## 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	-1.343	-1.343	0	2.134	2.134	0		
cHDD	-0.1002	-0.1002	0	0.01403	0.01403	0		
cHbox	0.4007	0.4007	0	0.2244	0.2244	0		
cH13	-0.05126	-0.05126	0	0.003108	0.003108	0		
cll1	0.02563	0.02563	0	0.0007769	0.0007769	0		
$\mathtt{sm}$	0	0	0	0.1788	0.1788	0		

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

		interfer	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
сН	$8.742 \cdot 10^{-6}$	$8.742 \cdot 10^{-6}$	0	$4.461 \cdot 10^{-5}$	$4.461 \cdot 10^{-5}$	0
cHDD	$1.424 \cdot 10^{-7}$	$1.424 \cdot 10^{-7}$	0	$5.68 \cdot 10^{-7}$	$5.68 \cdot 10^{-7}$	0
cHbox	$-5.698 \cdot 10^{-7}$	$-5.698 \cdot 10^{-7}$	0	$9.088 \cdot 10^{-6}$	$9.088 \cdot 10^{-6}$	0
cH13	$-1.558 \cdot 10^{-7}$	$-1.558 \cdot 10^{-7}$	0	$1.417 \cdot 10^{-8}$	$1.417 \cdot 10^{-8}$	0
cll1	$7.79 \cdot 10^{-8}$	$7.79 \cdot 10^{-8}$	0	$3.542 \cdot 10^{-9}$	$3.542 \cdot 10^{-9}$	0
sm	0	0	0	$8.931 \cdot 10^{-9}$	$8.931 \cdot 10^{-9}$	0

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

		interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$-2.065 \cdot 10^{-8}$	$-2.065 \cdot 10^{-8}$	0	$3.798 \cdot 10^{-8}$	$3.798 \cdot 10^{-8}$	0	

cHDD	$-9.413 \cdot 10^{-11}$	$-9.413 \cdot 10^{-11}$	0	$2.722 \cdot 10^{-11}$	$2.722 \cdot 10^{-11}$	0
cHbox	$3.765 \cdot 10^{-10}$	$3.765 \cdot 10^{-10}$	0	$4.355 \cdot 10^{-10}$	$4.355 \cdot 10^{-10}$	0
cHl3	$-1.021 \cdot 10^{-9}$	$-1.021 \cdot 10^{-9}$	0	$9.283 \cdot 10^{-11}$	$9.283 \cdot 10^{-11}$	0
ceHIm	$-2.375 \cdot 10^{-14}$	$-2.375 \cdot 10^{-14}$	$3.032 \cdot 10^{-6}$	$5.094 \cdot 10^{-11}$	$5.094 \cdot 10^{-11}$	$6.106 \cdot 10^{-6}$
ceHRe	$-2.722 \cdot 10^{-10}$	$-2.722 \cdot 10^{-10}$	$3.049 \cdot 10^{-6}$	$2.277 \cdot 10^{-10}$	$2.277 \cdot 10^{-10}$	$6.103 \cdot 10^{-6}$
cll1	$5.104 \cdot 10^{-10}$	$5.104 \cdot 10^{-10}$	0	$2.321 \cdot 10^{-11}$	$2.321 \cdot 10^{-11}$	0
sm	0	0	0	$8.14 \cdot 10^{-11}$	$8.14 \cdot 10^{-11}$	0

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $			
сН	$-5.616 \cdot 10^{-8}$	$-5.616 \cdot 10^{-8}$	0	$9.272 \cdot 10^{-8}$ $9.272 \cdot 10^{-8}$ 0			
cHDD	$-5.143 \cdot 10^{-9}$	$-5.143 \cdot 10^{-9}$	0	$9.067 \cdot 10^{-10}  9.067 \cdot 10^{-10}  0$			
cHbox	$2.057 \cdot 10^{-8}$	$2.057 \cdot 10^{-8}$	0	$1.451 \cdot 10^{-8}$ $1.451 \cdot 10^{-8}$ 0			
cH13	$-3.093 \cdot 10^{-9}$	$-3.093 \cdot 10^{-9}$	0	$2.813 \cdot 10^{-10}$ $2.813 \cdot 10^{-10}$ 0			
cdHIm	$-4.272 \cdot 10^{-14}$	$-4.272 \cdot 10^{-14}$	$3.338 \cdot 10^{-5}$	$1.825 \cdot 10^{-9}$ $1.825 \cdot 10^{-9}$ $6.675 \cdot 10^{-5}$			
cdHRe	$-7.262 \cdot 10^{-9}$	$-7.262 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$1.811 \cdot 10^{-9}$ $1.811 \cdot 10^{-9}$ $6.676 \cdot 10^{-5}$			
cll1	$1.546 \cdot 10^{-9}$	$1.546 \cdot 10^{-9}$	0	$7.031 \cdot 10^{-11}  7.031 \cdot 10^{-11} \qquad 0$			
sm	0	0	0	$7.294 \cdot 10^{-9}$ $7.294 \cdot 10^{-9}$ 0			

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$-2.276 \cdot 10^{-11}$	$-2.276 \cdot 10^{-11}$	0	$3.678 \cdot 10^{-11}$	$3.678 \cdot 10^{-11}$	0		
cHDD	$-1.898 \cdot 10^{-10}$	$-1.898 \cdot 10^{-10}$	0	$2.641 \cdot 10^{-11}$	$2.641 \cdot 10^{-11}$	0		
cHbox	$7.593 \cdot 10^{-10}$	$7.593 \cdot 10^{-10}$	0	$4.226 \cdot 10^{-10}$	$4.226 \cdot 10^{-10}$	0		
cH13	$-1.281 \cdot 10^{-12}$	$-1.281 \cdot 10^{-12}$	0	$1.164 \cdot 10^{-13}$	$1.164 \cdot 10^{-13}$	0		

$\mathtt{cdHIm}$	$-1.972 \cdot 10^{-19}$	$-1.972 \cdot 10^{-19}$	0	$7.499 \cdot 10^{-13}$ $7.499 \cdot 10^{-13}$	$0^{-13}$ 0
cdHRe	$-3.198 \cdot 10^{-11}$	$-3.198 \cdot 10^{-11}$	0	$7.499 \cdot 10^{-13}$ $7.499 \cdot 10^{-13}$	$0^{-13}$ 0
cll1	$6.403 \cdot 10^{-13}$	$6.403 \cdot 10^{-13}$	0	$2.911 \cdot 10^{-14}$ $2.911 \cdot 10$	$0^{-14}$ 0
sm	0	0	0	$3.41 \cdot 10^{-10}$ $3.41 \cdot 10$	$^{-10}$ 0

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

		interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$1.627 \cdot 10^{-6}$	$1.627 \cdot 10^{-6}$	0	$1.467 \cdot 10^{-5}$	$1.467 \cdot 10^{-5}$	0		
cHDD	$1.32 \cdot 10^{-5}$	$1.32 \cdot 10^{-5}$	0	$1.517 \cdot 10^{-6}$	$1.517 \cdot 10^{-6}$	0		
cHbox	$-5.28 \cdot 10^{-5}$	$-5.28 \cdot 10^{-5}$	0	$2.427 \cdot 10^{-5}$	$2.427 \cdot 10^{-5}$	0		
cH13	$-5.856 \cdot 10^{-8}$	$-5.856 \cdot 10^{-8}$	0	$5.325 \cdot 10^{-9}$	$5.325 \cdot 10^{-9}$	0		
cll1	$2.928 \cdot 10^{-8}$	$2.928 \cdot 10^{-8}$	0	$1.331 \cdot 10^{-9}$	$1.331 \cdot 10^{-9}$	0		
cuHIm	$-7.585 \cdot 10^{-6}$	$-7.585 \cdot 10^{-6}$	$2.637 \cdot 10^{-8}$	$8.206 \cdot 10^{-5}$	$8.206 \cdot 10^{-5}$	$6.093 \cdot 10^{-8}$		
cuHRe	$6.607 \cdot 10^{-5}$	$6.607 \cdot 10^{-5}$	$3.027 \cdot 10^{-8}$	$3.831 \cdot 10^{-5}$	$3.831 \cdot 10^{-5}$	$5.22 \cdot 10^{-8}$		
sm	0	0	0	$3.206 \cdot 10^{-5}$	$3.206 \cdot 10^{-5}$	0		

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

		interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	$-2.525 \cdot 10^{-15}$	$-2.525 \cdot 10^{-15}$	0	$4.766 \cdot 10^{-15}$	$4.766 \cdot 10^{-15}$	0		
cHDD	$-7.047 \cdot 10^{-16}$	$-7.047 \cdot 10^{-16}$	0	$1.556 \cdot 10^{-16}$	$1.556 \cdot 10^{-16}$	0		
cHbox	$2.819 \cdot 10^{-15}$	$2.819 \cdot 10^{-15}$	0	$2.49 \cdot 10^{-15}$	$2.49 \cdot 10^{-15}$	0		
cH13	$-1.217 \cdot 10^{-16}$	$-1.217 \cdot 10^{-16}$	0	$1.106 \cdot 10^{-17}$	$1.106 \cdot 10^{-17}$	0		
cll1	$6.083 \cdot 10^{-17}$	$6.083 \cdot 10^{-17}$	0	$2.766 \cdot 10^{-18}$	$2.766 \cdot 10^{-18}$	0		
cuHIm	$-1.971 \cdot 10^{-24}$	$-1.971 \cdot 10^{-24}$	0	$3.224 \cdot 10^{-16}$	$3.224 \cdot 10^{-16}$	0		
cuHRe	$-1.014 \cdot 10^{-15}$	$-1.014 \cdot 10^{-15}$	0	$3.224 \cdot 10^{-16}$	$3.224 \cdot 10^{-16}$	0		

 $\hspace{3.1cm} \text{sm} \hspace{1.5cm} 0 \hspace{1.5cm} 0 \hspace{1.5cm} 7.979 \cdot 10^{-16} \hspace{0.5cm} 7.979 \cdot 10^{-16} \hspace{0.5cm} 0 \\$ 

