-\gamma$	$3.048 \cdot 10^{-6}$	$3.048 \cdot 10^{-6}$	0	$2.09 \cdot 10^{-6}$	$2.09 \cdot 10^{-6}$	0	
$HH  o W^+ \bar{t} b$	$-8.122 \cdot 10^{-7}$	$-8.122 \cdot 10^{-7}$	0	$1.966 \cdot 10^{-6}$	$1.966 \cdot 10^{-6}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$5.543 \cdot 10^{-9}$	$5.543 \cdot 10^{-9}$	0	$1.487 \cdot 10^{-9}$	$1.487 \cdot 10^{-9}$	0	
$HH \to W^- u \bar{d}$	$3.039 \cdot 10^{-7}$	$3.039 \cdot 10^{-7}$	0	$3.599 \cdot 10^{-8}$	$3.599 \cdot 10^{-8}$	0	
$HH  o z \bar{b} b$	$1.868 \cdot 10^{-7}$	$1.868 \cdot 10^{-7}$	0	$9.998 \cdot 10^{-9}$	$9.998 \cdot 10^{-9}$	0	
$HH \to z \nu_e \bar{\nu}_e$	$3.369 \cdot 10^{-8}$	$3.369 \cdot 10^{-8}$	0	$1.532 \cdot 10^{-9}$	$1.532 \cdot 10^{-9}$	0	
$HH \to zc\bar{c}$	$7.016 \cdot 10^{-8}$	$7.016 \cdot 10^{-8}$	0	$4.55 \cdot 10^{-9}$	$4.55\cdot 10^{-9}$	0	
$HH \to z d\bar{d}$	$5.329 \cdot 10^{-8}$	$5.329 \cdot 10^{-8}$	0	$2.848 \cdot 10^{-9}$	$2.848 \cdot 10^{-9}$	0	
$HH \rightarrow ze^+e^-$	$2.43 \cdot 10^{-8}$	$2.43 \cdot 10^{-8}$	0	$2 \cdot 10^{-9}$	$2 \cdot 10^{-9}$	0	
$HH \to z t \bar{t}$	$2.122 \cdot 10^{-6}$	$2.122 \cdot 10^{-6}$	0	$1.034 \cdot 10^{-7}$	$1.034 \cdot 10^{-7}$	0	
$HH \rightarrow zz$	0.01765	0.01765	0	0.0005351	0.0005351	0	
$HW^+ \to \gamma t \bar{b}$	$7.112 \cdot 10^{-7}$	$7.112 \cdot 10^{-7}$	0	$3.461 \cdot 10^{-8}$	$3.461 \cdot 10^{-8}$	0	

$HW^+ \to \gamma u \bar{d}$	$9.331 \cdot 10^{-9}$	$9.331 \cdot 10^{-9}$	0	$4.688 \cdot 10^{-10}  4.688 \cdot 10^{-10}$	0
$HW^+  o u \bar d$	0.004084	0.004084	0	$0.0002052 \qquad 0.0002052$	0
$HW^- \to \bar{t}b$	0.1386	0.1386	0	$0.01721 \qquad  0.01721$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$1.013 \cdot 10^{-9}$	$1.013 \cdot 10^{-9}$	0	$5.091 \cdot 10^{-11}$ $5.091 \cdot 10^{-11}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$	0.00112	0.00112	0	$5.628 \cdot 10^{-5}$ $5.628 \cdot 10^{-5}$	0
$H\gamma  ightarrow bar{b}$	$3.192 \cdot 10^{-5}$	$3.192 \cdot 10^{-5}$	0	$4.838 \cdot 10^{-7}$ $4.838 \cdot 10^{-7}$	0
$H\gamma \to c\bar{c}$	$6.825 \cdot 10^{-6}$	$6.825 \cdot 10^{-6}$	0	$1.034 \cdot 10^{-7}$ $1.034 \cdot 10^{-7}$	0
$H\gamma \to d\bar{d}$	$6.759 \cdot 10^{-12}$	$6.759 \cdot 10^{-12}$	0	$1.024 \cdot 10^{-13}$ $1.024 \cdot 10^{-13}$	0
$H\gamma \to e^+e^-$	$3.257 \cdot 10^{-13}$	$3.257 \cdot 10^{-13}$	0	$4.936 \cdot 10^{-15}$ $4.936 \cdot 10^{-15}$	0
$H\gamma \to t\bar{t}$	0.02973	0.02973	0	$0.0004505 \qquad 0.0004505$	0
$Hz \to \mu^+\mu^-$	0.0003557	0.0003557	0	$2.947 \cdot 10^{-5}$ $2.947 \cdot 10^{-5}$	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.000747	0.000747	0	$2.264 \cdot 10^{-5}$ $2.264 \cdot 10^{-5}$	0
$Hz \to b\bar{b}$	0.002053	0.002053	0	$8.033 \cdot 10^{-5}$ $8.033 \cdot 10^{-5}$	0
$Hz \to s\bar{s}$	0.002055	0.002055	0	$8.009 \cdot 10^{-5}$ $8.009 \cdot 10^{-5}$	0
$Hz \to t\bar{t}$	0.3365	0.3365	0	$0.01153 \qquad 0.01153$	0
$Hz \to u\bar{u}$	0.001247	0.001247	0	$6.691 \cdot 10^{-5}$ $6.691 \cdot 10^{-5}$	0
$W^+W^- \to H b \bar b$	$4.564 \cdot 10^{-7}$	$4.564 \cdot 10^{-7}$	0	$5.14 \cdot 10^{-8}$ $5.14 \cdot 10^{-8}$	0
$W^+W^- \to H c \bar{c}$	$3.393 \cdot 10^{-7}$	$3.393 \cdot 10^{-7}$	0	$2.844 \cdot 10^{-8}$ $2.844 \cdot 10^{-8}$	0
$W^+W^-  o H d \bar d$	$1.495 \cdot 10^{-7}$	$1.495 \cdot 10^{-7}$	0	$1.301 \cdot 10^{-8}$ $1.301 \cdot 10^{-8}$	0
$W^+W^-  o Ht\bar{t}$	$2.505 \cdot 10^{-6}$	$2.505 \cdot 10^{-6}$	0	$2.546 \cdot 10^{-7}$ $2.546 \cdot 10^{-7}$	0
$W^+W^- \to W^+W^-$	1.03	1.03	0	$0.07258 \qquad 0.07258$	0
$\bar{b}t \to \bar{d}u$	0.002406	0.002406	0	$0.0001049 \qquad 0.0001049$	0
$\gamma W^+ \to z W^+$	0.03622	0.03622	0	0.00103 $0.00103$	0
$\mu^+\mu^- \to \tau^+\tau^-$	0.06622	0.06622	0	0.4858 $0.4858$	0
$\nu_{ au} \bar{\nu}_{ au}  ightarrow \nu_{ au} \bar{\nu}_{ au}$	-0.0173	-0.0173	0	0.8843 $0.8843$	0
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	0.1151	0.1151	0	0.8356 $0.8356$	0
$b\bar{b}  o \mu^+\mu^-$	$-2.167 \cdot 10^{-6}$	$-2.167 \cdot 10^{-6}$	0	$7.111 \cdot 10^{-7}$ $7.111 \cdot 10^{-7}$	0
$b\bar{b}  ightarrow  u_e \bar{ u}_e$	$2.978 \cdot 10^{-5}$	$2.978 \cdot 10^{-5}$	0	$1.398 \cdot 10^{-6}$ $1.398 \cdot 10^{-6}$	0
$bar{b}  o bar{ar{b}}$	-0.05231	-0.05231	0	$0.001612 \qquad 0.001612$	0

$b\bar{b}  o d\bar{d}$	$3.36 \cdot 10^{-5}$	$3.36 \cdot 10^{-5}$	0	$1.641 \cdot 10^{-6}$	$1.641 \cdot 10^{-6}$	0
$b\bar{b}  o t\bar{t}$	-0.004736	-0.004736	0	0.001982	0.001982	0
$b\bar{b} \to u\bar{u}$	$-2.795 \cdot 10^{-6}$	$-2.795 \cdot 10^{-6}$	0	$5.86 \cdot 10^{-7}$	$5.86 \cdot 10^{-7}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	0.0002344	0.0002344	0	$1.022 \cdot 10^{-5}$	$1.022 \cdot 10^{-5}$	0
$c\bar{c} \rightarrow \mu^+ \mu^-$	$-3.045 \cdot 10^{-5}$	$-3.045 \cdot 10^{-5}$	0	$6.482 \cdot 10^{-7}$	$6.482 \cdot 10^{-7}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0.001688	0.001688	0	$7.36 \cdot 10^{-5}$	$7.36 \cdot 10^{-5}$	0
$d\bar{d} \to c\bar{c}$	0.001367	0.001367	0	$6.436 \cdot 10^{-5}$	$6.436 \cdot 10^{-5}$	0
$d\bar{d} \to e^+e^-$	0.0004118	0.0004118	0	$2.218 \cdot 10^{-5}$	$2.218 \cdot 10^{-5}$	0
$d\bar{d}  o s\bar{s}$	0.0002483	0.0002483	0	$1.058 \cdot 10^{-5}$	$1.058 \cdot 10^{-5}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	3.45	3.45	0	0.2871	0.2871	0
$e^+\nu_e \to \mu^+\nu_\mu$	0.2449	0.2449	0	1.168	1.168	0
$e^+\nu_e \to e^+\nu_e$	0.9892	0.9892	0	2.188	2.188	0
$e^+\tau^- \to e^+\tau^-$	-0.2913	-0.2913	0	1.026	1.026	0
$e^+e^- \to \mu^+\mu^-$	0.1189	0.1189	0	0.8707	0.8707	0
$e^+e^- \rightarrow e^+e^-$	-1.596	-1.596	0	8.498	8.498	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.0006071	0.0006071	0	$2.329 \cdot 10^{-5}$	$2.329 \cdot 10^{-5}$	0
$s\bar{s} \to s\bar{s}$	-0.05245	-0.05245	0	0.00166	0.00166	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.0005582	0.0005582	0	$2.845 \cdot 10^{-5}$	$2.845 \cdot 10^{-5}$	0
$t\bar{t} \to \tau^+ \tau^-$	0.0004813	0.0004813	0	$2.4 \cdot 10^{-5}$	$2.4\cdot 10^{-5}$	0
$t\bar{t} \to c\bar{c}$	0.0006698	0.0006698	0	$3.147 \cdot 10^{-5}$	$3.147 \cdot 10^{-5}$	0
$t\bar{t} \to d\bar{d}$	0.0001986	0.0001986	0	$1.027 \cdot 10^{-5}$	$1.027 \cdot 10^{-5}$	0
$t\bar{t} \to s\bar{s}$	0.0008427	0.0008427	0	$4.028 \cdot 10^{-5}$	$4.028 \cdot 10^{-5}$	0
$t\bar{t} \to t\bar{t}$	-0.05363	-0.05363	0	0.003668	0.003668	0
$u\bar{d} \to \mu^+ \nu_\mu$	0.0007206	0.0007206	0	$3.142 \cdot 10^{-5}$	$3.142 \cdot 10^{-5}$	0
$u\bar{d} \to c\bar{s}$	0.003199	0.003199	0	0.0001395	0.0001395	0
$u\bar{d} \to u\bar{d}$	-0.003221	-0.003221	0	0.0001049	0.0001049	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.0005626	0.0005626	0	$2.815 \cdot 10^{-5}$	$2.815 \cdot 10^{-5}$	0
$u\bar{u} \to c\bar{c}$	0.0001117	0.0001117	0	$5.976 \cdot 10^{-6}$	$5.976 \cdot 10^{-6}$	0
$u\bar{u} \to u\bar{u}$	$-7.703 \cdot 10^{-5}$	$-7.703 \cdot 10^{-5}$	0	$7.912\cdot10^{-7}$	$7.912 \cdot 10^{-7}$	0