#### 1.8 $HH \rightarrow Hzz$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$1.932 \cdot 10^{-5}$	$1.932 \cdot 10^{-5}$	0	$1.418 \cdot 10^{-5}$	$1.418 \cdot 10^{-5}$	0	
сНВ	$1.416 \cdot 10^{-6}$	$1.416 \cdot 10^{-6}$	0	$2.504 \cdot 10^{-7}$	$2.504 \cdot 10^{-7}$	0	
cHBtil	$1.639 \cdot 10^{-7}$	$1.639 \cdot 10^{-7}$	0	$1.473 \cdot 10^{-7}$	$1.473 \cdot 10^{-7}$	0	
cHDD	$1.782 \cdot 10^{-6}$	$1.782 \cdot 10^{-6}$	0	$8.414 \cdot 10^{-7}$	$8.414 \cdot 10^{-7}$	0	
cHW	$5.953 \cdot 10^{-6}$	$5.953 \cdot 10^{-6}$	0	$5.234 \cdot 10^{-6}$	$5.234 \cdot 10^{-6}$	0	
cHWB	$2.644 \cdot 10^{-6}$	$2.644 \cdot 10^{-6}$	0	$8.731 \cdot 10^{-7}$	$8.731 \cdot 10^{-7}$	0	
cHWBtil	$3.06 \cdot 10^{-7}$	$3.06 \cdot 10^{-7}$	0	$5.136 \cdot 10^{-7}$	$5.136 \cdot 10^{-7}$	0	
cHWtil	$5.715 \cdot 10^{-7}$	$5.715 \cdot 10^{-7}$	0	$1.791 \cdot 10^{-6}$	$1.791 \cdot 10^{-6}$	0	
cHbox	$-5.099 \cdot 10^{-6}$	$-5.099 \cdot 10^{-6}$	0	$4.304 \cdot 10^{-6}$	$4.304 \cdot 10^{-6}$	0	
cH13	$-3.043 \cdot 10^{-6}$	$-3.043 \cdot 10^{-6}$	0	$2.768 \cdot 10^{-7}$	$2.768 \cdot 10^{-7}$	0	
cll1	$1.522 \cdot 10^{-6}$	$1.522 \cdot 10^{-6}$	0	$6.919 \cdot 10^{-8}$	$6.919 \cdot 10^{-8}$	0	
sm	0	0	0	$7.445 \cdot 10^{-6}$	$7.445 \cdot 10^{-6}$	0	

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

		interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сН	0.2689	0.2689	0	0.1331	0.1331	0		
cHDD	3.624	3.624	0	0.1152	0.1152	0		
cHW	0.02023	0.02023	0	8.252	8.252	0		
cHWtil	$-8.191 \cdot 10^{-15}$	$-8.191 \cdot 10^{-15}$	0	12.29	12.29	0		
cHbox	-14.5	-14.5	0	1.843	1.843	0		
cH13	-0.05567	-0.05567	0	0.003375	0.003375	0		

cll1	0.02783	0.02783	0	0.0008437  0.0008437	0
sm	0	0	0	28.76 $28.76$	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cН	$8.509 \cdot 10^{-7}$	$8.509 \cdot 10^{-7}$	0	$2.79 \cdot 10^{-7}$	$2.79 \cdot 10^{-7}$	0	
cHB	$-5.079 \cdot 10^{-7}$	$-5.079 \cdot 10^{-7}$	0	$2.428 \cdot 10^{-6}$	$2.428 \cdot 10^{-6}$	0	
cHBtil	$5.454 \cdot 10^{-7}$	$5.454 \cdot 10^{-7}$	0	$2.428 \cdot 10^{-6}$	$2.428 \cdot 10^{-6}$	0	
cHDD	$-2.456 \cdot 10^{-7}$	$-2.456 \cdot 10^{-7}$	0	$1.004 \cdot 10^{-7}$	$1.004 \cdot 10^{-7}$	0	
cHW	$1.565 \cdot 10^{-6}$	$1.565 \cdot 10^{-6}$	0	$5.758 \cdot 10^{-5}$	$5.758 \cdot 10^{-5}$	0	
cHWB	$-1.977 \cdot 10^{-7}$	$-1.977 \cdot 10^{-7}$	0	$3.99 \cdot 10^{-5}$	$3.99 \cdot 10^{-5}$	0	
cHWBtil	$-8.154 \cdot 10^{-7}$	$-8.154 \cdot 10^{-7}$	0	$3.988 \cdot 10^{-5}$	$3.988 \cdot 10^{-5}$	0	
cHWtil	$7.896 \cdot 10^{-7}$	$7.896 \cdot 10^{-7}$	0	$7.908 \cdot 10^{-5}$	$7.908 \cdot 10^{-5}$	0	
cHbox	$7.534 \cdot 10^{-7}$	$7.534 \cdot 10^{-7}$	0	$1.423 \cdot 10^{-6}$	$1.423 \cdot 10^{-6}$	0	
cH13	$-2.808 \cdot 10^{-6}$	$-2.808 \cdot 10^{-6}$	0	$2.553 \cdot 10^{-7}$	$2.553 \cdot 10^{-7}$	0	
cW	$-4.121 \cdot 10^{-6}$	$-4.121 \cdot 10^{-6}$	0	$3.396 \cdot 10^{-6}$	$3.396 \cdot 10^{-6}$	0	
cWtil	$-7.579 \cdot 10^{-6}$	$-7.579 \cdot 10^{-6}$	0	$3.396 \cdot 10^{-6}$	$3.396 \cdot 10^{-6}$	0	
cll1	$1.404 \cdot 10^{-6}$	$1.404 \cdot 10^{-6}$	0	$6.383 \cdot 10^{-8}$	$6.383 \cdot 10^{-8}$	0	
sm	0	0	0	$5.418 \cdot 10^{-7}$	$5.418 \cdot 10^{-7}$	0	

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$7.629 \cdot 10^{-6}$	$7.629 \cdot 10^{-6}$	0	$7.46 \cdot 10^{-7}$	$7.46 \cdot 10^{-7}$	0
cHDD	$3.728 \cdot 10^{-6}$	$3.728 \cdot 10^{-6}$	0	$1.277 \cdot 10^{-6}$	$1.277 \cdot 10^{-6}$	0
cHW	$1.574 \cdot 10^{-7}$	$1.574 \cdot 10^{-7}$	0	$1.673 \cdot 10^{-6}$	$1.673 \cdot 10^{-6}$	0

cHWtil	$1.966 \cdot 10^{-7}$	$1.966 \cdot 10^{-7}$	0	$1.194 \cdot 10^{-6}$	$1.194 \cdot 10^{-6}$	0
cHbox	$-1.491 \cdot 10^{-5}$	$-1.491 \cdot 10^{-5}$	0	$2.043 \cdot 10^{-5}$	$2.043 \cdot 10^{-5}$	0
cH13	$-1.637 \cdot 10^{-5}$	$-1.637 \cdot 10^{-5}$	0	$1.489 \cdot 10^{-6}$	$1.489 \cdot 10^{-6}$	0
cHq3	$-5.224 \cdot 10^{-5}$	$-5.224 \cdot 10^{-5}$	0	0.0001157	0.0001157	0
$\mathtt{cHudIm}$	$1.047 \cdot 10^{-9}$	$1.047 \cdot 10^{-9}$	$3.343 \cdot 10^{-5}$	$1.642 \cdot 10^{-8}$	$1.642 \cdot 10^{-8}$	$6.688 \cdot 10^{-5}$
cHudRe	$-3.087 \cdot 10^{-8}$	$-3.087 \cdot 10^{-8}$	$3.343 \cdot 10^{-5}$	$4.983 \cdot 10^{-9}$	$4.983 \cdot 10^{-9}$	$6.689 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-1.743 \cdot 10^{-9}$	$-1.743 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$1.717 \cdot 10^{-9}$	$1.717 \cdot 10^{-9}$	$6.67 \cdot 10^{-5}$
cdHRe	$-1.295 \cdot 10^{-8}$	$-1.295 \cdot 10^{-8}$	$3.336 \cdot 10^{-5}$	$1.716 \cdot 10^{-9}$	$1.716 \cdot 10^{-9}$	$6.673 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$-4.001 \cdot 10^{-9}$	$-4 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$3.798 \cdot 10^{-9}$	$3.797 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$
cdWRe	$-1.349 \cdot 10^{-8}$	$-1.349 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	$4.034 \cdot 10^{-9}$	$4.034 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$
cll1	$8.186 \cdot 10^{-6}$	$8.186 \cdot 10^{-6}$	0	$3.722 \cdot 10^{-7}$	$3.722 \cdot 10^{-7}$	0
$\operatorname{cuHIm}$	$-1.445 \cdot 10^{-6}$	$-1.445 \cdot 10^{-6}$	0	$1.32\cdot 10^{-5}$	$1.32 \cdot 10^{-5}$	$7.573 \cdot 10^{-8}$
cuHRe	$1.613 \cdot 10^{-5}$	$1.613 \cdot 10^{-5}$	0	$7.932 \cdot 10^{-6}$	$7.932 \cdot 10^{-6}$	$6.304 \cdot 10^{-8}$
cuWIm	$5.338 \cdot 10^{-6}$	$5.338 \cdot 10^{-6}$	$3.747 \cdot 10^{-8}$	$6.891 \cdot 10^{-6}$	$6.891 \cdot 10^{-6}$	$5.805 \cdot 10^{-8}$
cuWRe	$-5.291 \cdot 10^{-6}$	$-5.291 \cdot 10^{-6}$	$3.78 \cdot 10^{-8}$	$6.481 \cdot 10^{-6}$	$6.481 \cdot 10^{-6}$	$6.172 \cdot 10^{-8}$
sm	0	0	0	$1.445 \cdot 10^{-5}$	$1.445 \cdot 10^{-5}$	0

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cН	$-1.823 \cdot 10^{-8}$	$-1.823 \cdot 10^{-8}$	0	$1.988 \cdot 10^{-8}$	$1.988 \cdot 10^{-8}$	0		
cHDD	$-5.479 \cdot 10^{-9}$	$-5.479 \cdot 10^{-9}$	0	$3.748 \cdot 10^{-10}$	$3.748 \cdot 10^{-10}$	0		
cHW	$-1.231 \cdot 10^{-6}$	$-1.231 \cdot 10^{-6}$	0	$1.155 \cdot 10^{-5}$	$1.155 \cdot 10^{-5}$	0		
cHWtil	$3.254 \cdot 10^{-7}$	$3.254 \cdot 10^{-7}$	0	$5.032 \cdot 10^{-7}$	$5.032 \cdot 10^{-7}$	0		
cHbox	$2.191 \cdot 10^{-8}$	$2.191 \cdot 10^{-8}$	0	$5.996 \cdot 10^{-9}$	$5.996 \cdot 10^{-9}$	0		
cH13	$2.106 \cdot 10^{-7}$	$2.106 \cdot 10^{-7}$	0	$6.589 \cdot 10^{-8}$	$6.589 \cdot 10^{-8}$	0		
$\mathtt{ceHIm}$	$2.338 \cdot 10^{-18}$	$2.338 \cdot 10^{-18}$	$-1.626 \cdot 10^{-6}$	$1.309 \cdot 10^{-18}$	$1.309 \cdot 10^{-18}$	$-3.208 \cdot 10^{-6}$		
ceHRe	$-1.352 \cdot 10^{-17}$	$-1.352 \cdot 10^{-17}$	$-1.627 \cdot 10^{-6}$	$1.016 \cdot 10^{-17}$	$1.016 \cdot 10^{-17}$	$-3.149 \cdot 10^{-6}$		

ceWIm	$-6.065 \cdot 10^{-18}$	$-6.065 \cdot 10^{-18}$	$-1.616 \cdot 10^{-6}$	$3.256 \cdot 10^{-18}$	$3.256 \cdot 10^{-18}$	$-3.225 \cdot 10^{-6}$
ceWRe	$-7.032 \cdot 10^{-18}$	$-7.032 \cdot 10^{-18}$	$-1.607 \cdot 10^{-6}$	$4.244 \cdot 10^{-19}$	$4.244 \cdot 10^{-19}$	$-3.228 \cdot 10^{-6}$
cll1	$3.06 \cdot 10^{-8}$	$3.06 \cdot 10^{-8}$	0	$1.391 \cdot 10^{-9}$	$1.391 \cdot 10^{-9}$	0
sm	0	0	0	$1.17 \cdot 10^{-7}$	$1.17 \cdot 10^{-7}$	0

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

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сН	$2.339 \cdot 10^{-9}$	$2.339 \cdot 10^{-9}$	0	$1.694 \cdot 10^{-9}$	$1.694 \cdot 10^{-9}$	0	
cHDD	$-4.654 \cdot 10^{-9}$	$-4.654 \cdot 10^{-9}$	0	$2.18 \cdot 10^{-9}$	$2.18 \cdot 10^{-9}$	0	
cHW	$1.003 \cdot 10^{-6}$	$1.003 \cdot 10^{-6}$	0	$3.549 \cdot 10^{-6}$	$3.549 \cdot 10^{-6}$	0	
cHWtil	$-1.179 \cdot 10^{-6}$	$-1.179 \cdot 10^{-6}$	0	$3.458 \cdot 10^{-6}$	$3.458 \cdot 10^{-6}$	0	
cHbox	$1.862 \cdot 10^{-8}$	$1.862 \cdot 10^{-8}$	0	$3.487 \cdot 10^{-8}$	$3.487 \cdot 10^{-8}$	0	
cH13	$-1.02 \cdot 10^{-7}$	$-1.02 \cdot 10^{-7}$	0	$9.278 \cdot 10^{-9}$	$9.278 \cdot 10^{-9}$	0	
сНqЗ	$1.937 \cdot 10^{-6}$	$1.937 \cdot 10^{-6}$	0	$3.345 \cdot 10^{-6}$	$3.345 \cdot 10^{-6}$	0	
$\mathtt{cHudIm}$	$-1.74 \cdot 10^{-25}$	$-1.74 \cdot 10^{-25}$	0	$9.261 \cdot 10^{-26}$	$9.261 \cdot 10^{-26}$	0	
cHudRe	$-4.295 \cdot 10^{-24}$	$-4.295 \cdot 10^{-24}$	0	$2.781 \cdot 10^{-25}$	$2.781 \cdot 10^{-25}$	0	
$\mathtt{cdHIm}$	$1.945 \cdot 10^{-15}$	$1.945 \cdot 10^{-15}$	0	$2.892 \cdot 10^{-15}$	$2.892 \cdot 10^{-15}$	0	
cdHRe	$-2.583 \cdot 10^{-15}$	$-2.583 \cdot 10^{-15}$	0	$2.892 \cdot 10^{-15}$	$2.892 \cdot 10^{-15}$	0	
$\mathtt{cdWIm}$	$1.744 \cdot 10^{-15}$	$1.744 \cdot 10^{-15}$	0	$3.996 \cdot 10^{-15}$	$3.996 \cdot 10^{-15}$	0	
cdWRe	$-1.079 \cdot 10^{-15}$	$-1.079 \cdot 10^{-15}$	0	$1.415 \cdot 10^{-16}$	$1.415 \cdot 10^{-16}$	0	
cll1	$5.101 \cdot 10^{-8}$	$5.101 \cdot 10^{-8}$	0	$2.319 \cdot 10^{-9}$	$2.319 \cdot 10^{-9}$	0	
cuHIm	$-1.598 \cdot 10^{-15}$	$-1.598 \cdot 10^{-15}$	0	$5.605 \cdot 10^{-16}$	$5.605 \cdot 10^{-16}$	0	
cuHRe	$-9.144 \cdot 10^{-16}$	$-9.144 \cdot 10^{-16}$	0	$5.605 \cdot 10^{-16}$	$5.605 \cdot 10^{-16}$	0	
cuWIm	$6.904 \cdot 10^{-17}$	$6.904 \cdot 10^{-17}$	0	$3.027 \cdot 10^{-17}$	$3.027 \cdot 10^{-17}$	0	
cuWRe	$1.62 \cdot 10^{-15}$	$1.62 \cdot 10^{-15}$	0	$8.567 \cdot 10^{-16}$	$8.567 \cdot 10^{-16}$	0	
sm	0	0	0	$7.877 \cdot 10^{-7}$	$7.877 \cdot 10^{-7}$	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	$5.115 \cdot 10^{-8}$	$5.115 \cdot 10^{-8}$	0	$1.879 \cdot 10^{-9}$	$1.879 \cdot 10^{-9}$	0	
сНВ	$3.496 \cdot 10^{-8}$	$3.496 \cdot 10^{-8}$	0	$3.089 \cdot 10^{-8}$	$3.089 \cdot 10^{-8}$	0	
cHBtil	$-5.543 \cdot 10^{-9}$	$-5.543 \cdot 10^{-9}$	0	$1.503 \cdot 10^{-8}$	$1.503 \cdot 10^{-8}$	0	
cHDD	$1.88 \cdot 10^{-8}$	$1.88 \cdot 10^{-8}$	0	$2.545 \cdot 10^{-9}$	$2.545 \cdot 10^{-9}$	0	
cHW	$9.67 \cdot 10^{-7}$	$9.67 \cdot 10^{-7}$	0	$2.539 \cdot 10^{-6}$	$2.539 \cdot 10^{-6}$	0	
cHWB	$1.275 \cdot 10^{-7}$	$1.275 \cdot 10^{-7}$	0	$1.045 \cdot 10^{-7}$	$1.045 \cdot 10^{-7}$	0	
cHWBtil	$-1.766 \cdot 10^{-8}$	$-1.766 \cdot 10^{-8}$	0	$4.906 \cdot 10^{-8}$	$4.906 \cdot 10^{-8}$	0	
cHWtil	$-4.664 \cdot 10^{-8}$	$-4.664 \cdot 10^{-8}$	0	$3.195 \cdot 10^{-7}$	$3.195 \cdot 10^{-7}$	0	
cHbox	$9.249 \cdot 10^{-8}$	$9.249 \cdot 10^{-8}$	0	$1.952 \cdot 10^{-8}$	$1.952 \cdot 10^{-8}$	0	
cHd	$-6.788 \cdot 10^{-7}$	$-6.788 \cdot 10^{-7}$	0	$1.006 \cdot 10^{-5}$	$1.006 \cdot 10^{-5}$	0	
cH13	$-4.47 \cdot 10^{-7}$	$-4.47\cdot10^{-7}$	0	$4.065 \cdot 10^{-8}$	$4.065 \cdot 10^{-8}$	0	
cHq1	$4.057 \cdot 10^{-6}$	$4.057 \cdot 10^{-6}$	0	$1.006 \cdot 10^{-5}$	$1.006 \cdot 10^{-5}$	0	
cHq3	$6.931 \cdot 10^{-6}$	$6.931 \cdot 10^{-6}$	0	$1.012 \cdot 10^{-5}$	$1.012 \cdot 10^{-5}$	0	
cdBIm	$-6.786 \cdot 10^{-11}$	$-6.786 \cdot 10^{-11}$	$3.336 \cdot 10^{-5}$	$4.087 \cdot 10^{-10}$	$4.087 \cdot 10^{-10}$	$6.675 \cdot 10^{-5}$	
cdBRe	$5.771 \cdot 10^{-10}$	$5.771 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$1.607 \cdot 10^{-9}$	$1.607 \cdot 10^{-9}$	$6.676 \cdot 10^{-5}$	
$\mathtt{cdHIm}$	$-1.952 \cdot 10^{-10}$	$-1.952 \cdot 10^{-10}$	$3.335 \cdot 10^{-5}$	$3.179 \cdot 10^{-9}$	$3.179 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$	
cdHRe	$-3.611 \cdot 10^{-9}$	$-3.611 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$3.18 \cdot 10^{-9}$	$3.179 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$	
$\mathtt{cdWIm}$	$-1.267 \cdot 10^{-10}$	$-1.267 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$1.425 \cdot 10^{-9}$	$1.425 \cdot 10^{-9}$	$6.673 \cdot 10^{-5}$	
cdWRe	$1.078 \cdot 10^{-9}$	$1.078 \cdot 10^{-9}$	$3.331 \cdot 10^{-5}$	$5.604 \cdot 10^{-9}$	$5.604 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$	
cll1	$2.235 \cdot 10^{-7}$	$2.235 \cdot 10^{-7}$	0	$1.016 \cdot 10^{-8}$	$1.016 \cdot 10^{-8}$	0	
sm	0	0	0	$4.26 \cdot 10^{-7}$	$4.26 \cdot 10^{-7}$	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	$3.589 \cdot 10^{-9}$	$3.589 \cdot 10^{-9}$	0	$8.427 \cdot 10^{-10}$	$8.427 \cdot 10^{-10}$	0
сНВ	$1.58 \cdot 10^{-7}$	$1.58 \cdot 10^{-7}$	0	$1.255 \cdot 10^{-8}$	$1.255 \cdot 10^{-8}$	0
cHBtil	$-1.894 \cdot 10^{-10}$	$-1.894 \cdot 10^{-10}$	0	$1.288 \cdot 10^{-9}$	$1.288 \cdot 10^{-9}$	0
cHDD	$2.438 \cdot 10^{-8}$	$2.438 \cdot 10^{-8}$	0	$1.646 \cdot 10^{-10}$	$1.646 \cdot 10^{-10}$	0
cHW	$3.6 \cdot 10^{-7}$	$3.6\cdot10^{-7}$	0	$2.975 \cdot 10^{-6}$	$2.975 \cdot 10^{-6}$	0
cHWB	$2.95 \cdot 10^{-7}$	$2.95 \cdot 10^{-7}$	0	$4.376 \cdot 10^{-8}$	$4.376 \cdot 10^{-8}$	0
cHWBtil	$-3.536 \cdot 10^{-10}$	$-3.536 \cdot 10^{-10}$	0	$4.492 \cdot 10^{-9}$	$4.492 \cdot 10^{-9}$	0
cHWtil	$-6.603 \cdot 10^{-10}$	$-6.603 \cdot 10^{-10}$	0	$1.567 \cdot 10^{-8}$	$1.567 \cdot 10^{-8}$	0
cHbox	$2.864 \cdot 10^{-7}$	$2.864 \cdot 10^{-7}$	0	$1.582 \cdot 10^{-8}$	$1.582 \cdot 10^{-8}$	0
cHl1	$-1.554 \cdot 10^{-5}$	$-1.554 \cdot 10^{-5}$	0	$4.591 \cdot 10^{-5}$	$4.591 \cdot 10^{-5}$	0
cH13	$3.983 \cdot 10^{-7}$	$3.983 \cdot 10^{-7}$	0	$1.906 \cdot 10^{-7}$	$1.906 \cdot 10^{-7}$	0
cll1	$3.784 \cdot 10^{-8}$	$3.784 \cdot 10^{-8}$	0	$1.72 \cdot 10^{-9}$	$1.72 \cdot 10^{-9}$	0
sm	0	0	0	$1.315 \cdot 10^{-6}$	$1.315 \cdot 10^{-6}$	0