$zz \to W^+W^-$	6.181	6.181	0	0.2793	0.2793	0
$zz \to zz$	0.009872	0.009872	0	0.0002992	0.0002992	0

## $2.53 \quad {\rm clq} 1$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$b\bar{b}  o \mu^+\mu^-$	0.03617	0.03617	0	0.1905	0.1905	0	
$b\bar{b}  o  u_e \bar{ u}_e$	-0.005749	-0.005749	0	0.02462	0.02462	0	
$c\bar{c} \to \mu^+ \mu^-$	-0.002121	-0.002121	0	0.009125	0.009125	0	
$d\bar{d} \rightarrow e^+e^-$	0.01412	0.01412	0	0.07435	0.07435	0	
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	-0.04076	-0.04076	0	0.1745	0.1745	0	
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.04358	0.04358	0	0.2333	0.2333	0	
$t\bar{t} \to \tau^+ \tau^-$	-0.07071	-0.07071	0	0.3006	0.3006	0	
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.02231	0.02231	0	0.1171	0.1171	0	

# $2.54 \quad \text{clq3}$

		inte	rference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
$b\bar{b} \to \mu^+\mu^-$	0.001128	0.001128	0	0.00594	0.00594	0		
$b\bar{b}  o  u_e \bar{ u}_e$	0.003878	0.003878	0	0.01661	0.01661	0		
$b\bar{t} \to e^- \bar{\nu}_e$	0.02539	0.02539	0	0.12	0.12	0		
$c\bar{c} \to \mu^+ \mu^-$	0.0005095	0.0005095	0	0.002192	0.002192	0		
$c\bar{s} \to \tau^+ \nu_{\tau}$	0.1829	0.1829	0	0.8645	0.8645	0		
$d\bar{d} \rightarrow e^+e^-$	0.04572	0.04572	0	0.2407	0.2407	0		
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.06778	0.06778	0	0.2902	0.2902	0		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.05836	0.05836	0	0.3109	0.3109	0		
$t\bar{t} \to \tau^+ \tau^-$	0.06642	0.06642	0	0.2821	0.2821	0		

$u\bar{d} \to \mu^+ \nu_{\mu}$	0.07809	0.07809	0	0.3691	0.3691	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.05904	0.05904	0	0.31	0.31	0

## 2.55 clu

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$c\bar{c} \to \mu^+ \mu^-$	-0.0005207	-0.0005207	0	0.006121	0.006121	0		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.004585	-0.004585	0	0.07522	0.07522	0		
$t\bar{t} \to \tau^+ \tau^-$	-0.01924	-0.01924	0	0.199	0.199	0		
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.007063	-0.007063	0	0.08199	0.08199	0		

## 2.56 cqd1

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o b\bar{b}$	0.04643	0.04643	0	2.513	2.513	0		
$b\bar{b} \to d\bar{d}$	-0.002907	-0.002907	0	0.2002	0.2002	0		
$b\bar{b} \to t\bar{t}$	-0.009013	-0.009013	0	0.5117	0.5117	0		
$b\bar{b} \to u\bar{u}$	-0.002704	-0.002704	0	0.193	0.193	0		
$d\bar{d} \to c\bar{c}$	$-1.335 \cdot 10^{-6}$	$-1.335 \cdot 10^{-6}$	0	$8.883 \cdot 10^{-5}$	$8.883 \cdot 10^{-5}$	0		
$d\bar{d} \to s\bar{s}$	-0.01184	-0.01184	0	0.8142	0.8142	0		
$s\bar{s} \to s\bar{s}$	0.09025	0.09025	0	2.163	2.163	0		
$t\bar{t} \to d\bar{d}$	-0.002999	-0.002999	0	0.0926	0.0926	0		
$t\bar{t} \to s\bar{s}$	-0.013	-0.013	0	0.8076	0.8076	0		
$u\bar{d} \to u\bar{d}$	0.1323	0.1323	0	1	1	0		

# 2.57 cqd8

		ir	nterference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o b\bar{b}$	-7.666	-7.666	0	0.4574	0.4574	0		
$b\bar{b} \to d\bar{d}$	0.9795	0.9795	0	0.3306	0.3306	0		
$b\bar{b} \to t\bar{t}$	0.4423	0.4423	0	0.1427	0.1427	0		
$b\bar{b} \to u\bar{u}$	0.5697	0.5697	0	0.1923	0.1923	0		
$d\bar{d} \to c\bar{c}$	0.01363	0.01363	0	0.004598	0.004598	0		
$d\bar{d} \to s\bar{s}$	0.5484	0.5484	0	0.1851	0.1851	0		
$s\bar{s} \to s\bar{s}$	-7.764	-7.764	0	0.4571	0.4571	0		
$t\bar{t} \to d\bar{d}$	0.3359	0.3359	0	0.1067	0.1067	0		
$t\bar{t} \to s\bar{s}$	0.1024	0.1024	0	0.02794	0.02794	0		
$u\bar{d} \to u\bar{d}$	-1.056	-1.056	0	0.2222	0.2222	0		

## **2.58** cqe

		ference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o \mu^+\mu^-$	-0.0131	-0.0131	0	0.3003	0.3003	0	
$c\bar{c} \to \mu^+ \mu^-$	-0.000257	-0.000257	0	0.006121	0.006121	0	
$d\bar{d} \rightarrow e^+e^-$	-0.005756	-0.005756	0	0.132	0.132	0	
$t\bar{t} \to \tau^+ \tau^-$	-0.01006	-0.01006	0	0.199	0.199	0	

## $2.59 \quad \mathrm{cqq1}$

		ference	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$b\bar{b}  o b\bar{b}$	-10.62	-10.62	0	7.332	7.332	0
$b\bar{b} \to d\bar{d}$	0.008293	0.008293	0	0.07573	0.07573	0
$b\bar{b}  o t\bar{t}$	-0.05381	-0.05381	0	0.1579	0.1579	0

$b\bar{b} \to u\bar{u}$	-0.001997	-0.001997	0	0.01953	0.01953	0
$d\bar{d} \to c\bar{c}$	-0.2997	-0.2997	0	2.932	2.932	0
$d\bar{d} \to s\bar{s}$	0.0551	0.0551	0	0.5032	0.5032	0
$s\bar{s} \to s\bar{s}$	-10.83	-10.83	0	7.369	7.369	0
$t\bar{t} \to c\bar{c}$	0.1616	0.1616	0	1.465	1.465	0
$t\bar{t} \to d\bar{d}$	-0.04465	-0.04465	0	0.4538	0.4538	0
$t\bar{t} \to s\bar{s}$	-0.1847	-0.1847	0	1.824	1.824	0
$t\bar{t} \to t\bar{t}$	-0.2983	-0.2983	0	3.833	3.833	0
$u\bar{d} \to u\bar{d}$	0.1313	0.1313	0	0.5668	0.5668	0
$u\bar{u} \to c\bar{c}$	0.02955	0.02955	0	0.2705	0.2705	0
$u\bar{u} \to u\bar{u}$	-0.0002548	-0.0002548	0	0.01967	0.01967	0

# 2.60 cqq11

		interf	erence	square	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\mathtt{mod1}  \mathtt{mod2}  1 - \mathtt{mod2}/\mathtt{mod2}$	d1			
$\bar{b}t \to \bar{d}u$	0.0869	0.0869	$-9.206 \cdot 10^{-8}$	1.232   1.232   0				
$b\bar{b}  o b\bar{b}$	-10.62	-10.62	0	7.332   7.332   0				
$b\bar{b}  o d\bar{d}$	0.05268	0.05268	0	$0.07573  0.07573  -2.641 \cdot 10^{-}$	-8			
$b\bar{b}  o t\bar{t}$	-0.05381	-0.05381	0	0.1579  0.1579  0				
$d\bar{d} \to s\bar{s}$	0.3497	0.3497	$2.86 \cdot 10^{-8}$	$0.5032  0.5032  5.962 \cdot 10^{-8}$	3			
$s\bar{s} \to s\bar{s}$	-10.83	-10.83	0	7.369 7.369 $1.357 \cdot 10^{-7}$	7			
$t\bar{t} \to c\bar{c}$	1.097	1.097	0	$1.465   1.465   -6.828 \cdot 10^{-}$	-8			
$t\bar{t} \to t\bar{t}$	-0.2983	-0.2983	0	3.833   3.833   0				
$u\bar{d} \to c\bar{s}$	0.1156	0.1156	$1.731 \cdot 10^{-7}$	1.638 1.638 $6.104 \cdot 10^{-8}$	3			
$u\bar{d} \to u\bar{d}$	0.1313	0.1313	$-2.284 \cdot 10^{-7}$	$0.5668  0.5668  5.293 \cdot 10^{-8}$	3			
$u\bar{u} \to c\bar{c}$	0.188	0.188	0	$0.2705  0.2705  7.393 \cdot 10^{-8}$	3			
$u\bar{u} \to u\bar{u}$	-0.0002548	-0.0002548	$7.849 \cdot 10^{-8}$	$0.01967  0.01967  1.017 \cdot 10^{-7}$	7			

# 2.61 cqq3

		interf		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$\bar{b}t \to \bar{d}u$	0.5214	0.5214	0	4.928	4.928	0
$b\bar{b}  o b\bar{b}$	-10.62	-10.62	0	7.332	7.332	$6.819 \cdot 10^{-8}$
$b\bar{b}  o d\bar{d}$	0.008293	0.008293	0	0.07573	0.07573	0
$b\bar{b} \to t\bar{t}$	0.173	0.173	0	0.579	0.579	$-1.727 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	0.001997	0.001997	0	0.01953	0.01953	0
$d\bar{d} \to c\bar{c}$	0.2997	0.2997	0	2.932	2.932	0
$d\bar{d}  o s\bar{s}$	0.0551	0.0551	0	0.5032	0.5032	0
$s\bar{s} \to s\bar{s}$	-10.83	-10.83	0	7.369	7.369	0
$t\bar{t} \to c\bar{c}$	0.1616	0.1616	0	1.465	1.465	0
$t\bar{t} \to d\bar{d}$	0.04465	0.04465	0	0.4538	0.4538	0
$t\bar{t} \to s\bar{s}$	0.1847	0.1847	0	1.824	1.824	0
$t\bar{t} \to t\bar{t}$	-0.2983	-0.2983	$3.353 \cdot 10^{-8}$	3.833	3.833	$5.218 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	0.6933	0.6933	0	6.553	6.553	0
$u\bar{d} \to u\bar{d}$	-1.028	-1.028	0	2.078	2.078	0
$u\bar{u} \to c\bar{c}$	0.02955	0.02955	0	0.2705	0.2705	0
$u\bar{u} \to u\bar{u}$	-0.0002548	-0.0002548	0	0.01967	0.01967	0

# 2.62 cqq31

		inter	ference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	-0.0869	-0.0869	$-9.206 \cdot 10^{-8}$	1.232	1.232	0	
$b\bar{b}  o b\bar{b}$	-10.62	-10.62	0	7.332	7.332	$6.819 \cdot 10^{-8}$	
$b\bar{b} \to d\bar{d}$	0.05268	0.05268	0	0.07573	0.07573	$1.32 \cdot 10^{-8}$	
$b\bar{b}  o t\bar{t}$	0.173	0.173	0	0.579	0.579	$-1.727 \cdot 10^{-8}$	

$b\bar{b}  o u\bar{u}$	0.02448	0.02448	0	0.07812	0.07812	0
$d\bar{d} \to c\bar{c}$	3.661	3.661	0	11.73	11.73	0
$d\bar{d} \to s\bar{s}$	0.3497	0.3497	0	0.5032	0.5032	$-1.987 \cdot 10^{-8}$
$s\bar{s} \to s\bar{s}$	-10.83	-10.83	$-9.234 \cdot 10^{-8}$	7.369	7.369	$-5.428 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	1.097	1.097	$9.117 \cdot 10^{-8}$	1.465	1.465	0
$t\bar{t} \to d\bar{d}$	0.725	0.725	0	1.815	1.815	0
$t\bar{t} \to s\bar{s}$	2.436	2.436	0	7.296	7.296	$-1.371 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	-0.2983	-0.2983	$3.353 \cdot 10^{-8}$	3.833	3.833	$5.218 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	-0.1156	-0.1156	$1.731 \cdot 10^{-7}$	1.638	1.638	$6.104 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	-1.028	-1.028	$-9.732 \cdot 10^{-8}$	2.078	2.078	$-9.624 \cdot 10^{-8}$
$u\bar{u} \to c\bar{c}$	0.188	0.188	0	0.2705	0.2705	0
$u\bar{u} \to u\bar{u}$	-0.0002548	-0.0002548	0	0.01967	0.01967	$-1.017 \cdot 10^{-7}$

# 2.63 cqu1

		inte	rference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o t\bar{t}$	-0.1042	-0.1042	0	0.04263	0.04263	0	
$b\bar{b} \to u\bar{u}$	0.02761	0.02761	0	0.9496	0.9496	0	
$d\bar{d} \to c\bar{c}$	0.0005753	0.0005753	0	0.01979	0.01979	0	
$t\bar{t} \to c\bar{c}$	0.01992	0.01992	0	0.3572	0.3572	0	
$t\bar{t} \to d\bar{d}$	0.01948	0.01948	0	0.8796	0.8796	0	
$t\bar{t} \to s\bar{s}$	0.01077	0.01077	0	0.5803	0.5803	0	
$t\bar{t} \to t\bar{t}$	-0.3143	-0.3143	0	13.72	13.72	0	
$u\bar{d} \to u\bar{d}$	-0.03512	-0.03512	0	1	1	0	
$u\bar{u} \to c\bar{c}$	0.04234	0.04234	0	1.513	1.513	0	
$u\bar{u} \to u\bar{u}$	-0.1705	-0.1705	0	2.228	2.228	0	

## 2.64 cqu8

		interf	erence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$b\bar{b} \to t\bar{t}$	0.02488	0.02488	0	0.1137	0.1137	0	
$b\bar{b} \to u\bar{u}$	0.1271	0.1271	0	0.04289	0.04289	0	
$d\bar{d} \to c\bar{c}$	$5.955 \cdot 10^{-5}$	$5.955 \cdot 10^{-5}$	0	$1.974 \cdot 10^{-5}$	$1.974 \cdot 10^{-5}$	0	
$t\bar{t} \to c\bar{c}$	1.214	1.214	0	0.3966	0.3966	0	
$t\bar{t} \to d\bar{d}$	0.08063	0.08063	0	0.02058	0.02058	0	
$t\bar{t} \to s\bar{s}$	0.5514	0.5514	0	0.1795	0.1795	0	
$t\bar{t} \to t\bar{t}$	-2.857	-2.857	0	2.061	2.061	0	
$u\bar{d} \to u\bar{d}$	-5.404	-5.404	0	0.2222	0.2222	0	
$u\bar{u} \to c\bar{c}$	0.09021	0.09021	0	0.03044	0.03044	0	
$u\bar{u} \to u\bar{u}$	-2.01	-2.01	0	0.5777	0.5777	0	

## 2.65 cquqd11Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$2.819 \cdot 10^{-15}$	$2.819 \cdot 10^{-15}$	$3.547 \cdot 10^{-8}$	$3.62 \cdot 10^{-12}$	$3.62 \cdot 10^{-12}$	$8.287 \cdot 10^{-8}$		
$b\bar{b}  o t\bar{t}$	$7.194 \cdot 10^{-20}$	$3.852 \cdot 10^{-20}$	0.4646	0.0003124	0.0003123	$6.691 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$-2.93 \cdot 10^{-30}$	$-2.67 \cdot 10^{-30}$	0.08867	$4.213 \cdot 10^{-14}$	$4.212 \cdot 10^{-14}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-7.784 \cdot 10^{-32}$	$-7.784 \cdot 10^{-32}$	0	$3.789 \cdot 10^{-16}$	$3.789 \cdot 10^{-16}$	0		
$t\bar{t} \to d\bar{d}$	$2.375 \cdot 10^{-27}$	$-3.384 \cdot 10^{-28}$	1.142	$3.116 \cdot 10^{-10}$	$3.116 \cdot 10^{-10}$	$6.419 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$-9.448 \cdot 10^{-25}$	$2.158 \cdot 10^{-24}$	3.284	$8.152 \cdot 10^{-8}$	$8.152 \cdot 10^{-8}$	$6.133 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-8.403 \cdot 10^{-19}$	$-8.403 \cdot 10^{-19}$	0	$5.818 \cdot 10^{-15}$	$5.818 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$-4.465 \cdot 10^{-35}$	$-4.465 \cdot 10^{-35}$	-0.000117	$1.19 \cdot 10^{-19}$	$1.19 \cdot 10^{-19}$	0		

# 2.66 cquqd11Re

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-1.792 \cdot 10^{-11}$	$-1.792 \cdot 10^{-11}$	0	$4.099 \cdot 10^{-12}$	$4.099 \cdot 10^{-12}$	$7.319 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	$-2.804 \cdot 10^{-5}$	$-2.804 \cdot 10^{-5}$	$3.345 \cdot 10^{-5}$	0.0005417	0.0005417	$6.689 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$-3.073 \cdot 10^{-15}$	$-3.073 \cdot 10^{-15}$	$3.335 \cdot 10^{-5}$	$8.562 \cdot 10^{-15}$	$8.561 \cdot 10^{-15}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$2.864 \cdot 10^{-15}$	$2.864 \cdot 10^{-15}$	0	$1.7 \cdot 10^{-18}$	$1.7 \cdot 10^{-18}$	0		
$t\bar{t} \to d\bar{d}$	$7.507 \cdot 10^{-12}$	$7.507 \cdot 10^{-12}$	$2.664 \cdot 10^{-8}$	$3.28 \cdot 10^{-11}$	$3.28 \cdot 10^{-11}$	$6.098 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$-4.038 \cdot 10^{-8}$	$-4.038 \cdot 10^{-8}$	$2.476 \cdot 10^{-8}$	$1.134 \cdot 10^{-7}$	$1.134 \cdot 10^{-7}$	0		
$u\bar{d} \to c\bar{s}$	$-3.44 \cdot 10^{-15}$	$-3.44 \cdot 10^{-15}$	0	$2.682 \cdot 10^{-15}$	$2.682 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$8.523 \cdot 10^{-21}$	$8.523 \cdot 10^{-21}$	0	$6.069 \cdot 10^{-20}$	$6.069 \cdot 10^{-20}$	0		

## 2.67 cquqd1Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$5.905 \cdot 10^{-14}$	$5.905 \cdot 10^{-14}$	$3.387 \cdot 10^{-8}$	$1.771 \cdot 10^{-10}$	$1.771 \cdot 10^{-10}$	$5.646 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	$-1.739 \cdot 10^{-20}$	$4.98 \cdot 10^{-20}$	3.864	0.0005417	0.0005417	$6.691 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$-1.258 \cdot 10^{-29}$	$-8.376 \cdot 10^{-30}$	0.3344	$4.436 \cdot 10^{-14}$	$4.436 \cdot 10^{-14}$	$6.672 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-2.191 \cdot 10^{-31}$	$-3.506 \cdot 10^{-31}$	-0.6	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0		
$t\bar{t} \to d\bar{d}$	$-9.256 \cdot 10^{-26}$	$-8.093 \cdot 10^{-26}$	0.1257	$3.545 \cdot 10^{-10}$	$3.545 \cdot 10^{-10}$	$5.641 \cdot 10^{-8}$		
$t\bar{t}  o s\bar{s}$	$6.778 \cdot 10^{-25}$	$2.884 \cdot 10^{-24}$	-3.254	$1.406 \cdot 10^{-7}$	$1.406 \cdot 10^{-7}$	$7.112 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-3.204 \cdot 10^{-18}$	$-3.204 \cdot 10^{-18}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$1.529 \cdot 10^{-33}$	$1.53 \cdot 10^{-33}$	-0.001094	$6.069 \cdot 10^{-20}$	$6.069 \cdot 10^{-20}$	0		

# 2.68 cquqd1Re

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	$-3.526 \cdot 10^{-10}$	$-3.526 \cdot 10^{-10}$	$2.836 \cdot 10^{-8}$	$1.771 \cdot 10^{-10}$	$1.771 \cdot 10^{-10}$	$5.646 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	-0.0002674	-0.0002674	$3.343 \cdot 10^{-5}$	0.0003124	0.0003123	$6.691 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-8.974 \cdot 10^{-14}$	$-8.974 \cdot 10^{-14}$	$3.336 \cdot 10^{-5}$	$4.436 \cdot 10^{-14}$	$4.436 \cdot 10^{-14}$	$6.674 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$-3.848 \cdot 10^{-14}$	$-3.848 \cdot 10^{-14}$	0	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0
$t\bar{t} \to d\bar{d}$	$-7.057 \cdot 10^{-10}$	$-7.057 \cdot 10^{-10}$	$4.251 \cdot 10^{-8}$	$3.545 \cdot 10^{-10}$	$3.545 \cdot 10^{-10}$	$5.641 \cdot 10^{-8}$
$t\bar{t}  o s\bar{s}$	$-2.795 \cdot 10^{-7}$	$-2.795 \cdot 10^{-7}$	$3.578 \cdot 10^{-8}$	$1.406 \cdot 10^{-7}$	$1.406 \cdot 10^{-7}$	$7.112 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	$-1.923 \cdot 10^{-14}$	$-1.923 \cdot 10^{-14}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0
$u\bar{d} \to u\bar{d}$	$1.885 \cdot 10^{-21}$	$1.885 \cdot 10^{-21}$	0	$1.19 \cdot 10^{-19}$	$1.19 \cdot 10^{-19}$	0

## 2.69 cquqd81Im

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$4.002 \cdot 10^{-15}$	$4.002 \cdot 10^{-15}$	$2.499 \cdot 10^{-8}$	$9.108 \cdot 10^{-13}$	$9.108 \cdot 10^{-13}$	$7.685 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	$-9.033 \cdot 10^{-22}$	$7.713 \cdot 10^{-21}$	9.538	$6.275 \cdot 10^{-5}$	$6.275 \cdot 10^{-5}$	$6.69 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$-2.034 \cdot 10^{-31}$	$4.303 \cdot 10^{-31}$	3.116	$1.903 \cdot 10^{-15}$	$1.902 \cdot 10^{-15}$	$6.67 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-4.158 \cdot 10^{-33}$	$-4.728 \cdot 10^{-33}$	-0.137	$3.778 \cdot 10^{-19}$	$3.778 \cdot 10^{-19}$	0		
$t\bar{t} \to d\bar{d}$	$-1.06 \cdot 10^{-26}$	$-8.208 \cdot 10^{-27}$	0.2257	$7.289 \cdot 10^{-12}$	$7.289 \cdot 10^{-12}$	$5.488 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$-1.072 \cdot 10^{-24}$	$-3.483 \cdot 10^{-25}$	0.6751	$2.521 \cdot 10^{-8}$	$2.521 \cdot 10^{-8}$	$7.933 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-7.666 \cdot 10^{-19}$	$-7.666 \cdot 10^{-19}$	0	$5.961 \cdot 10^{-16}$	$5.961 \cdot 10^{-16}$	0		
$u\bar{d} \to u\bar{d}$	$3.278 \cdot 10^{-34}$	$3.298 \cdot 10^{-34}$	-0.00612	$1.149 \cdot 10^{-20}$	$1.149 \cdot 10^{-20}$	0		

## 2.70 cquqd81Re

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$\bar{b}t \to \bar{d}u$	$-7.268 \cdot 10^{-11}$	$-7.268 \cdot 10^{-11}$	$4.127 \cdot 10^{-8}$	$8.322 \cdot 10^{-12}$	$8.322 \cdot 10^{-12}$	$6.008 \cdot 10^{-8}$	
$b\bar{b}  o t\bar{t}$	$4.615 \cdot 10^{-5}$	$4.615 \cdot 10^{-5}$	$3.346 \cdot 10^{-5}$	$6.736 \cdot 10^{-5}$	$6.736 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$	