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сН	$8.366 \cdot 10^{-10}$	$8.366 \cdot 10^{-10}$	0	$4.198 \cdot 10^{-11}$	$4.198 \cdot 10^{-11}$	0
сНВ	$2.5 \cdot 10^{-8}$	$2.5\cdot 10^{-8}$	0	$1.035 \cdot 10^{-7}$	$1.035 \cdot 10^{-7}$	0
cHBtil	$1.519 \cdot 10^{-8}$	$1.519 \cdot 10^{-8}$	0	$3.638 \cdot 10^{-8}$	$3.638 \cdot 10^{-8}$	0
cHDD	$1.864 \cdot 10^{-8}$	$1.864 \cdot 10^{-8}$	0	$2.211 \cdot 10^{-9}$	$2.211 \cdot 10^{-9}$	0
cHW	$1.361 \cdot 10^{-7}$	$1.361 \cdot 10^{-7}$	0	$4.771 \cdot 10^{-7}$	$4.771 \cdot 10^{-7}$	0
cHWB	$1.599 \cdot 10^{-7}$	$1.599 \cdot 10^{-7}$	0	$9.844 \cdot 10^{-8}$	$9.844 \cdot 10^{-8}$	0
cHWBtil	$9.161 \cdot 10^{-8}$	$9.161 \cdot 10^{-8}$	0	$3.377 \cdot 10^{-8}$	$3.377 \cdot 10^{-8}$	0
cHWtil	$2.892 \cdot 10^{-7}$	$2.892 \cdot 10^{-7}$	0	$2.14 \cdot 10^{-7}$	$2.14\cdot 10^{-7}$	0
cHbox	$6.991 \cdot 10^{-8}$	$6.991 \cdot 10^{-8}$	0	$8.093 \cdot 10^{-9}$	$8.093 \cdot 10^{-9}$	0
cH13	$-1.377 \cdot 10^{-7}$	$-1.377 \cdot 10^{-7}$	0	$1.253 \cdot 10^{-8}$	$1.253 \cdot 10^{-8}$	0

cHq1	$-3.701 \cdot 10^{-6}$	$-3.701 \cdot 10^{-6}$	0	$1.143 \cdot 10^{-5}$	$1.143 \cdot 10^{-5}$	0
cHq3	$5.07\cdot10^{-6}$	$5.07\cdot10^{-6}$	0	$2\cdot 10^{-5}$	$2\cdot 10^{-5}$	0
cHu	$1.563 \cdot 10^{-6}$	$1.563 \cdot 10^{-6}$	0	$1.143 \cdot 10^{-5}$	$1.143 \cdot 10^{-5}$	0
cll1	$6.887 \cdot 10^{-8}$	$6.887 \cdot 10^{-8}$	0	$3.131 \cdot 10^{-9}$	$3.131 \cdot 10^{-9}$	0
cuBIm	$-1.273 \cdot 10^{-12}$	$-1.273 \cdot 10^{-12}$	0	$1.336 \cdot 10^{-11}$	$1.336 \cdot 10^{-11}$	0
cuBRe	$5.061 \cdot 10^{-11}$	$5.061 \cdot 10^{-11}$	0	$1.337 \cdot 10^{-11}$	$1.337 \cdot 10^{-11}$	0
cuHIm	$9.497 \cdot 10^{-11}$	$9.497 \cdot 10^{-11}$	0	$1.322 \cdot 10^{-10}$	$1.322 \cdot 10^{-10}$	0
cuHRe	$-9.743 \cdot 10^{-11}$	$-9.743 \cdot 10^{-11}$	0	$1.322 \cdot 10^{-10}$	$1.322 \cdot 10^{-10}$	0
cuWIm	$2.529 \cdot 10^{-12}$	$2.529 \cdot 10^{-12}$	0	$3.297 \cdot 10^{-10}$	$3.297 \cdot 10^{-10}$	0
cuWRe	$-9.451 \cdot 10^{-11}$	$-9.451 \cdot 10^{-11}$	0	$4.662 \cdot 10^{-11}$	$4.662 \cdot 10^{-11}$	0
sm	0	0	0	$3.532 \cdot 10^{-7}$	$3.532 \cdot 10^{-7}$	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сН	$6.537 \cdot 10^{-9}$	$6.537 \cdot 10^{-9}$	0	$7.24 \cdot 10^{-10}$	$7.24 \cdot 10^{-10}$	0	
сНВ	$9.906 \cdot 10^{-7}$	$9.906 \cdot 10^{-7}$	0	$2.181 \cdot 10^{-6}$	$2.181 \cdot 10^{-6}$	0	
cHBtil	$1.376 \cdot 10^{-6}$	$1.376 \cdot 10^{-6}$	0	$2.112 \cdot 10^{-6}$	$2.112 \cdot 10^{-6}$	0	
cHDD	$-3.029 \cdot 10^{-6}$	$-3.029 \cdot 10^{-6}$	0	$2.127 \cdot 10^{-6}$	$2.127 \cdot 10^{-6}$	0	
cHW	$-1.494 \cdot 10^{-7}$	$-1.494 \cdot 10^{-7}$	0	$5.477 \cdot 10^{-6}$	$5.477 \cdot 10^{-6}$	0	
cHWB	$2.813 \cdot 10^{-6}$	$2.813 \cdot 10^{-6}$	0	$8.709 \cdot 10^{-6}$	$8.709 \cdot 10^{-6}$	0	
cHWBtil	$3.487 \cdot 10^{-6}$	$3.487 \cdot 10^{-6}$	0	$8.398 \cdot 10^{-6}$	$8.398 \cdot 10^{-6}$	0	
cHWtil	$8.225 \cdot 10^{-6}$	$8.225 \cdot 10^{-6}$	0	$4.738 \cdot 10^{-5}$	$4.738 \cdot 10^{-5}$	0	
cHbox	$-6.022 \cdot 10^{-6}$	$-6.022 \cdot 10^{-6}$	0	$8.998 \cdot 10^{-6}$	$8.998 \cdot 10^{-6}$	0	
cHd	$-2.968 \cdot 10^{-7}$	$-2.968 \cdot 10^{-7}$	0	$2.616 \cdot 10^{-7}$	$2.616 \cdot 10^{-7}$	0	
cH13	$-2.82 \cdot 10^{-8}$	$-2.82 \cdot 10^{-8}$	0	$2.564 \cdot 10^{-9}$	$2.564 \cdot 10^{-9}$	0	
cHq1	$1.712 \cdot 10^{-6}$	$1.712 \cdot 10^{-6}$	0	$2.632 \cdot 10^{-7}$	$2.632 \cdot 10^{-7}$	0	
cHq3	$3.589 \cdot 10^{-7}$	$3.589 \cdot 10^{-7}$	0	$4.28 \cdot 10^{-7}$	$4.28 \cdot 10^{-7}$	0	

$\mathtt{cdBIm}$	$1.733 \cdot 10^{-15}$	$1.733 \cdot 10^{-15}$	0	$4.993 \cdot 10^{-16}$	$4.993 \cdot 10^{-16}$	0
cdBRe	$4.86 \cdot 10^{-16}$	$4.86 \cdot 10^{-16}$	0	$1.756 \cdot 10^{-16}$	$1.756 \cdot 10^{-16}$	0
$\mathtt{cdHIm}$	$3.064 \cdot 10^{-15}$	$3.064 \cdot 10^{-15}$	0	$5.358 \cdot 10^{-16}$	$5.358 \cdot 10^{-16}$	0
cdHRe	$1.779 \cdot 10^{-15}$	$1.779 \cdot 10^{-15}$	0	$5.358 \cdot 10^{-16}$	$5.358 \cdot 10^{-16}$	0
$\mathtt{cdWIm}$	$3.235 \cdot 10^{-15}$	$3.235 \cdot 10^{-15}$	0	$1.741 \cdot 10^{-15}$	$1.741 \cdot 10^{-15}$	0
cdWRe	$9.076 \cdot 10^{-16}$	$9.076 \cdot 10^{-16}$	0	$6.124 \cdot 10^{-16}$	$6.124 \cdot 10^{-16}$	0
cll1	$1.41 \cdot 10^{-8}$	$1.41 \cdot 10^{-8}$	0	$6.411 \cdot 10^{-10}$	$6.411 \cdot 10^{-10}$	0
sm	0	0	0	$2.867 \cdot 10^{-6}$	$2.867 \cdot 10^{-6}$	0