$b\bar{b} \to u\bar{u}$	$-3.939 \cdot 10^{-14}$	$-3.939 \cdot 10^{-14}$	$3.336 \cdot 10^{-5}$	$8.529 \cdot 10^{-15}$	$8.529 \cdot 10^{-15}$	$6.673 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$-3.173 \cdot 10^{-15}$	$-3.173 \cdot 10^{-15}$	0	$8.802 \cdot 10^{-17}$	$8.802 \cdot 10^{-17}$	0
$t\bar{t} \to d\bar{d}$	$-2.315 \cdot 10^{-10}$	$-2.315 \cdot 10^{-10}$	$4.32 \cdot 10^{-8}$	$3.781 \cdot 10^{-11}$	$3.781 \cdot 10^{-11}$	$5.29 \cdot 10^{-8}$
$t \bar t  o s \bar s$	$-4.75 \cdot 10^{-8}$	$-4.75 \cdot 10^{-8}$	$4.211\cdot10^{-8}$	$3.924 \cdot 10^{-9}$	$3.924 \cdot 10^{-9}$	$5.097 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	$-3.156 \cdot 10^{-15}$	$-3.156 \cdot 10^{-15}$	0	$2.76 \cdot 10^{-16}$	$2.76 \cdot 10^{-16}$	0
$u\bar{d} \to u\bar{d}$	$2.338 \cdot 10^{-20}$	$2.338 \cdot 10^{-20}$	0	$1.197 \cdot 10^{-20}$	$1.197 \cdot 10^{-20}$	0

## 2.71 cquqd8Im

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-7.84 \cdot 10^{-27}$	$-2.872 \cdot 10^{-27}$	$0.63\overline{37}$	$3.936 \cdot 10^{-11}$	$3.936 \cdot 10^{-11}$	$7.622 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	$-9.033 \cdot 10^{-22}$	$7.713 \cdot 10^{-21}$	9.538	$6.275 \cdot 10^{-5}$	$6.275 \cdot 10^{-5}$	$6.69 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$5.467 \cdot 10^{-31}$	$2.18 \cdot 10^{-31}$	0.6013	$9.859 \cdot 10^{-15}$	$9.858 \cdot 10^{-15}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$2.749 \cdot 10^{-32}$	$1.654 \cdot 10^{-32}$	0.3985	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0		
$t\bar{t} \to d\bar{d}$	$4.954 \cdot 10^{-27}$	$4.971 \cdot 10^{-27}$	-0.003397	$7.878 \cdot 10^{-11}$	$7.878 \cdot 10^{-11}$	$6.347 \cdot 10^{-8}$		
$t\bar{t}  o s\bar{s}$	$5.795 \cdot 10^{-25}$	$-2.908 \cdot 10^{-26}$	1.05	$3.124 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$6.401 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$5.484 \cdot 10^{-33}$	$5.484 \cdot 10^{-33}$	0	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$3.278 \cdot 10^{-34}$	$3.298 \cdot 10^{-34}$	-0.00612	$1.149 \cdot 10^{-20}$	$1.149 \cdot 10^{-20}$	0		

## 2.72 cquqd8Re

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\bar{b}t \to \bar{d}u$	$-4.719 \cdot 10^{-27}$	$-1.046 \cdot 10^{-26}$	-1.217	$3.936 \cdot 10^{-11}$	$3.936 \cdot 10^{-11}$	$5.081 \cdot 10^{-8}$	
$b\bar{b} \to t\bar{t}$	$4.615 \cdot 10^{-5}$	$4.615 \cdot 10^{-5}$	$3.346 \cdot 10^{-5}$	$6.736 \cdot 10^{-5}$	$6.736 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$	
$b\bar{b} \to u\bar{u}$	$3.047 \cdot 10^{-15}$	$3.047 \cdot 10^{-15}$	$3.338 \cdot 10^{-5}$	$9.859 \cdot 10^{-15}$	$9.858 \cdot 10^{-15}$	$6.673 \cdot 10^{-5}$	
$d\bar{d} \to c\bar{c}$	$-1.089 \cdot 10^{-15}$	$-1.089 \cdot 10^{-15}$	0	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0	
$t\bar{t} \to d\bar{d}$	$1.007 \cdot 10^{-11}$	$1.007 \cdot 10^{-11}$	$9.926 \cdot 10^{-8}$	$7.878 \cdot 10^{-11}$	$7.878 \cdot 10^{-11}$	$6.347 \cdot 10^{-8}$	

$t\bar{t} \to s\bar{s}$	$-3.597 \cdot 10^{-9}$	$-3.597 \cdot 10^{-9}$	$2.78 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$6.401 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	$-6.262 \cdot 10^{-31}$	$-6.262 \cdot 10^{-31}$	0	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0
$u\bar{d} \to u\bar{d}$	$2.338 \cdot 10^{-20}$	$2.338 \cdot 10^{-20}$	0	$1.197 \cdot 10^{-20}$	$1.197 \cdot 10^{-20}$	0

## 2.73 cuBIm

		interfere	ence		square	
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to zc\bar{c}$	$8.097 \cdot 10^{-10}$	$8.097 \cdot 10^{-10}$	0	$2.38 \cdot 10^{-10}$	$2.38 \cdot 10^{-10}$	0
$HH \to z t \bar{t}$	$-3.392 \cdot 10^{-7}$	$-3.392 \cdot 10^{-7}$	$2.949 \cdot 10^{-8}$	$8.962 \cdot 10^{-6}$	$8.962 \cdot 10^{-6}$	$6.695 \cdot 10^{-8}$
$HW^+  o \gamma t \bar{b}$	$-6.077 \cdot 10^{-7}$	$-6.077 \cdot 10^{-7}$	$3.291 \cdot 10^{-8}$	$2.688 \cdot 10^{-5}$	$2.688 \cdot 10^{-5}$	$7.441 \cdot 10^{-8}$
$HW^+ \to \gamma u \bar{d}$	$-1.908 \cdot 10^{-16}$	$-1.908 \cdot 10^{-16}$	0	$9.236 \cdot 10^{-16}$	$9.236 \cdot 10^{-16}$	0
$H\gamma \to c\bar{c}$	$-3.815 \cdot 10^{-22}$	$-3.815 \cdot 10^{-22}$	0	$7.059 \cdot 10^{-5}$	$7.059 \cdot 10^{-5}$	0
$H\gamma \to t\bar{t}$	$-1.293 \cdot 10^{-16}$	$2.342 \cdot 10^{-17}$	1.181	1.01	1.01	$9.902 \cdot 10^{-8}$
$Hz \to t\bar{t}$	-0.0001904	-0.0001904	0	0.7258	0.7258	$5.511 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$-1.499 \cdot 10^{-14}$	$-1.499 \cdot 10^{-14}$	0	$4.635 \cdot 10^{-11}$	$4.635 \cdot 10^{-11}$	0
$W^+W^-  o H c \bar c$	$-2.119 \cdot 10^{-12}$	$-2.119 \cdot 10^{-12}$	0	$2.009 \cdot 10^{-13}$	$2.009 \cdot 10^{-13}$	0
$W^+W^-  o H t \bar t$	$-1.207 \cdot 10^{-7}$	$-1.207 \cdot 10^{-7}$	$8.284 \cdot 10^{-8}$	$1.514 \cdot 10^{-8}$	$1.514 \cdot 10^{-8}$	$6.604 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	$-6.725 \cdot 10^{-19}$	$-4.192 \cdot 10^{-19}$	0.3767	0.000576	0.000576	$6.944 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$4.048 \cdot 10^{-30}$	$7.378 \cdot 10^{-30}$	-0.8229	$1.673 \cdot 10^{-14}$	$1.673 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$2.005 \cdot 10^{-22}$	$2.005 \cdot 10^{-22}$	0	$9.526 \cdot 10^{-8}$	$9.526 \cdot 10^{-8}$	0
$d\bar{d} \to c\bar{c}$	$1.862 \cdot 10^{-24}$	$1.862 \cdot 10^{-24}$	0	$2.809 \cdot 10^{-8}$	$2.809 \cdot 10^{-8}$	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$3.516 \cdot 10^{-19}$	$3.516 \cdot 10^{-19}$	0	0.0003418	0.0003418	$5.851 \cdot 10^{-8}$
$t\bar{t} \to \tau^+ \tau^-$	$-5.132 \cdot 10^{-19}$	$-5.132 \cdot 10^{-19}$	$2.578 \cdot 10^{-5}$	0.0005919	0.0005919	$6.758 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$-2.351 \cdot 10^{-18}$	$-2.351 \cdot 10^{-18}$	$-2.807 \cdot 10^{-6}$	0.003282	0.003282	$6.094 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	$2.112 \cdot 10^{-21}$	$2.13 \cdot 10^{-21}$	-0.008703	0.0002425	0.0002425	$8.246 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$-4.988 \cdot 10^{-19}$	$-4.989 \cdot 10^{-19}$	-0.0002005	0.0007496	0.0007496	$5.336 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$1.607 \cdot 10^{-17}$	$1.56 \cdot 10^{-17}$	0.02904	0.005505	0.005505	$5.45 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$-3.685 \cdot 10^{-26}$	$-3.684 \cdot 10^{-26}$	0.0002854	$1.746 \cdot 10^{-13}$	$1.746 \cdot 10^{-13}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.124 \cdot 10^{-28}$	$1.124 \cdot 10^{-28}$	0	$9.783 \cdot 10^{-14}$	$9.783 \cdot 10^{-14}$	0

$u\bar{u} \to c\bar{c}$	$5.259 \cdot 10^{-25}$	$5.251 \cdot 10^{-25}$	0.001365	$8.86 \cdot 10^{-8}$ $8.86 \cdot 10^{-8}$	0
$u\bar{u} \to u\bar{u}$	$2.96 \cdot 10^{-26}$	$2.96 \cdot 10^{-26}$	$-1.186 \cdot 10^{-5}$	$1.181 \cdot 10^{-11}  1.181 \cdot 10^{-11}$	0

### 2.74 cuBRe

		interfere	ence		square	
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to zc\bar{c}$	$4.911 \cdot 10^{-10}$	$4.911 \cdot 10^{-10}$	0	$2.38 \cdot 10^{-10}$	$2.38 \cdot 10^{-10}$	0
$HH \to z t \bar{t}$	$1.987 \cdot 10^{-7}$	$1.987 \cdot 10^{-7}$	$5.034 \cdot 10^{-8}$	$1.19 \cdot 10^{-5}$	$1.19\cdot 10^{-5}$	$8.403 \cdot 10^{-8}$
$HW^+ \to \gamma t \bar{b}$	$-1.575 \cdot 10^{-6}$	$-1.575 \cdot 10^{-6}$	$6.35 \cdot 10^{-8}$	$2.688 \cdot 10^{-5}$	$2.688 \cdot 10^{-5}$	$7.441 \cdot 10^{-8}$
$HW^+ \to \gamma u \bar{d}$	$2.012 \cdot 10^{-17}$	$2.012 \cdot 10^{-17}$	0	$9.236 \cdot 10^{-16}$	$9.236 \cdot 10^{-16}$	0
$H\gamma \to c\bar{c}$	$1.306 \cdot 10^{-9}$	$1.306 \cdot 10^{-9}$	0	$7.059 \cdot 10^{-5}$	$7.059 \cdot 10^{-5}$	0
$H\gamma \to t\bar{t}$	0.855	0.855	$2.339 \cdot 10^{-8}$	1.01	1.01	$9.902 \cdot 10^{-8}$
$Hz \to t\bar{t}$	-0.02545	-0.02545	$3.929 \cdot 10^{-8}$	0.737	0.737	$6.784 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$2.466 \cdot 10^{-12}$	$2.466 \cdot 10^{-12}$	0	$4.635 \cdot 10^{-11}$	$4.635 \cdot 10^{-11}$	0
$W^+W^-  o H c \bar c$	$-1.53 \cdot 10^{-11}$	$-1.53 \cdot 10^{-11}$	0	$2.009 \cdot 10^{-13}$	$2.009 \cdot 10^{-13}$	0
$W^+W^-  o H t \bar t$	$7.703 \cdot 10^{-8}$	$7.703 \cdot 10^{-8}$	$2.596 \cdot 10^{-8}$	$3.851 \cdot 10^{-8}$	$3.851 \cdot 10^{-8}$	$5.193 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	0.007564	0.007564	$2.644 \cdot 10^{-8}$	0.0008327	0.0008327	$6.005 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$-6.027 \cdot 10^{-14}$	$-6.027 \cdot 10^{-14}$	0	$1.673 \cdot 10^{-14}$	$1.673 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-9.08 \cdot 10^{-8}$	$-9.08 \cdot 10^{-8}$	0	$9.526 \cdot 10^{-8}$	$9.526 \cdot 10^{-8}$	0
$d\bar{d} \to c\bar{c}$	$2.812 \cdot 10^{-8}$	$2.812 \cdot 10^{-8}$	0	$2.809 \cdot 10^{-8}$	$2.809 \cdot 10^{-8}$	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.001025	0.001025	0	0.0004966	0.0004966	$4.027 \cdot 10^{-8}$
$t\bar{t} \to \tau^+ \tau^-$	-0.003981	-0.003981	$2.512 \cdot 10^{-8}$	0.001354	0.001354	$7.386 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	-0.003328	-0.003328	$3.005 \cdot 10^{-8}$	0.004146	0.004146	$7.236 \cdot 10^{-8}$
$t\bar{t}  o d\bar{d}$	-0.0003238	-0.0003238	$3.088 \cdot 10^{-8}$	0.0004992	0.0004992	$6.01 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	-0.0001329	-0.0001329	0	0.001006	0.001006	$9.938 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	0.0192	0.0192	0	0.01353	0.01353	$7.389 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$-1.358 \cdot 10^{-13}$	$-1.358 \cdot 10^{-13}$	0	$1.746 \cdot 10^{-13}$	$1.746 \cdot 10^{-13}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$8.739 \cdot 10^{-14}$	$8.739 \cdot 10^{-14}$	0	$9.783 \cdot 10^{-14}$	$9.783 \cdot 10^{-14}$	0

$u\bar{u} \to c\bar{c}$	$-8.045 \cdot 10^{-8}$	$-8.045 \cdot 10^{-8}$	0	$8.86 \cdot 10^{-8}$ $8.86 \cdot 10^{-8}$	0
$u\bar{u} \to u\bar{u}$	$1.514 \cdot 10^{-11}$	$1.514 \cdot 10^{-11}$	0	$1.181 \cdot 10^{-11}$ $1.181 \cdot 10^{-11}$	0

### 2.75 cuGIm

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$b\bar{b} \to t\bar{t}$	$-2.383 \cdot 10^{-17}$	$-2.353 \cdot 10^{-17}$	0.01264	0.02107	0.02107	$4.747 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$5.784 \cdot 10^{-29}$	$5.854 \cdot 10^{-29}$	-0.01212	$6.123 \cdot 10^{-13}$	$6.123 \cdot 10^{-13}$	0
$d\bar{d} \to c\bar{c}$	$-8.492 \cdot 10^{-24}$	$-8.492 \cdot 10^{-24}$	0	$1.027 \cdot 10^{-6}$	$1.027 \cdot 10^{-6}$	0
$gg \to t\bar{t}$	$2.825 \cdot 10^{-17}$	$3.28 \cdot 10^{-17}$	-0.1609	0.09769	0.09769	$6.142 \cdot 10^{-8}$
$gg \to u\bar{u}$	$7.181 \cdot 10^{-28}$	$7.181 \cdot 10^{-28}$	0	$1.211 \cdot 10^{-11}$	$1.211 \cdot 10^{-11}$	0
$t\bar{t} \to c\bar{c}$	$-8.813 \cdot 10^{-23}$	$-9.097 \cdot 10^{-23}$	-0.0322	0.03566	0.03566	$5.609 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	$-1.654 \cdot 10^{-24}$	$-1.471 \cdot 10^{-24}$	0.1111	0.008869	0.008869	$5.637 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$-3.033 \cdot 10^{-24}$	$-2.86 \cdot 10^{-24}$	0.05723	0.02741	0.02741	$7.296 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$9.043 \cdot 10^{-19}$	$-1.7 \cdot 10^{-18}$	2.88	0.03333	0.03333	$6 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$-4.909 \cdot 10^{-27}$	$-4.902 \cdot 10^{-27}$	0.001429	$6.553 \cdot 10^{-12}$	$6.553 \cdot 10^{-12}$	0
$u\bar{u} \to c\bar{c}$	$-4.596 \cdot 10^{-22}$	$-4.596 \cdot 10^{-22}$	0	$9.625 \cdot 10^{-7}$	$9.625 \cdot 10^{-7}$	0
$u\bar{u} \to u\bar{u}$	$2.26 \cdot 10^{-26}$	$2.26 \cdot 10^{-26}$	0	$8.561 \cdot 10^{-11}$	$8.561 \cdot 10^{-11}$	0

### 2.76 cuGRe

		interfere	ence	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
$b\bar{b} \to t\bar{t}$	-0.001831	-0.001831	$5.46 \cdot 10^{-8}$	$0.03045$ $0.03045$ $6.567 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$-2.992 \cdot 10^{-11}$	$-2.992 \cdot 10^{-11}$	0	$6.123 \cdot 10^{-13}  6.123 \cdot 10^{-13} \qquad 0$
$d\bar{d} \to c\bar{c}$	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$1.027 \cdot 10^{-6}$ $1.027 \cdot 10^{-6}$ 0
$gg \to t\bar{t}$	-0.6546	-0.6546	$3.055 \cdot 10^{-8}$	$0.1189$ $0.1189$ $8.411 \cdot 10^{-8}$
$gg \to u\bar{u}$	$-1.975 \cdot 10^{-11}$	$-1.975 \cdot 10^{-11}$	0	$1.211 \cdot 10^{-11}  1.211 \cdot 10^{-11} \qquad 0$

$t\bar{t} \to c\bar{c}$	-0.1971	-0.1971	$5.074 \cdot 10^{-8}$	0.04504	0.04504	$6.66 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	-0.1971	-0.1971	$5.074 \cdot 10^{-8}$	0.01825	0.01825	$5.478 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	-0.1971	-0.1971	0	0.0368	0.0368	$5.435 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	-0.1361	-0.1361	$7.35 \cdot 10^{-8}$	0.1021	0.1021	0
$u\bar{d} \to u\bar{d}$	$-3.082 \cdot 10^{-11}$	$-3.082 \cdot 10^{-11}$	0	$6.553 \cdot 10^{-12}$	$6.553 \cdot 10^{-12}$	0
$u\bar{u} \to c\bar{c}$	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$9.625 \cdot 10^{-7}$	$9.625 \cdot 10^{-7}$	0
$u\bar{u} \to u\bar{u}$	$-1.304 \cdot 10^{-10}$	$-1.304 \cdot 10^{-10}$	0	$8.561 \cdot 10^{-11}$	$8.561 \cdot 10^{-11}$	0

## 2.77 cuHIm

		interfere	ence		square	
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH  o Htar{t}$	$-2.795 \cdot 10^{-5}$	$-2.795 \cdot 10^{-5}$	$3.577 \cdot 10^{-8}$	$2.656 \cdot 10^{-5}$	$2.656 \cdot 10^{-5}$	$7.53 \cdot 10^{-8}$
$HH \to Hu\bar{u}$	$-3.096 \cdot 10^{-25}$	$-3.096 \cdot 10^{-25}$	0	$4.843 \cdot 10^{-16}$	$4.843 \cdot 10^{-16}$	0
$HH  o W^+ \bar t b$	$1.175 \cdot 10^{-6}$	$1.175 \cdot 10^{-6}$	0	$7.468 \cdot 10^{-6}$	$7.468 \cdot 10^{-6}$	$5.356 \cdot 10^{-8}$
$HH \to W^- u \bar{d}$	$1.29 \cdot 10^{-17}$	$1.29 \cdot 10^{-17}$	0	$4.772 \cdot 10^{-15}$	$4.772 \cdot 10^{-15}$	0
$HH \to zc\bar{c}$	$4.878 \cdot 10^{-11}$	$4.878 \cdot 10^{-11}$	0	$2.199 \cdot 10^{-10}$	$2.199 \cdot 10^{-10}$	0
$HH \to z t \bar{t}$	$3.679 \cdot 10^{-6}$	$3.679 \cdot 10^{-6}$	$2.718 \cdot 10^{-8}$	$1.135 \cdot 10^{-6}$	$1.135 \cdot 10^{-6}$	$8.809 \cdot 10^{-8}$
$HW^+ \to \gamma t \bar{b}$	$1.032 \cdot 10^{-6}$	$1.032 \cdot 10^{-6}$	0	$1.118 \cdot 10^{-7}$	$1.118 \cdot 10^{-7}$	0
$HW^+  o \gamma u \bar{d}$	$1.029 \cdot 10^{-16}$	$1.029 \cdot 10^{-16}$	0	$3.373 \cdot 10^{-17}$	$3.373 \cdot 10^{-17}$	0
$HW^+ \to u\bar{d}$	$5.123 \cdot 10^{-14}$	$5.123 \cdot 10^{-14}$	0	$9.375 \cdot 10^{-12}$	$9.375 \cdot 10^{-12}$	0
$HW^-  o \bar{t}b$	-0.0008253	-0.0008253	$3.635 \cdot 10^{-8}$	0.05774	0.05774	$6.928 \cdot 10^{-8}$
$H\gamma \to c\bar{c}$	$-4.235 \cdot 10^{-22}$	$-4.235 \cdot 10^{-22}$	0	$3.141 \cdot 10^{-7}$	$3.141 \cdot 10^{-7}$	0
$H\gamma  o t\bar{t}$	$-2.602 \cdot 10^{-18}$	$9.458 \cdot 10^{-20}$	1.036	0.00213	0.00213	$9.39 \cdot 10^{-8}$
$Hz \to t\bar{t}$	$-1.118 \cdot 10^{-5}$	$-1.118 \cdot 10^{-5}$	0	0.0681	0.0681	$5.874 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$-4.274 \cdot 10^{-18}$	$-4.274 \cdot 10^{-18}$	0	$9.367 \cdot 10^{-12}$	$9.367 \cdot 10^{-12}$	0
$W^+W^- \to H b \bar b$	$-3.169 \cdot 10^{-8}$	$-3.169 \cdot 10^{-8}$	$3.156 \cdot 10^{-8}$	$1.872 \cdot 10^{-9}$	$1.872 \cdot 10^{-9}$	$5.341 \cdot 10^{-8}$
$W^+W^-  o Hc\bar{c}$	$-2.288 \cdot 10^{-12}$	$-2.288 \cdot 10^{-12}$	0	$6.57 \cdot 10^{-12}$	$6.57 \cdot 10^{-12}$	0
$W^+W^- \to H d\bar{d}$	$1.104 \cdot 10^{-17}$	$1.104 \cdot 10^{-17}$	0	$1.532 \cdot 10^{-27}$	$1.532 \cdot 10^{-27}$	0