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

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
сН	$2.501 \cdot 10^{-8}$	$2.501 \cdot 10^{-8}$	0	$6.911 \cdot 10^{-9}$	$6.911 \cdot 10^{-9}$	0		
сНВ	$3.135 \cdot 10^{-8}$	$3.135 \cdot 10^{-8}$	0	$9.655 \cdot 10^{-8}$	$9.655 \cdot 10^{-8}$	0		
cHBtil	$6.131 \cdot 10^{-9}$	$6.131 \cdot 10^{-9}$	0	$3.581 \cdot 10^{-8}$	$3.581 \cdot 10^{-8}$	0		
cHDD	$2.73 \cdot 10^{-9}$	$2.73 \cdot 10^{-9}$	0	$1.388 \cdot 10^{-9}$	$1.388 \cdot 10^{-9}$	0		
cHW	$3.486 \cdot 10^{-7}$	$3.486 \cdot 10^{-7}$	0	$3.318 \cdot 10^{-6}$	$3.318 \cdot 10^{-6}$	0		
cHWB	$8.156 \cdot 10^{-8}$	$8.156 \cdot 10^{-8}$	0	$5.755 \cdot 10^{-8}$	$5.755 \cdot 10^{-8}$	0		
cHWBtil	$1.557 \cdot 10^{-8}$	$1.557\cdot10^{-8}$	0	$2.379 \cdot 10^{-8}$	$2.379 \cdot 10^{-8}$	0		
cHWtil	$3.675 \cdot 10^{-8}$	$3.675 \cdot 10^{-8}$	0	$8.173 \cdot 10^{-8}$	$8.173 \cdot 10^{-8}$	0		
cHbox	$2.25 \cdot 10^{-8}$	$2.25\cdot 10^{-8}$	0	$2.38 \cdot 10^{-9}$	$2.38 \cdot 10^{-9}$	0		
сНе	$-1.71 \cdot 10^{-7}$	$-1.71 \cdot 10^{-7}$	0	$1.395 \cdot 10^{-7}$	$1.395 \cdot 10^{-7}$	0		
cHl1	$1.121 \cdot 10^{-6}$	$1.121 \cdot 10^{-6}$	0	$4.209 \cdot 10^{-6}$	$4.209 \cdot 10^{-6}$	0		
cH13	$1.647 \cdot 10^{-7}$	$1.647 \cdot 10^{-7}$	0	$1.056 \cdot 10^{-7}$	$1.056 \cdot 10^{-7}$	0		
ceBIm	$1.953 \cdot 10^{-20}$	$1.953 \cdot 10^{-20}$	$-1.587 \cdot 10^{-6}$	$1.414 \cdot 10^{-19}$	$1.414 \cdot 10^{-19}$	$-3.253 \cdot 10^{-6}$		
ceBRe	$-5.603 \cdot 10^{-19}$	$-5.603 \cdot 10^{-19}$	$-1.606 \cdot 10^{-6}$	$1.414 \cdot 10^{-19}$	$1.414 \cdot 10^{-19}$	$-3.253 \cdot 10^{-6}$		
$\mathtt{ceHIm}$	$-9.329 \cdot 10^{-18}$	$-9.329 \cdot 10^{-18}$	$-1.608 \cdot 10^{-6}$	$1.62 \cdot 10^{-18}$	$1.62 \cdot 10^{-18}$	$-3.271 \cdot 10^{-6}$		
ceHRe	$-2.674 \cdot 10^{-18}$	$-2.674 \cdot 10^{-18}$	$-1.608 \cdot 10^{-6}$	$4.975 \cdot 10^{-18}$	$4.975 \cdot 10^{-18}$	$-3.216 \cdot 10^{-6}$		

$\mathtt{ceWIm}$	$3.647 \cdot 10^{-20}$	$3.647 \cdot 10^{-20}$	$-1.618 \cdot 10^{-6}$	$4.931 \cdot 10^{-19}$	$4.931 \cdot 10^{-19}$	$-3.204 \cdot 10^{-6}$
ceWRe	$1.212 \cdot 10^{-18}$	$1.212 \cdot 10^{-18}$	$-1.651 \cdot 10^{-6}$	$6.045 \cdot 10^{-18}$	$6.045 \cdot 10^{-18}$	$-3.226 \cdot 10^{-6}$
cll1	$2.433 \cdot 10^{-8}$	$2.433 \cdot 10^{-8}$	0	$1.106 \cdot 10^{-9}$	$1.106 \cdot 10^{-9}$	0
sm	0	0	0	$1.229 \cdot 10^{-7}$	$1.229 \cdot 10^{-7}$	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	$-3.055 \cdot 10^{-7}$	$-3.055 \cdot 10^{-7}$	0	$2.499 \cdot 10^{-7}$	$2.499 \cdot 10^{-7}$	0	
сНВ	$-1.247 \cdot 10^{-5}$	$-1.247 \cdot 10^{-5}$	0	$1.576 \cdot 10^{-6}$	$1.576 \cdot 10^{-6}$	0	
cHBtil	$1.542 \cdot 10^{-7}$	$1.542 \cdot 10^{-7}$	0	$1.202 \cdot 10^{-6}$	$1.202 \cdot 10^{-6}$	0	
cHDD	$-3.978 \cdot 10^{-5}$	$-3.978 \cdot 10^{-5}$	0	$8.867 \cdot 10^{-6}$	$8.867 \cdot 10^{-6}$	0	
cHW	$-2.597 \cdot 10^{-5}$	$-2.597 \cdot 10^{-5}$	0	$4.142 \cdot 10^{-6}$	$4.142 \cdot 10^{-6}$	0	
cHWB	$-2.324 \cdot 10^{-5}$	$-2.324 \cdot 10^{-5}$	0	$2.394 \cdot 10^{-6}$	$2.394 \cdot 10^{-6}$	0	
cHWBtil	$9.647 \cdot 10^{-7}$	$9.647 \cdot 10^{-7}$	0	$1.667 \cdot 10^{-6}$	$1.667 \cdot 10^{-6}$	0	
cHWtil	$3.065 \cdot 10^{-6}$	$3.065 \cdot 10^{-6}$	0	$8.471 \cdot 10^{-6}$	$8.471 \cdot 10^{-6}$	0	
cHbox	$-1.142 \cdot 10^{-5}$	$-1.142 \cdot 10^{-5}$	0	$6.239 \cdot 10^{-5}$	$6.239 \cdot 10^{-5}$	0	
cH13	$-5.036 \cdot 10^{-5}$	$-5.036 \cdot 10^{-5}$	0	$4.579 \cdot 10^{-6}$	$4.579 \cdot 10^{-6}$	0	
cHq1	0.0001143	0.0001143	0	0.0001044	0.0001044	0	
cHq3	$-7.334 \cdot 10^{-5}$	$-7.334 \cdot 10^{-5}$	0	$6.661 \cdot 10^{-5}$	$6.661 \cdot 10^{-5}$	0	
сHu	-0.000123	-0.000123	0	0.0001043	0.0001043	0	
cll1	$2.518 \cdot 10^{-5}$	$2.518 \cdot 10^{-5}$	0	$1.145 \cdot 10^{-6}$	$1.145 \cdot 10^{-6}$	0	
cuBIm	$6.195 \cdot 10^{-6}$	$6.195 \cdot 10^{-6}$	$3.228 \cdot 10^{-8}$	$3.409 \cdot 10^{-5}$	$3.409 \cdot 10^{-5}$	$5.866 \cdot 10^{-8}$	
cuBRe	$-1.487 \cdot 10^{-5}$	$-1.487 \cdot 10^{-5}$	$6.724 \cdot 10^{-8}$	$4.589 \cdot 10^{-5}$	$4.589 \cdot 10^{-5}$	$4.359 \cdot 10^{-8}$	
cuHIm	$1.068 \cdot 10^{-6}$	$1.068 \cdot 10^{-6}$	$9.364 \cdot 10^{-8}$	$8.78 \cdot 10^{-6}$	$8.78 \cdot 10^{-6}$	$5.695 \cdot 10^{-8}$	
cuHRe	$-2.824 \cdot 10^{-5}$	$-2.824 \cdot 10^{-5}$	$3.542 \cdot 10^{-8}$	$9.923 \cdot 10^{-6}$	$9.923 \cdot 10^{-6}$	$6.047 \cdot 10^{-8}$	
cuWIm	$-3.451 \cdot 10^{-6}$	$-3.451 \cdot 10^{-6}$	$2.898 \cdot 10^{-8}$	$4.152 \cdot 10^{-5}$	$4.152 \cdot 10^{-5}$	$4.817 \cdot 10^{-8}$	
cuWRe	$2.777 \cdot 10^{-5}$	$2.777 \cdot 10^{-5}$	0	0.00016	0.00016	$6.25 \cdot 10^{-8}$	

 $\mathtt{sm} \qquad \qquad 0 \qquad \qquad 0 \qquad \qquad 0 \qquad \qquad 0.000247 \qquad 0.000247 \qquad \qquad 0$ 

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

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
сН	1.11	1.11	0	0.06606	0.06606	0
cHB	0.01409	0.01409	0	0.2007	0.2007	0
cHBtil	$2.486 \cdot 10^{-17}$	$2.486 \cdot 10^{-17}$	0	0.2	0.2	0
cHDD	-0.6035	-0.6035	0	0.4349	0.4349	0
cHW	0.1651	0.1651	0	3.064	3.064	0
cHWB	0.02632	0.02632	0	0.6997	0.6997	0
cHWBtil	$4.64 \cdot 10^{-17}$	$4.64 \cdot 10^{-17}$	0	0.6976	0.6976	0
cHWtil	$8.652 \cdot 10^{-17}$	$8.652 \cdot 10^{-17}$	0	2.433	2.433	0
cHbox	-1.233	-1.233	0	1.843	1.843	0
cH13	-1.152	-1.152	0	0.06982	0.06982	0
cll1	0.5759	0.5759	0	0.01746	0.01746	0
sm	0	0	0	0.2908	0.2908	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	$-2.499 \cdot 10^{-7}$	$-2.499 \cdot 10^{-7}$	0	$3.054 \cdot 10^{-8}$	$3.054 \cdot 10^{-8}$	0	
cHBtil	$-1.729 \cdot 10^{-7}$	$-1.729 \cdot 10^{-7}$	0	$3.054 \cdot 10^{-8}$	$3.054 \cdot 10^{-8}$	0	
cHDD	$-1.025 \cdot 10^{-5}$	$-1.025 \cdot 10^{-5}$	0	$3.486 \cdot 10^{-7}$	$3.486 \cdot 10^{-7}$	0	
cHW	$-1.557 \cdot 10^{-6}$	$-1.557 \cdot 10^{-6}$	0	$1.223 \cdot 10^{-6}$	$1.223 \cdot 10^{-6}$	0	
cHWB	$-1.151 \cdot 10^{-5}$	$-1.151 \cdot 10^{-5}$	0	$2.435 \cdot 10^{-6}$	$2.435 \cdot 10^{-6}$	0	
cHWBtil	$-5.417 \cdot 10^{-7}$	$-5.417 \cdot 10^{-7}$	0	$2.098 \cdot 10^{-6}$	$2.098 \cdot 10^{-6}$	0	