$W^+W^- \to H t \bar t$	$3.967 \cdot 10^{-7}$	$3.967 \cdot 10^{-7}$	$2.52 \cdot 10^{-8}$	$3.549 \cdot 10^{-7}$	$3.549 \cdot 10^{-7}$	$5.635 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	$-9.424 \cdot 10^{-23}$	$8.811 \cdot 10^{-23}$	1.935	$5.382 \cdot 10^{-7}$	$5.382 \cdot 10^{-7}$	$5.574 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$-3.842 \cdot 10^{-31}$	$-3.842 \cdot 10^{-31}$	0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-4.262 \cdot 10^{-30}$	$-4.262 \cdot 10^{-30}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
$d\bar{d} \to c\bar{c}$	$9.736 \cdot 10^{-34}$	$-4.505 \cdot 10^{-33}$	5.627	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
$t\bar{t} \to \tau^+ \tau^-$	$6.884 \cdot 10^{-23}$	$1.632 \cdot 10^{-22}$	-1.371	$3.439 \cdot 10^{-8}$	$3.439 \cdot 10^{-8}$	$5.816 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$-1.633 \cdot 10^{-22}$	$-1.684 \cdot 10^{-22}$	-0.03123	$9.945 \cdot 10^{-8}$	$9.945 \cdot 10^{-8}$	$4.022 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	$-1.032 \cdot 10^{-27}$	$-1.764 \cdot 10^{-27}$	-0.7092	$7.125 \cdot 10^{-13}$	$7.125 \cdot 10^{-13}$	$7.018 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$-1.054 \cdot 10^{-25}$	$-2.188 \cdot 10^{-25}$	-1.077	$2.826 \cdot 10^{-10}$	$2.826 \cdot 10^{-10}$	$3.539 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$8.482 \cdot 10^{-20}$	$-6.985 \cdot 10^{-19}$	9.235	0.004802	0.004802	$6.247 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$-7.7 \cdot 10^{-34}$	$-7.701 \cdot 10^{-34}$	-0.0001628	$7.991 \cdot 10^{-23}$	$7.991 \cdot 10^{-23}$	0
$u\bar{u} \to c\bar{c}$	$-9.258 \cdot 10^{-34}$	$-9.258 \cdot 10^{-34}$	0	$1.553 \cdot 10^{-17}$	$1.553 \cdot 10^{-17}$	0
$u\bar{u} \to u\bar{u}$	$-3.888 \cdot 10^{-28}$	$-3.888 \cdot 10^{-28}$	0	$1.147 \cdot 10^{-22}$	$1.147 \cdot 10^{-22}$	0

## 2.78 cuHRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$HH  o Htar{t}$	$4.235 \cdot 10^{-6}$	$4.235 \cdot 10^{-6}$	$4.722 \cdot 10^{-8}$	$1.135 \cdot 10^{-5}$	$1.135 \cdot 10^{-5}$	$8.807 \cdot 10^{-8}$		
$HH \to Hu\bar{u}$	$-3.927 \cdot 10^{-16}$	$-3.927 \cdot 10^{-16}$	0	$4.843 \cdot 10^{-16}$	$4.843 \cdot 10^{-16}$	0		
$HH  o W^+ \bar t b$	$6.066 \cdot 10^{-6}$	$6.066 \cdot 10^{-6}$	$3.297 \cdot 10^{-8}$	$3.982 \cdot 10^{-6}$	$3.982 \cdot 10^{-6}$	$7.533 \cdot 10^{-8}$		
$HH \to W^- u \bar{d}$	$-2.895 \cdot 10^{-15}$	$-2.895 \cdot 10^{-15}$	0	$4.772 \cdot 10^{-15}$	$4.772 \cdot 10^{-15}$	0		
$HH \to z c \bar{c}$	$-1.795 \cdot 10^{-10}$	$-1.795 \cdot 10^{-10}$	0	$2.199 \cdot 10^{-10}$	$2.199 \cdot 10^{-10}$	0		
$HH \to z t \bar{t}$	$-3.497 \cdot 10^{-6}$	$-3.497 \cdot 10^{-6}$	$2.859 \cdot 10^{-8}$	$1.148 \cdot 10^{-6}$	$1.148 \cdot 10^{-6}$	$8.712 \cdot 10^{-8}$		
$HW^+ \to \gamma t \bar{b}$	$-3.898 \cdot 10^{-6}$	$-3.898 \cdot 10^{-6}$	$2.566 \cdot 10^{-8}$	$9.221 \cdot 10^{-8}$	$9.221 \cdot 10^{-8}$	$5.422 \cdot 10^{-8}$		
$HW^+ \to \gamma u \bar{d}$	$-1.664 \cdot 10^{-16}$	$-1.664 \cdot 10^{-16}$	0	$3.373 \cdot 10^{-17}$	$3.373 \cdot 10^{-17}$	0		
$HW^+ \to u\bar{d}$	$-1.229 \cdot 10^{-12}$	$-1.229 \cdot 10^{-12}$	0	$9.375 \cdot 10^{-12}$	$9.375 \cdot 10^{-12}$	0		
$HW^-  o \bar{t}b$	0.09508	0.09508	$2.103 \cdot 10^{-8}$	0.05117	0.05117	$5.863 \cdot 10^{-8}$		
$H\gamma \to c\bar{c}$	$-1.036 \cdot 10^{-5}$	$-1.036 \cdot 10^{-5}$	0	$3.141 \cdot 10^{-7}$	$3.141 \cdot 10^{-7}$	0		

$H\gamma \to t\bar{t}$	-0.05574	-0.05574	$3.588 \cdot 10^{-8}$	0.00169	0.00169	$5.918 \cdot 10^{-8}$
$Hz \to t\bar{t}$	0.005789	0.005789	$3.455 \cdot 10^{-8}$	0.06825	0.06825	$5.861 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$1.497 \cdot 10^{-12}$	$1.497 \cdot 10^{-12}$	0	$9.367 \cdot 10^{-12}$	$9.367 \cdot 10^{-12}$	0
$W^+W^-  o Hb\bar{b}$	$5.642 \cdot 10^{-7}$	$5.642 \cdot 10^{-7}$	$3.545 \cdot 10^{-8}$	$5.388 \cdot 10^{-8}$	$5.388 \cdot 10^{-8}$	$5.568 \cdot 10^{-8}$
$W^+W^- \to Hc\bar{c}$	$5.464 \cdot 10^{-13}$	$5.464 \cdot 10^{-13}$	0	$6.569 \cdot 10^{-12}$	$6.569 \cdot 10^{-12}$	0
$W^+W^-  o H d \bar d$	$1.152 \cdot 10^{-16}$	$1.152 \cdot 10^{-16}$	0	$8.345 \cdot 10^{-27}$	$8.345 \cdot 10^{-27}$	0
$W^+W^-  o Ht\bar{t}$	$-1.097 \cdot 10^{-7}$	$-1.097 \cdot 10^{-7}$	0	$1.045 \cdot 10^{-7}$	$1.045 \cdot 10^{-7}$	$9.574 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	$-1.032 \cdot 10^{-5}$	$-1.032 \cdot 10^{-5}$	0	$4.739 \cdot 10^{-7}$	$4.739 \cdot 10^{-7}$	$6.33 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$-2.773 \cdot 10^{-15}$	$-2.773 \cdot 10^{-15}$	0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-2.02 \cdot 10^{-13}$	$-2.02 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
$d\bar{d} \to c\bar{c}$	$-1.189 \cdot 10^{-15}$	$-1.189 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-1.015 \cdot 10^{-6}$	$-1.015 \cdot 10^{-6}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	$6.554 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$-3.053 \cdot 10^{-6}$	$-3.053 \cdot 10^{-6}$	$3.276 \cdot 10^{-8}$	$1.87 \cdot 10^{-7}$	$1.87 \cdot 10^{-7}$	0
$t\bar{t}  o d\bar{d}$	$-2.079 \cdot 10^{-11}$	$-2.079 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	$6.326 \cdot 10^{-8}$
$t\bar{t}  o s\bar{s}$	$-8.322 \cdot 10^{-9}$	$-8.322 \cdot 10^{-9}$	$3.605 \cdot 10^{-8}$	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	$3.988 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	0.06786	0.06786	$2.947 \cdot 10^{-8}$	0.008593	0.008593	$5.819 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$1.31 \cdot 10^{-21}$	$1.31 \cdot 10^{-21}$	0	$7.991 \cdot 10^{-23}$	$7.991 \cdot 10^{-23}$	0
$u\bar{u} \to c\bar{c}$	$-5.153 \cdot 10^{-16}$	$-5.153 \cdot 10^{-16}$	0	$3.107 \cdot 10^{-17}$	$3.107 \cdot 10^{-17}$	0
$u\bar{u} \to u\bar{u}$	$2.955 \cdot 10^{-11}$	$2.955 \cdot 10^{-11}$	0	$2.008 \cdot 10^{-22}$	$2.008 \cdot 10^{-22}$	0

## 2.79 cuWIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^+ \bar{t} b$	$-3.363 \cdot 10^{-6}$	$-3.363 \cdot 10^{-6}$	$2.974 \cdot 10^{-8}$	$1.616 \cdot 10^{-5}$	$1.616 \cdot 10^{-5}$	$6.188 \cdot 10^{-8}$		
$HH  o W^- u \bar{d}$	$3.356 \cdot 10^{-15}$	$3.356 \cdot 10^{-15}$	0	$8.388 \cdot 10^{-16}$	$8.388 \cdot 10^{-16}$	0		
$HH \to z c \bar{c}$	$1.467 \cdot 10^{-11}$	$1.467 \cdot 10^{-11}$	0	$7.377 \cdot 10^{-11}$	$7.377 \cdot 10^{-11}$	0		
$HH  o zt \bar t$	$-7.828 \cdot 10^{-7}$	$-7.828 \cdot 10^{-7}$	$2.555 \cdot 10^{-8}$	$2.565 \cdot 10^{-5}$	$2.565 \cdot 10^{-5}$	$3.898 \cdot 10^{-8}$		
$HW^+ \to \gamma t \bar{b}$	$-1.194 \cdot 10^{-6}$	$-1.194 \cdot 10^{-6}$	$8.377 \cdot 10^{-8}$	$5.031 \cdot 10^{-6}$	$5.031 \cdot 10^{-6}$	$5.963 \cdot 10^{-8}$		