cHWtil	$4.93 \cdot 10^{-6}$	$4.93 \cdot 10^{-6}$	0	$2.834 \cdot 10^{-6}$	$2.834 \cdot 10^{-6}$	0
cHbox	$9.138 \cdot 10^{-6}$	$9.138 \cdot 10^{-6}$	0	$2.77 \cdot 10^{-7}$	$2.77 \cdot 10^{-7}$	0
cH13	$-2.983 \cdot 10^{-7}$	$-2.983 \cdot 10^{-7}$	0	$2.713 \cdot 10^{-8}$	$2.713 \cdot 10^{-8}$	0
сНqЗ	$-1.214 \cdot 10^{-7}$	$-1.214 \cdot 10^{-7}$	0	$1.961 \cdot 10^{-7}$	$1.961 \cdot 10^{-7}$	0
cHudIm	$2.724 \cdot 10^{-11}$	$2.724 \cdot 10^{-11}$	$3.345 \cdot 10^{-5}$	$2.783 \cdot 10^{-11}$	$2.783 \cdot 10^{-11}$	$6.691 \cdot 10^{-5}$
cHudRe	$-1.179 \cdot 10^{-8}$	$-1.179 \cdot 10^{-8}$	$3.35 \cdot 10^{-5}$	$2.519 \cdot 10^{-10}$	$2.519 \cdot 10^{-10}$	$6.689 \cdot 10^{-5}$
cW	$4.146 \cdot 10^{-7}$	$4.146 \cdot 10^{-7}$	0	$1.134 \cdot 10^{-6}$	$1.134 \cdot 10^{-6}$	0
cWtil	$1.304 \cdot 10^{-7}$	$1.304 \cdot 10^{-7}$	0	$1.134 \cdot 10^{-6}$	$1.134 \cdot 10^{-6}$	0
cdBIm	$7.753 \cdot 10^{-9}$	$7.753 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$3.131 \cdot 10^{-9}$	$3.131 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$
cdBRe	$6.877 \cdot 10^{-10}$	$6.877 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$7.041 \cdot 10^{-9}$	$7.04 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-5.324 \cdot 10^{-9}$	$-5.323 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$3.822 \cdot 10^{-10}$	$3.821 \cdot 10^{-10}$	$6.673 \cdot 10^{-5}$
cdHRe	$-8.513 \cdot 10^{-9}$	$-8.512 \cdot 10^{-9}$	$3.336 \cdot 10^{-5}$	$3.82 \cdot 10^{-10}$	$3.819 \cdot 10^{-10}$	$6.673 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$-1.992 \cdot 10^{-8}$	$-1.992 \cdot 10^{-8}$	$3.334 \cdot 10^{-5}$	$9.87 \cdot 10^{-9}$	$9.87 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$
cdWRe	$1.245 \cdot 10^{-10}$	$1.245 \cdot 10^{-10}$	$3.34 \cdot 10^{-5}$	$2.135 \cdot 10^{-9}$	$2.135 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$
cll1	$1.492 \cdot 10^{-7}$	$1.492 \cdot 10^{-7}$	0	$6.782 \cdot 10^{-9}$	$6.782 \cdot 10^{-9}$	0
cuBIm	$2.897 \cdot 10^{-6}$	$2.897 \cdot 10^{-6}$	$3.452 \cdot 10^{-8}$	$3.726 \cdot 10^{-6}$	$3.726 \cdot 10^{-6}$	$5.367 \cdot 10^{-8}$
cuBRe	$6.207 \cdot 10^{-6}$	$6.207 \cdot 10^{-6}$	$3.222 \cdot 10^{-8}$	$3.726 \cdot 10^{-6}$	$3.726 \cdot 10^{-6}$	$5.367 \cdot 10^{-8}$
cuHIm	$4.417 \cdot 10^{-6}$	$4.417 \cdot 10^{-6}$	$4.528 \cdot 10^{-8}$	$5.521 \cdot 10^{-7}$	$5.521 \cdot 10^{-7}$	$5.434 \cdot 10^{-8}$
cuHRe	$8.493 \cdot 10^{-7}$	$8.493 \cdot 10^{-7}$	$2.355 \cdot 10^{-8}$	$1.698 \cdot 10^{-7}$	$1.698 \cdot 10^{-7}$	$5.89 \cdot 10^{-8}$
cuWIm	$8.587 \cdot 10^{-8}$	$8.587 \cdot 10^{-8}$	$2.329 \cdot 10^{-8}$	$1.205 \cdot 10^{-6}$	$1.205 \cdot 10^{-6}$	$8.295 \cdot 10^{-8}$
cuWRe	$5.473 \cdot 10^{-5}$	$5.473 \cdot 10^{-5}$	$1.827 \cdot 10^{-8}$	$1.802 \cdot 10^{-5}$	$1.802 \cdot 10^{-5}$	$5.548 \cdot 10^{-8}$
sm	0	0	0	$7.536 \cdot 10^{-5}$	$7.536 \cdot 10^{-5}$	0

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
сНВ	$-4.701 \cdot 10^{-8}$	$-4.701 \cdot 10^{-8}$	0	$3.907 \cdot 10^{-8}$	$3.907 \cdot 10^{-8}$	0
cHBtil	$1.568 \cdot 10^{-9}$	$1.568 \cdot 10^{-9}$	0	$3.907 \cdot 10^{-8}$	$3.907 \cdot 10^{-8}$	0

$-6.788 \cdot 10^{-9}$	$-6.788 \cdot 10^{-9}$	0	$2.308 \cdot 10^{-10}$	$2.308 \cdot 10^{-10}$	0
$8.287 \cdot 10^{-9}$	$8.287 \cdot 10^{-9}$	0	$4.83 \cdot 10^{-8}$	$4.83 \cdot 10^{-8}$	0
$1.179 \cdot 10^{-7}$	$1.179 \cdot 10^{-7}$	0	$2.75 \cdot 10^{-7}$	$2.75 \cdot 10^{-7}$	0
$-1.586 \cdot 10^{-8}$	$-1.586 \cdot 10^{-8}$	0	$2.89 \cdot 10^{-7}$	$2.89 \cdot 10^{-7}$	0
$3.361 \cdot 10^{-9}$	$3.361 \cdot 10^{-9}$	0	$9.937 \cdot 10^{-7}$	$9.937 \cdot 10^{-7}$	0
$6.051 \cdot 10^{-9}$	$6.051 \cdot 10^{-9}$	0	$1.834 \cdot 10^{-10}$	$1.834 \cdot 10^{-10}$	0
$-9.049 \cdot 10^{-10}$	$-9.049 \cdot 10^{-10}$	0	$8.229 \cdot 10^{-11}$	$8.229 \cdot 10^{-11}$	0
$4.566 \cdot 10^{-8}$	$4.566 \cdot 10^{-8}$	0	$2.302 \cdot 10^{-7}$	$2.302 \cdot 10^{-7}$	0
$8.657 \cdot 10^{-27}$	$8.657 \cdot 10^{-27}$	0	$6.378 \cdot 10^{-27}$	$6.378 \cdot 10^{-27}$	0
$-4.785 \cdot 10^{-24}$	$-4.785 \cdot 10^{-24}$	0	$1.063 \cdot 10^{-25}$	$1.063 \cdot 10^{-25}$	0
$3.981 \cdot 10^{-9}$	$3.981 \cdot 10^{-9}$	0	$4.691 \cdot 10^{-9}$	$4.691 \cdot 10^{-9}$	0
$1.162 \cdot 10^{-9}$	$1.162 \cdot 10^{-9}$	0	$4.691 \cdot 10^{-9}$	$4.691 \cdot 10^{-9}$	0
$2.234 \cdot 10^{-17}$	$2.234 \cdot 10^{-17}$	0	$1.794 \cdot 10^{-16}$	$1.794 \cdot 10^{-16}$	0
$2.236 \cdot 10^{-16}$	$2.236 \cdot 10^{-16}$	0	$2.727 \cdot 10^{-16}$	$2.727 \cdot 10^{-16}$	0
$1.468 \cdot 10^{-17}$	$1.468 \cdot 10^{-17}$	0	$4.991 \cdot 10^{-16}$	$4.991 \cdot 10^{-16}$	0
$5.67 \cdot 10^{-16}$	$5.67 \cdot 10^{-16}$	0	$4.991 \cdot 10^{-16}$	$4.991 \cdot 10^{-16}$	0
$-6.133 \cdot 10^{-17}$		0	$1.427 \cdot 10^{-15}$	$1.427 \cdot 10^{-15}$	0
$-4.57 \cdot 10^{-17}$	$-4.57 \cdot 10^{-17}$	0	$1.428 \cdot 10^{-16}$	$1.428 \cdot 10^{-16}$	0
$4.525 \cdot 10^{-10}$	$4.525 \cdot 10^{-10}$	0	$2.057 \cdot 10^{-11}$	$2.057 \cdot 10^{-11}$	0
$-1.301 \cdot 10^{-15}$	$-1.301 \cdot 10^{-15}$	0	$5.3 \cdot 10^{-17}$	$5.3 \cdot 10^{-17}$	0
$-3.1 \cdot 10^{-15}$	$-3.1 \cdot 10^{-15}$	0	$5.3 \cdot 10^{-17}$	$5.3 \cdot 10^{-17}$	0
$-8.719 \cdot 10^{-17}$	$-8.719 \cdot 10^{-17}$	0	$3.453 \cdot 10^{-16}$	$3.453 \cdot 10^{-16}$	0
$-7.474 \cdot 10^{-15}$	$-7.474 \cdot 10^{-15}$	0	$3.453 \cdot 10^{-16}$	$3.453 \cdot 10^{-16}$	0
$4.369 \cdot 10^{-18}$	$4.369 \cdot 10^{-18}$	0	$1.121 \cdot 10^{-17}$	$1.121 \cdot 10^{-17}$	0
$-2.382 \cdot 10^{-15}$	$-2.382 \cdot 10^{-15}$	0	$3.925 \cdot 10^{-16}$	$3.925 \cdot 10^{-16}$	0
0	0	0	$4.991 \cdot 10^{-8}$	$4.991 \cdot 10^{-8}$	0
	$8.287 \cdot 10^{-9} \\ 1.179 \cdot 10^{-7} \\ -1.586 \cdot 10^{-8} \\ 3.361 \cdot 10^{-9} \\ 6.051 \cdot 10^{-9} \\ -9.049 \cdot 10^{-10} \\ 4.566 \cdot 10^{-8} \\ 8.657 \cdot 10^{-27} \\ -4.785 \cdot 10^{-24} \\ 3.981 \cdot 10^{-9} \\ 1.162 \cdot 10^{-9} \\ 2.234 \cdot 10^{-17} \\ 2.236 \cdot 10^{-16} \\ 1.468 \cdot 10^{-17} \\ 5.67 \cdot 10^{-16} \\ -6.133 \cdot 10^{-17} \\ -4.57 \cdot 10^{-17} \\ 4.525 \cdot 10^{-10} \\ -1.301 \cdot 10^{-15} \\ -3.1 \cdot 10^{-15} \\ -8.719 \cdot 10^{-17} \\ -7.474 \cdot 10^{-15} \\ 4.369 \cdot 10^{-18} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

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

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	-0.0003965	-0.0003965	0	$3.005 \cdot 10^{-6}$	$3.005 \cdot 10^{-6}$	0
cHW	0.01618	0.01618	0	0.07589	0.07589	0
cHWtil	$-1.599 \cdot 10^{-14}$	$-1.599 \cdot 10^{-14}$	0	0.07697	0.07697	0
cHbox	0.001586	0.001586	0	$4.808 \cdot 10^{-5}$	$4.808 \cdot 10^{-5}$	0
cH13	-0.003284	-0.003284	0	0.0001991	0.0001991	0
сНq3	0.2541	0.2541	0	1.192	1.192	0
$\mathtt{cHudIm}$	$3.762 \cdot 10^{-23}$	$3.762 \cdot 10^{-23}$	0	$3.3 \cdot 10^{-20}$	$3.3 \cdot 10^{-20}$	0
cHudRe	$-2.346 \cdot 10^{-19}$	$-2.346 \cdot 10^{-19}$	0	$3.188 \cdot 10^{-20}$	$3.188 \cdot 10^{-20}$	0
$\mathtt{cdHIm}$	$-2.412 \cdot 10^{-13}$	$-2.412 \cdot 10^{-13}$	0	$4.372 \cdot 10^{-11}$	$4.372 \cdot 10^{-11}$	0
cdHRe	$-6.565 \cdot 10^{-12}$	$-6.565 \cdot 10^{-12}$	0	$4.372 \cdot 10^{-11}$	$4.372 \cdot 10^{-11}$	0
$\mathtt{cdWIm}$	$-1.03 \cdot 10^{-13}$	$-1.03 \cdot 10^{-13}$	0	$7.92 \cdot 10^{-10}$	$7.92 \cdot 10^{-10}$	0
cdWRe	$-5.133 \cdot 10^{-11}$	$-5.133 \cdot 10^{-11}$	0	$8.221 \cdot 10^{-10}$	$8.221 \cdot 10^{-10}$	0
cll1	0.001642	0.001642	0	$4.978 \cdot 10^{-5}$	$4.978 \cdot 10^{-5}$	0
$\operatorname{cuHIm}$	$5.155 \cdot 10^{-14}$	$5.155 \cdot 10^{-14}$	0	$9.977 \cdot 10^{-12}$	$9.977 \cdot 10^{-12}$	0
cuHRe	$-1.636 \cdot 10^{-11}$	$-1.636 \cdot 10^{-11}$	0	$9.977 \cdot 10^{-12}$	$9.977 \cdot 10^{-12}$	0
cuWIm	$-2.243 \cdot 10^{-14}$	$-2.243 \cdot 10^{-14}$	0	$1.759 \cdot 10^{-10}$	$1.759 \cdot 10^{-10}$	0
cuWRe	$-7.436 \cdot 10^{-12}$	$-7.436 \cdot 10^{-12}$	0	$1.694 \cdot 10^{-10}$	$1.694 \cdot 10^{-10}$	0
sm	0	0	0	0.01308	0.01308	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.02405	-0.02405	0	0.0001823	0.0001823	0	
cHW	-0.04071	-0.04071	0	0.05277	0.05277	0	
cHWtil	$-2.098 \cdot 10^{-5}$	$-2.098 \cdot 10^{-5}$	0	0.05349	0.05349	0	
cHbox	0.0962	0.0962	0	0.002916	0.002916	0	
cH13	-0.1171	-0.1171	0	0.007099	0.007099	0	

cHq3	-1.429	-1.429	0	1.956	1.956	0
cHudIm	$-1.881 \cdot 10^{-7}$	$-1.881 \cdot 10^{-7}$	$3.344 \cdot 10^{-5}$	0.0002775	0.0002775	$6.691 \cdot 10^{-5}$
cHudRe	-0.001116	-0.001116	$3.35 \cdot 10^{-5}$	0.0002661	0.0002661	$6.692 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$1.896 \cdot 10^{-7}$	$1.896 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$3.716 \cdot 10^{-5}$	$3.716 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$
cdHRe	$-5.279 \cdot 10^{-5}$	$-5.279 \cdot 10^{-5}$	$3.336 \cdot 10^{-5}$	$3.716 \cdot 10^{-5}$	$3.716 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$-5.789 \cdot 10^{-9}$	$-5.789 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	0.001214	0.001214	$6.674 \cdot 10^{-5}$
cdWRe	-0.0001397	-0.0001397	$3.337 \cdot 10^{-5}$	0.001311	0.001311	$6.672 \cdot 10^{-5}$
cll1	0.05855	0.05855	0	0.001775	0.001775	0
$\mathtt{cuHIm}$	-0.001259	-0.001259	$7.941 \cdot 10^{-8}$	0.05663	0.05663	$5.298 \cdot 10^{-8}$
cuHRe	0.07891	0.07891	$3.802 \cdot 10^{-8}$	0.05041	0.05041	$5.951 \cdot 10^{-8}$
cuWIm	$2.117 \cdot 10^{-5}$	$2.117 \cdot 10^{-5}$	$4.724 \cdot 10^{-8}$	2.24	2.24	$4.464 \cdot 10^{-8}$
cuWRe	0.2411	0.2411	0	2.073	2.073	$4.824 \cdot 10^{-8}$
sm	0	0	0	0.7934	0.7934	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	$-4.968 \cdot 10^{-10}$	$-4.968 \cdot 10^{-10}$	0	$1.714 \cdot 10^{-8}$	$1.714 \cdot 10^{-8}$	0	
cHBtil	$-1.876 \cdot 10^{-9}$	$-1.876 \cdot 10^{-9}$	0	$1.714 \cdot 10^{-8}$	$1.714 \cdot 10^{-8}$	0	
cHDD	$-9.133 \cdot 10^{-10}$	$-9.133 \cdot 10^{-10}$	0	$3.105 \cdot 10^{-11}$	$3.105 \cdot 10^{-11}$	0	
cHW	$1.132 \cdot 10^{-8}$	$1.132 \cdot 10^{-8}$	0	$4.874 \cdot 10^{-8}$	$4.874 \cdot 10^{-8}$	0	
cHWB	$-2.911 \cdot 10^{-9}$	$-2.911 \cdot 10^{-9}$	0	$3.037 \cdot 10^{-8}$	$3.037 \cdot 10^{-8}$	0	
cHWBtil	$-1.161 \cdot 10^{-8}$	$-1.161 \cdot 10^{-8}$	0	$3.012 \cdot 10^{-8}$	$3.012 \cdot 10^{-8}$	0	
cHWtil	$-7.94 \cdot 10^{-10}$	$-7.94 \cdot 10^{-10}$	0	$2.788 \cdot 10^{-8}$	$2.788 \cdot 10^{-8}$	0	
cHbox	$8.141 \cdot 10^{-10}$	$8.141 \cdot 10^{-10}$	0	$2.468 \cdot 10^{-11}$	$2.468 \cdot 10^{-11}$	0	
cH13	$7.371 \cdot 10^{-8}$	$7.371 \cdot 10^{-8}$	0	$1.849 \cdot 10^{-7}$	$1.849 \cdot 10^{-7}$	0	
cM	$6.63 \cdot 10^{-9}$	$6.63 \cdot 10^{-9}$	0	$9.342 \cdot 10^{-9}$	$9.342 \cdot 10^{-9}$	0	
cWtil	$6.962 \cdot 10^{-10}$	$6.962 \cdot 10^{-10}$	0	$9.342 \cdot 10^{-9}$	$9.342 \cdot 10^{-9}$	0	

ceBIm	$1.565 \cdot 10^{-18}$	$1.565 \cdot 10^{-18}$	$-1.598 \cdot 10^{-6}$	$1.502 \cdot 10^{-18}$	$1.502 \cdot 10^{-18}$	$-3.196 \cdot 10^{-6}$
ceBRe	$6.717 \cdot 10^{-19}$	$6.717 \cdot 10^{-19}$	$-1.608 \cdot 10^{-6}$	$1.502 \cdot 10^{-18}$	$1.502 \cdot 10^{-18}$	$-3.196 \cdot 10^{-6}$
ceHIm	$-1.437 \cdot 10^{-19}$	$-1.437 \cdot 10^{-19}$	$-1.6 \cdot 10^{-6}$	$1.368 \cdot 10^{-19}$	$1.368 \cdot 10^{-19}$	$-3.216 \cdot 10^{-6}$
ceHRe	$3.893 \cdot 10^{-19}$	$3.893 \cdot 10^{-19}$	$-1.618 \cdot 10^{-6}$	$2.205 \cdot 10^{-19}$	$2.205 \cdot 10^{-19}$	$-3.22 \cdot 10^{-6}$
ceWIm	$-8.143 \cdot 10^{-19}$	$-8.143 \cdot 10^{-19}$	$-1.609 \cdot 10^{-6}$	$4.962 \cdot 10^{-18}$	$4.962 \cdot 10^{-18}$	$-3.204 \cdot 10^{-6}$
ceWRe	$7.488 \cdot 10^{-18}$	$7.488 \cdot 10^{-18}$	$-1.602 \cdot 10^{-6}$	$3.659 \cdot 10^{-18}$	$3.659 \cdot 10^{-18}$	$-3.225 \cdot 10^{-6}$
cll1	$1.429 \cdot 10^{-9}$	$1.429 \cdot 10^{-9}$	0	$6.495 \cdot 10^{-11}$	$6.495 \cdot 10^{-11}$	0
sm	0	0	0	$6.714 \cdot 10^{-9}$	$6.714 \cdot 10^{-9}$	0