$HW^+ \to \gamma u \bar{d}$	$-2.033 \cdot 10^{-17}$	$-2.033 \cdot 10^{-17}$	0	$6.228 \cdot 10^{-16}$	$6.228 \cdot 10^{-16}$	0
$HW^+ \rightarrow u\bar{d}$	$-1.051 \cdot 10^{-14}$	$-1.051 \cdot 10^{-14}$	0	$2.856 \cdot 10^{-10}$	$2.856 \cdot 10^{-10}$	0
$HW^- \to \bar{t}b$	0.0001586	0.0001586	0	2.143	2.143	$4.667 \cdot 10^{-8}$
$H\gamma \to c\bar{c}$	$5.789 \cdot 10^{-23}$	$5.789 \cdot 10^{-23}$	0	$9.231 \cdot 10^{-6}$	$9.231 \cdot 10^{-6}$	0
$H\gamma \to t\bar{t}$	$4.013 \cdot 10^{-17}$	$4.272 \cdot 10^{-17}$	-0.06467	0.7184	0.7184	$5.568 \cdot 10^{-8}$
$Hz \to t\bar{t}$	0.0004176	0.0004176	$2.395 \cdot 10^{-8}$	2.151	2.151	$4.649 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$-2.472 \cdot 10^{-14}$	$-2.472 \cdot 10^{-14}$	0	$1.678 \cdot 10^{-10}$	$1.678 \cdot 10^{-10}$	0
$W^+W^-  o Hb\bar{b}$	$2.585 \cdot 10^{-7}$	$2.585 \cdot 10^{-7}$	$3.868 \cdot 10^{-8}$	$4.292 \cdot 10^{-6}$	$4.292 \cdot 10^{-6}$	$4.659 \cdot 10^{-8}$
$W^+W^- \to H c \bar c$	$1.112 \cdot 10^{-10}$	$1.112 \cdot 10^{-10}$	0	$1.608 \cdot 10^{-10}$	$1.608 \cdot 10^{-10}$	0
$W^+W^-  o Hd\bar{d}$	$1.511 \cdot 10^{-17}$	$1.511 \cdot 10^{-17}$	0	$1.032 \cdot 10^{-25}$	$1.032 \cdot 10^{-25}$	0
$W^+W^-  o Ht\bar{t}$	$-2.913 \cdot 10^{-6}$	$-2.913 \cdot 10^{-6}$	$3.433 \cdot 10^{-8}$	$3.519 \cdot 10^{-5}$	$3.519 \cdot 10^{-5}$	$5.683 \cdot 10^{-8}$
$\bar{b}t \to \bar{d}u$	$2.663 \cdot 10^{-17}$	$2.702 \cdot 10^{-17}$	-0.01462	0.01305	0.01305	$7.663 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	$8.465 \cdot 10^{-18}$	$8.496 \cdot 10^{-18}$	-0.003668	0.01915	0.01915	$5.221 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$-4.224 \cdot 10^{-30}$	$-4.224 \cdot 10^{-30}$	0	$2.586 \cdot 10^{-13}$	$2.586 \cdot 10^{-13}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	$-2.939 \cdot 10^{-18}$	$-2.922 \cdot 10^{-18}$	0.006038	0.003529	0.003529	$5.667 \cdot 10^{-8}$
$c\bar{c} \to \mu^+ \mu^-$	$-8.191 \cdot 10^{-24}$	$-8.191 \cdot 10^{-24}$	0	$3.399 \cdot 10^{-8}$	$3.399 \cdot 10^{-8}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	$9.773 \cdot 10^{-24}$	$9.773 \cdot 10^{-24}$	0	$1.436 \cdot 10^{-7}$	$1.436 \cdot 10^{-7}$	0
$d\bar{d} \to c\bar{c}$	$-2.559 \cdot 10^{-24}$	$-2.559 \cdot 10^{-24}$	0	$1.694 \cdot 10^{-7}$	$1.694 \cdot 10^{-7}$	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$-1.698 \cdot 10^{-20}$	$-1.698 \cdot 10^{-20}$	0	0.0002727	0.0002727	$3.667 \cdot 10^{-8}$
$t\bar{t} \to \tau^+ \tau^-$	$-5.367 \cdot 10^{-19}$	$-5.367 \cdot 10^{-19}$	$-6.849 \cdot 10^{-5}$	0.0006016	0.0006016	$6.649 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$-1.256 \cdot 10^{-17}$	$-1.256 \cdot 10^{-17}$	$-1.266 \cdot 10^{-5}$	0.005768	0.005768	$5.201 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	$-4.419 \cdot 10^{-18}$	$-4.419 \cdot 10^{-18}$	$1.598 \cdot 10^{-5}$	0.005182	0.005182	$5.789 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$1.448 \cdot 10^{-18}$	$1.447 \cdot 10^{-18}$	$4.774 \cdot 10^{-5}$	0.005335	0.005335	$5.623 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$2.33 \cdot 10^{-18}$	$2.59 \cdot 10^{-18}$	-0.1116	0.07839	0.07839	$6.379 \cdot 10^{-8}$
$u\bar{d} \to \mu^+ \nu_\mu$	$1.048 \cdot 10^{-27}$	$1.048 \cdot 10^{-27}$	0	$6.606 \cdot 10^{-13}$	$6.606 \cdot 10^{-13}$	0
$u\bar{d} \to c\bar{s}$	$-2.353 \cdot 10^{-23}$	$-2.353 \cdot 10^{-23}$	0	$6.331 \cdot 10^{-7}$	$6.331 \cdot 10^{-7}$	0
$u\bar{d} \to u\bar{d}$	$1.884 \cdot 10^{-25}$	$1.884 \cdot 10^{-25}$	0.0002382	$4.088 \cdot 10^{-12}$	$4.088 \cdot 10^{-12}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-1.613 \cdot 10^{-30}$	$-1.613 \cdot 10^{-30}$	0	$4.577 \cdot 10^{-14}$	$4.577 \cdot 10^{-14}$	0
$u\bar{u} \to c\bar{c}$	$3.121 \cdot 10^{-24}$	$3.119 \cdot 10^{-24}$	0.0004602	$2.64 \cdot 10^{-7}$	$2.64 \cdot 10^{-7}$	0

 $u\bar{u} \to u\bar{u}$  1.559 · 10<sup>-26</sup> 1.559 · 10<sup>-26</sup> -0.0003606 8.988 · 10<sup>-13</sup> 8.988 · 10<sup>-13</sup>

### 2.80 cuWRe

		interfere		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH  o W^+ \bar t b$	$8.126 \cdot 10^{-5}$	$8.126 \cdot 10^{-5}$	$3.692 \cdot 10^{-8}$	$7.63 \cdot 10^{-5}$	$7.63 \cdot 10^{-5}$	$5.242 \cdot 10^{-8}$	
$HH \to W^- u \bar{d}$	$-2.209 \cdot 10^{-16}$	$-2.209 \cdot 10^{-16}$	0	$4.085 \cdot 10^{-17}$	$4.085 \cdot 10^{-17}$	0	
$HH \to z c \bar{c}$	$-8.896 \cdot 10^{-10}$	$-8.896 \cdot 10^{-10}$	0	$7.809 \cdot 10^{-10}$	$7.809 \cdot 10^{-10}$	0	
$HH \to zt\bar{t}$	$-3.599 \cdot 10^{-7}$	$-3.599 \cdot 10^{-7}$	$2.779 \cdot 10^{-8}$	$3.905 \cdot 10^{-5}$	$3.905 \cdot 10^{-5}$	$5.122 \cdot 10^{-8}$	
$HW^+ \to \gamma t \bar{b}$	$-4.852 \cdot 10^{-7}$	$-4.852 \cdot 10^{-7}$	$2.061 \cdot 10^{-8}$	$7.283 \cdot 10^{-6}$	$7.283 \cdot 10^{-6}$	$5.492 \cdot 10^{-8}$	
$HW^+ \to \gamma u \bar{d}$	$3.885 \cdot 10^{-17}$	$3.885 \cdot 10^{-17}$	0	$3.859 \cdot 10^{-16}$	$3.859 \cdot 10^{-16}$	0	
$HW^+ \to u\bar{d}$	$-9.129 \cdot 10^{-12}$	$-9.129 \cdot 10^{-12}$	0	$3.154 \cdot 10^{-10}$	$3.154 \cdot 10^{-10}$	0	
$HW^-  o \bar{t}b$	0.1057	0.1057	0	1.101	1.101	$9.079 \cdot 10^{-8}$	
$H\gamma \to c\bar{c}$	$7.209 \cdot 10^{-10}$	$7.209 \cdot 10^{-10}$	0	$2.151 \cdot 10^{-5}$	$2.151 \cdot 10^{-5}$	0	
$H\gamma \to t\bar{t}$	0.472	0.472	$4.238 \cdot 10^{-8}$	0.3078	0.3078	$6.498 \cdot 10^{-8}$	
$Hz \to t\bar{t}$	0.04611	0.04611	$2.169 \cdot 10^{-8}$	2.418	2.418	$8.27 \cdot 10^{-8}$	
$Hz \to u\bar{u}$	$-4.467 \cdot 10^{-12}$	$-4.467 \cdot 10^{-12}$	0	$1.521 \cdot 10^{-10}$	$1.521 \cdot 10^{-10}$	0	
$W^+W^- \to H b \bar b$	$1.311 \cdot 10^{-6}$	$1.311 \cdot 10^{-6}$	0	$1.221 \cdot 10^{-5}$	$1.221 \cdot 10^{-5}$	$8.193 \cdot 10^{-8}$	
$W^+W^-  o Hc\bar{c}$	$-8.766 \cdot 10^{-11}$	$-8.766 \cdot 10^{-11}$	0	$1.262 \cdot 10^{-10}$	$1.262 \cdot 10^{-10}$	0	
$W^+W^- \to H d\bar{d}$	$-1.557 \cdot 10^{-16}$	$-1.557 \cdot 10^{-16}$	0	$1.377 \cdot 10^{-25}$	$1.377 \cdot 10^{-25}$	0	
$W^+W^-  o H t \bar t$	$-4.153 \cdot 10^{-6}$	$-4.153 \cdot 10^{-6}$	$2.408 \cdot 10^{-8}$	$4.216 \cdot 10^{-5}$	$4.216 \cdot 10^{-5}$	$4.744 \cdot 10^{-8}$	
$\bar{b}t \to \bar{d}u$	-0.01433	-0.01433	$6.977 \cdot 10^{-8}$	0.006919	0.006919	$5.781 \cdot 10^{-8}$	
$b\bar{b}  o t\bar{t}$	0.2882	0.2882	$3.469 \cdot 10^{-8}$	0.3588	0.3588	$5.574 \cdot 10^{-8}$	
$b\bar{b} \to u\bar{u}$	$1.393 \cdot 10^{-13}$	$1.393 \cdot 10^{-13}$	0	$9.91 \cdot 10^{-14}$	$9.91 \cdot 10^{-14}$	0	
$b\bar{t} \to e^-\bar{\nu}_e$	-0.002578	-0.002578	0	0.004332	0.004332	$4.616 \cdot 10^{-8}$	
$c\bar{c} \to \mu^+ \mu^-$	$-7.647 \cdot 10^{-8}$	$-7.647 \cdot 10^{-8}$	0	$6.299 \cdot 10^{-8}$	$6.299 \cdot 10^{-8}$	0	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-2.57\cdot10^{-7}$	$-2.57 \cdot 10^{-7}$	0	$1.067 \cdot 10^{-7}$	$1.067 \cdot 10^{-7}$	0	
$d\bar{d} \to c\bar{c}$	$-3.614 \cdot 10^{-7}$	$-3.614 \cdot 10^{-7}$	0	$1.663 \cdot 10^{-7}$	$1.663 \cdot 10^{-7}$	0	

$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.001857	-0.001857	$5.386 \cdot 10^{-8}$	0.00163	0.00163	$6.137 \cdot 10^{-8}$
$t\bar{t} \to \tau^+ \tau^-$	-0.00294	-0.00294	$3.401 \cdot 10^{-8}$	0.0008953	0.0008953	$5.585 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	-0.005618	-0.005618	$1.78 \cdot 10^{-8}$	0.007274	0.007274	$6.874 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	0.0003311	0.0003311	$3.021 \cdot 10^{-8}$	0.002956	0.002956	$6.767 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	-0.001272	-0.001272	0	0.005958	0.005958	$6.714 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	0.02092	0.02092	0	0.0181	0.0181	$5.525 \cdot 10^{-8}$
$u\bar{d} \to \mu^+ \nu_\mu$	$-4.016 \cdot 10^{-13}$	$-4.016 \cdot 10^{-13}$	0	$6.596 \cdot 10^{-13}$	$6.596 \cdot 10^{-13}$	0
$u\bar{d} \to c\bar{s}$	$-1.967 \cdot 10^{-7}$	$-1.967 \cdot 10^{-7}$	0	$4.727 \cdot 10^{-7}$	$4.727 \cdot 10^{-7}$	0
$u\bar{d} \to u\bar{d}$	$-2.239 \cdot 10^{-12}$	$-2.239 \cdot 10^{-12}$	0	$2.571 \cdot 10^{-12}$	$2.571 \cdot 10^{-12}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-1.583 \cdot 10^{-13}$	$-1.583 \cdot 10^{-13}$	0	$3.21 \cdot 10^{-13}$	$3.21 \cdot 10^{-13}$	0
$u\bar{u} \to c\bar{c}$	$-1.109 \cdot 10^{-7}$	$-1.109 \cdot 10^{-7}$	0	$1.554 \cdot 10^{-7}$	$1.554 \cdot 10^{-7}$	0
$u\bar{u} \to u\bar{u}$	$1.858 \cdot 10^{-11}$	$1.858 \cdot 10^{-11}$	0	$2.007 \cdot 10^{-11}$	$2.007 \cdot 10^{-11}$	0

### 2.81 cud1

		inter		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$b\bar{b}  o t\bar{t}$	-0.005045	-0.005045	0	0.08107	0.08107	0
$b\bar{b} \to u\bar{u}$	-0.01794	-0.01794	0	0.3144	0.3144	0
$d\bar{d} \to c\bar{c}$	-0.05599	-0.05599	0	0.9812	0.9812	0
$t\bar{t} \to d\bar{d}$	-0.03046	-0.03046	0	0.5264	0.5264	0
$t\bar{t} \to s\bar{s}$	-0.001399	-0.001399	0	0.01721	0.01721	0
$u\bar{d} \to u\bar{d}$	0.3551	0.3551	0	0.7711	0.7711	0

### 2.82 cud8

$b\bar{b} \to u\bar{u}$	0.207	0.207	0	0.06987	0.06987	0
$d\bar{d} \to c\bar{c}$	0.6461	0.6461	0	0.2181	0.2181	0
$t\bar{t} \to d\bar{d}$	0.3663	0.3663	0	0.117	0.117	0
$t\bar{t} \to s\bar{s}$	0.03098	0.03098	0	0.003824	0.003824	0
$u\bar{d} \to u\bar{d}$	-4.167	-4.167	0	0.1714	0.1714	0

#### 2.83 cuu

		int	erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$t\bar{t} \to c\bar{c}$	0.08584	0.08584	0	1.475	1.475	0		
$t\bar{t} \to t\bar{t}$	0.00847	0.00847	0	0.1269	0.1269	0		
$u\bar{u} \to c\bar{c}$	0.003872	0.003872	0	0.06786	0.06786	0		
$u\bar{u} \to u\bar{u}$	-2.52	-2.52	0	4.676	4.676	0		

### 2.84 cuu1

		in	nterference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$t\bar{t} \to c\bar{c}$	1.079	1.079	0	1.475	1.475	0		
$t\bar{t} \to t\bar{t}$	0.00847	0.00847	0	0.1269	0.1269	0		
$u\bar{u} \to c\bar{c}$	0.04598	0.04598	0	0.06786	0.06786	$-1.474 \cdot 10^{-8}$		
$u\bar{u} \to u\bar{u}$	-2.52	-2.52	0	4.676	4.676	$-6.416 \cdot 10^{-8}$		

### 2.85 sm

HH  o HH	0	0	0	0.1299	0.1299	0
HH  o HHH	0	0	0	$2.644 \cdot 10^{-7}$	$2.644 \cdot 10^{-7}$	0
$HH \to H \tau^+ \tau^-$	0	0	0	$1.746 \cdot 10^{-10}$	$1.746 \cdot 10^{-10}$	0
$HH  o Hbar{b}$	0	0	0	$1.173 \cdot 10^{-11}$	$1.173 \cdot 10^{-11}$	0
$HH \to H s \bar{s}$	0	0	0	$1.296 \cdot 10^{-14}$	$1.296 \cdot 10^{-14}$	0
$HH  o Htar{t}$	0	0	0	0.0001085	0.0001085	0
$HH \to Hu\bar{u}$	0	0	0	$3.478 \cdot 10^{-17}$	$3.478 \cdot 10^{-17}$	0
$HH \rightarrow Hzz$	0	0	0	$6.76 \cdot 10^{-6}$	$6.76 \cdot 10^{-6}$	0
$HH \to W^+W^-$	0	0	0	0.1124	0.1124	0
$HH  o W^+W^-\gamma$	0	0	0	$1.974 \cdot 10^{-6}$	$1.974 \cdot 10^{-6}$	0
$HH \to W^+ \bar{t} b$	0	0	0	0.0002633	0.0002633	0
$HH \to W^+ e^- \bar{\nu}_e$	0	0	0	$1.616 \cdot 10^{-7}$	$1.616 \cdot 10^{-7}$	0
$HH \to W^- u \bar{d}$	0	0	0	$4.802 \cdot 10^{-7}$	$4.802 \cdot 10^{-7}$	0
$HH  o z\bar{b}b$	0	0	0	$3.662 \cdot 10^{-6}$	$3.662 \cdot 10^{-6}$	0
$HH \to z \nu_e \bar{\nu}_e$	0	0	0	$1.926 \cdot 10^{-7}$	$1.926 \cdot 10^{-7}$	0
$HH \to zc\bar{c}$	0	0	0	$3.047 \cdot 10^{-6}$	$3.047 \cdot 10^{-6}$	0
$HH \to z d\bar{d}$	0	0	0	$9.177 \cdot 10^{-7}$	$9.177 \cdot 10^{-7}$	0
$HH \rightarrow ze^+e^-$	0	0	0	$9.034 \cdot 10^{-8}$	$9.034 \cdot 10^{-8}$	0
$HH \to z t \bar{t}$	0	0	0	$3.198 \cdot 10^{-6}$	$3.198 \cdot 10^{-6}$	0
$HH \rightarrow zz$	0	0	0	0.9258	0.9258	0
$HW^+  o \gamma t \bar{b}$	0	0	0	$8.042 \cdot 10^{-7}$	$8.042 \cdot 10^{-7}$	0
$HW^+ \to \gamma u \bar{d}$	0	0	0	$8.551 \cdot 10^{-9}$	$8.551 \cdot 10^{-9}$	0
$HW^+  o u \bar d$	0	0	0	0.02293	0.02293	0
$HW^- \to \bar{t}b$	0	0	0	2.575	2.575	0
$HW^-  o \gamma e^- \bar{\nu}_e$	0	0	0	$1.615 \cdot 10^{-8}$	$1.615 \cdot 10^{-8}$	0
$HW^- \to \mu^- \bar{\nu}_{\mu}$	0	0	0	0.004081	0.004081	0
$H\gamma  o bar{b}$	0	0	0	$7.728 \cdot 10^{-5}$	$7.728 \cdot 10^{-5}$	0
$H\gamma \to c\bar{c}$	0	0	0	$4.831 \cdot 10^{-5}$	$4.831 \cdot 10^{-5}$	0
$H\gamma \to d\bar{d}$	0	0	0	$1.046 \cdot 10^{-10}$	$1.046 \cdot 10^{-10}$	0

$H\gamma \to e^+e^-$	0	0	0	$3.537 \cdot 10^{-12}  3.537 \cdot 10^{-12}$	0
$H\gamma \to t\bar{t}$	0	0	0	1.462   1.462	0
$Hz \rightarrow \mu^+\mu^-$	0	0	0	$0.002453 \qquad 0.002453$	0
$Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$	0	0	0	$0.003737 \qquad 0.003737$	0
$Hz  o b ar{b}$	0	0	0	$0.007051 \qquad 0.007051$	0
$Hz \to s\bar{s}$	0	0	0	$0.009369 \qquad 0.009369$	0
$Hz \to t\bar{t}$	0	0	0	2.305 $2.305$	0
$Hz \to u\bar{u}$	0	0	0	$0.007245 \qquad 0.007245$	0
$W^+W^- \to H b \bar b$	0	0	0	$0.0002657 \qquad 0.0002657$	0
$W^+W^-  o Hc\bar{c}$	0	0	0	$3.98 \cdot 10^{-6}$ $3.98 \cdot 10^{-6}$	0
$W^+W^- \to H d\bar{d}$	0	0	0	$5.056 \cdot 10^{-7}$ $5.056 \cdot 10^{-7}$	0
$W^+W^-  o H t \bar t$	0	0	0	$9.418 \cdot 10^{-6}$ $9.418 \cdot 10^{-6}$	0
$W^+W^- \rightarrow W^+W^-$	0	0	0	149.2 $149.2$	0
$W^+W^- \to \gamma\gamma$	0	0	0	$0.1008 \qquad 0.1008$	0
$W^+W^- \to \gamma\gamma\gamma$	0	0	0	$1.452 \cdot 10^{-6}$ $1.452 \cdot 10^{-6}$	0
$\bar{b}t \to \bar{d}u$	0	0	0	0.034 $0.034$	0
$\gamma W^+ \to z W^+$	0	0	0	$0.3039 \qquad 0.3039$	0
$\mu^+\mu^- \to \tau^+\tau^-$	0	0	0	0.02815 $0.02815$	0
$\nu_{ au} \bar{\nu}_{ au}  o \nu_{ au} \bar{\nu}_{ au}$	0	0	0	$4.776 \cdot 10^{-5}$ $4.776 \cdot 10^{-5}$	0
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	0	0	0	0.006829 $0.006829$	0
$b\bar{b}  o \gamma \gamma$	0	0	0	$0.0003105 \qquad 0.0003105$	0
$b\bar{b} \to \mu^+ \mu^-$	0	0	0	$0.002085 \qquad 0.002085$	0
$b\bar{b}  o  u_e \bar{ u}_e$	0	0	0	$0.0004176 \qquad 0.0004176$	0
$b\bar{b}  o b\bar{b}$	0	0	0	19.44 19.44	0
$b\bar{b} \to d\bar{d}$	0	0	0	$0.6435 \qquad 0.6435$	0
$b\bar{b}  o t\bar{t}$	0	0	0	0.8445 $0.8445$	0
$b\bar{b} \to u\bar{u}$	0	0	0	0.9273 $0.9273$	0
$b\bar{t} \to e^- \bar{\nu}_e$	0	0	0	$0.003395 \qquad 0.003395$	0
$c\bar{c} \to \mu^+ \mu^-$	0	0	0	$0.0007122 \qquad 0.0007122$	0

$c\bar{s} \to \tau^+ \nu_{\tau}$	0	0	0	0.01118	0.01118	0
$d\bar{d} \to c\bar{c}$	0	0	0	0.748	0.748	0
$d\bar{d} \to e^+e^-$	0	0	0	0.0008928	0.0008928	0
$d\bar{d} \to s\bar{s}$	0	0	0	0.8	0.8	0
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	0	0	0	0.02388	0.02388	0
$e^+\nu_e \to \mu^+\nu_\mu$	0	0	0	0.001234	0.001234	0
$e^+\nu_e \to e^+\nu_e$	0	0	0	0.07367	0.07367	0
$e^+\tau^- \to e^+\tau^-$	0	0	0	0.9662	0.9662	0
$e^+e^- \rightarrow \mu^+\mu^-$	0	0	0	0.01588	0.01588	0
$e^+e^- \rightarrow e^+e^-$	0	0	0	0.02252	0.02252	0
$gg \to gg$	0	0	0	111.9	111.9	0
gg  o ggg	0	0	0	0.03463	0.03463	0
gg  o t ar t	0	0	0	3.013	3.013	0
$gg \to u\bar{u}$	0	0	0	0.323	0.323	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0	0	0	0.002392	0.002392	0
$s\bar{s} \to s\bar{s}$	0	0	0	5.483	5.483	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0	0	0	0.002057	0.002057	0
$t\bar{t} \to \tau^+ \tau^-$	0	0	0	0.006418	0.006418	0
$t\bar{t} \to c\bar{c}$	0	0	0	0.5981	0.5981	0
$t\bar{t} \to d\bar{d}$	0	0	0	0.9249	0.9249	0
$t\bar{t} \to s\bar{s}$	0	0	0	0.6954	0.6954	0
$t\bar{t} \to t\bar{t}$	0	0	0	0.3224	0.3224	0
$u\bar{d} \to \mu^+ \nu_\mu$	0	0	0	0.003262	0.003262	0
$u\bar{d} \to c\bar{s}$	0	0	0	0.002182	0.002182	0
$u\bar{d} \to u\bar{d}$	0	0	0	1.623	1.623	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0	0	0	0.001165	0.001165	0
$u\bar{u} \to c\bar{c}$	0	0	0	0.7551	0.7551	0
$u\bar{u} \to u\bar{u}$	0	0	0	13.16	13.16	0
$zz  o W^+W^-$	0	0	0	32.36	32.36	0

 $zz \to zz$  0 0 0 0.08158 0.08158