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

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	-0.0002012	-0.0002012	0	$1.525 \cdot 10^{-6}$	$1.525 \cdot 10^{-6}$	0	
cHW	0.00542	0.00542	0	0.02542	0.02542	0	
cHWtil	$1.7 \cdot 10^{-12}$	$1.7 \cdot 10^{-12}$	0	0.02034	0.02034	0	
cHbox	0.0008048	0.0008048	0	$2.44 \cdot 10^{-5}$	$2.44\cdot 10^{-5}$	0	
cH13	0.0826	0.0826	0	0.3825	0.3825	0	
$\mathtt{ceHIm}$	$4.115 \cdot 10^{-11}$	$4.115 \cdot 10^{-11}$	$-2.916 \cdot 10^{-7}$	$7.461 \cdot 10^{-9}$	$7.461 \cdot 10^{-9}$	$-5.763 \cdot 10^{-7}$	
ceHRe	$-9.894 \cdot 10^{-10}$	$-9.894 \cdot 10^{-10}$	$-2.83 \cdot 10^{-7}$	$7.483 \cdot 10^{-9}$	$7.483 \cdot 10^{-9}$	$-5.746 \cdot 10^{-7}$	
ceWIm	$1.028 \cdot 10^{-11}$	$1.028 \cdot 10^{-11}$	$-2.918 \cdot 10^{-7}$	$2.109 \cdot 10^{-7}$	$2.109 \cdot 10^{-7}$	$-5.689 \cdot 10^{-7}$	
ceWRe	$-8.769 \cdot 10^{-9}$	$-8.769 \cdot 10^{-9}$	$-2.851 \cdot 10^{-7}$	$1.385 \cdot 10^{-7}$	$1.385 \cdot 10^{-7}$	$-5.778 \cdot 10^{-7}$	
cll1	0.0005408	0.0005408	0	$1.639 \cdot 10^{-5}$	$1.639 \cdot 10^{-5}$	0	
sm	0	0	0	0.006638	0.006638	0	

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

сНВ	$-3.003 \cdot 10^{-7}$	$-3.003 \cdot 10^{-7}$	0	0.005169	0.005169	0
cHBtil	$-8.344 \cdot 10^{-10}$	$-8.344 \cdot 10^{-10}$	0	0.005169	0.005169	0
cHDD	$-1.062 \cdot 10^{-5}$	$-1.062 \cdot 10^{-5}$	0	$3.61 \cdot 10^{-7}$	$3.61 \cdot 10^{-7}$	0
cHW	$-6.029 \cdot 10^{-7}$	$-6.029 \cdot 10^{-7}$	0	0.009142	0.009142	0
cHWB	$-1.673 \cdot 10^{-5}$	$-1.673 \cdot 10^{-5}$	0	0.006925	0.006925	0
cHWBtil	$-5.557 \cdot 10^{-10}$	$-5.557 \cdot 10^{-10}$	0	0.006924	0.006924	0
cHWtil	$8.344 \cdot 10^{-10}$	$8.344 \cdot 10^{-10}$	0	0.00933	0.00933	0
cHbox	$9.464 \cdot 10^{-6}$	$9.464 \cdot 10^{-6}$	0	$2.869 \cdot 10^{-7}$	$2.869 \cdot 10^{-7}$	0
cH13	$-1.85 \cdot 10^{-5}$	$-1.85 \cdot 10^{-5}$	0	$1.122 \cdot 10^{-6}$	$1.122 \cdot 10^{-6}$	0
$\mathtt{cdBIm}$	$-7.14 \cdot 10^{-21}$	$-7.14 \cdot 10^{-21}$	$3.333 \cdot 10^{-5}$	0.001257	0.001257	$6.672 \cdot 10^{-5}$
cdBRe	$-4.576 \cdot 10^{-8}$	$-4.576 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	0.001286	0.001286	$6.671 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-4.235 \cdot 10^{-22}$	$8.47 \cdot 10^{-22}$	3	$2.869 \cdot 10^{-7}$	$2.869 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
cdHRe	$-9.464 \cdot 10^{-6}$	$-9.464 \cdot 10^{-6}$	$3.337 \cdot 10^{-5}$	$2.869 \cdot 10^{-7}$	$2.869 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$3.825 \cdot 10^{-21}$	$3.826 \cdot 10^{-21}$	-0.0001829	0.0003606	0.0003606	$6.675 \cdot 10^{-5}$
cdWRe	$2.451 \cdot 10^{-8}$	$2.451 \cdot 10^{-8}$	$3.338 \cdot 10^{-5}$	0.0003688	0.0003688	$6.672 \cdot 10^{-5}$
cll1	$9.252 \cdot 10^{-6}$	$9.252 \cdot 10^{-6}$	0	$2.805 \cdot 10^{-7}$	$2.805 \cdot 10^{-7}$	0
sm	0	0	0	$7.805 \cdot 10^{-5}$	$7.805 \cdot 10^{-5}$	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHB	$-1.084 \cdot 10^{-5}$	$-1.084 \cdot 10^{-5}$	0	0.02822	0.02822	0	
cHBtil	$-1.769 \cdot 10^{-9}$	$-1.769 \cdot 10^{-9}$	0	0.02822	0.02822	0	
cHDD	$-1.342 \cdot 10^{-5}$	$-1.342 \cdot 10^{-5}$	0	$4.563 \cdot 10^{-7}$	$4.563 \cdot 10^{-7}$	0	
cHW	$-9.531 \cdot 10^{-7}$	$-9.531 \cdot 10^{-7}$	0	0.01118	0.01118	0	
cHWB	$-1.333 \cdot 10^{-5}$	$-1.333 \cdot 10^{-5}$	0	0.01762	0.01762	0	
cHWBtil	$-1.178 \cdot 10^{-9}$	$-1.178 \cdot 10^{-9}$	0	0.01762	0.01762	0	
cHWtil	$1.769 \cdot 10^{-9}$	$1.769 \cdot 10^{-9}$	0	0.0151	0.0151	0	

cHbox	$1.196 \cdot 10^{-5}$	$1.196 \cdot 10^{-5}$	0	$3.626 \cdot 10^{-7}$	$3.626 \cdot 10^{-7}$	0
cH13	$-9.072 \cdot 10^{-6}$	$-9.072 \cdot 10^{-6}$	0	$5.5 \cdot 10^{-7}$	$5.5\cdot10^{-7}$	0
cll1	$4.536 \cdot 10^{-6}$	$4.536 \cdot 10^{-6}$	0	$1.375 \cdot 10^{-7}$	$1.375 \cdot 10^{-7}$	0
cuBIm	$2.001 \cdot 10^{-22}$	$2.001 \cdot 10^{-22}$	0	$3.391 \cdot 10^{-5}$	$3.391 \cdot 10^{-5}$	0
cuBRe	$2.73 \cdot 10^{-9}$	$2.73 \cdot 10^{-9}$	0	$3.391 \cdot 10^{-5}$	$3.391 \cdot 10^{-5}$	0
cuHIm	$-1.694 \cdot 10^{-21}$	$-1.694 \cdot 10^{-21}$	0	$3.626 \cdot 10^{-7}$	$3.626 \cdot 10^{-7}$	0
cuHRe	$-1.196 \cdot 10^{-5}$	$-1.196 \cdot 10^{-5}$	0	$3.626 \cdot 10^{-7}$	$3.626 \cdot 10^{-7}$	0
cuWIm	$6.193 \cdot 10^{-27}$	$6.193 \cdot 10^{-27}$	0	$2.564 \cdot 10^{-5}$	$2.564 \cdot 10^{-5}$	0
cuWRe	$1.462 \cdot 10^{-9}$	$1.462 \cdot 10^{-9}$	0	$9.724 \cdot 10^{-6}$	$9.724 \cdot 10^{-6}$	0
sm	0	0	0	$9.866 \cdot 10^{-5}$	$9.866 \cdot 10^{-5}$	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	$-1.448 \cdot 10^{-10}$	$-1.448 \cdot 10^{-10}$	0	0.009537	0.009537	0	
cHBtil	$1.042 \cdot 10^{-13}$	$1.042 \cdot 10^{-13}$	0	0.009537	0.009537	0	
cHDD	$-3.431 \cdot 10^{-10}$	$-3.431 \cdot 10^{-10}$	0	$1.167 \cdot 10^{-11}$	$1.167 \cdot 10^{-11}$	0	
cHW	$-7.677 \cdot 10^{-12}$	$-7.677 \cdot 10^{-12}$	0	0.01153	0.01153	0	
cHWB	$-1.171 \cdot 10^{-10}$	$-1.171 \cdot 10^{-10}$	0	0.01277	0.01277	0	
cHWBtil	$6.94 \cdot 10^{-14}$	$6.94 \cdot 10^{-14}$	0	0.01277	0.01277	0	
cHWtil	$-1.042 \cdot 10^{-13}$	$-1.042 \cdot 10^{-13}$	0	0.01721	0.01721	0	
cHbox	$3.059 \cdot 10^{-10}$	$3.059 \cdot 10^{-10}$	0	$9.271 \cdot 10^{-12}$	$9.271 \cdot 10^{-12}$	0	
cH13	$-3.228 \cdot 10^{-11}$	$-3.228 \cdot 10^{-11}$	0	$1.957 \cdot 10^{-12}$	$1.957 \cdot 10^{-12}$	0	
cdBIm	$5.369 \cdot 10^{-28}$	$5.369 \cdot 10^{-28}$	0	$6.061 \cdot 10^{-11}$	$6.061 \cdot 10^{-11}$	0	
cdBRe	$-9.744 \cdot 10^{-20}$	$-9.744 \cdot 10^{-20}$	0	$1.149 \cdot 10^{-9}$	$1.149 \cdot 10^{-9}$	0	
cdHIm	$1.939 \cdot 10^{-26}$	$1.939 \cdot 10^{-26}$	0	$9.271 \cdot 10^{-12}$	$9.271 \cdot 10^{-12}$	0	
cdHRe	$-3.059 \cdot 10^{-10}$	$-3.059 \cdot 10^{-10}$	0	$9.271 \cdot 10^{-12}$	$9.271 \cdot 10^{-12}$	0	
$\mathtt{cdWIm}$	$-2.875 \cdot 10^{-28}$	$-2.875 \cdot 10^{-28}$	0	$1.738 \cdot 10^{-11}$	$1.738 \cdot 10^{-11}$	0	

cdWRe	$5.218 \cdot 10^{-20}$	$5.218 \cdot 10^{-20}$	0	$3.294 \cdot 10^{-10}  3.294 \cdot 10^{-10}$	0
cll1	$1.614 \cdot 10^{-11}$	$1.614 \cdot 10^{-11}$	0	$4.892 \cdot 10^{-13}  4.892 \cdot 10^{-13}$	0
sm	0	0	0	$2.523 \cdot 10^{-9}$ $2.523 \cdot 10^{-9}$	0

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

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сНВ	$-4.326 \cdot 10^{-13}$	$-4.326 \cdot 10^{-13}$	0	0.02049	0.02049	0	
cHBtil	$-5.144 \cdot 10^{-17}$	$-5.144 \cdot 10^{-17}$	0	0.02049	0.02049	0	
cHDD	$-7.689 \cdot 10^{-13}$	$-7.689 \cdot 10^{-13}$	0	$2.615 \cdot 10^{-14}$	$2.615 \cdot 10^{-14}$	0	
cHW	$-4.547 \cdot 10^{-14}$	$-4.547 \cdot 10^{-14}$	0	0.003449	0.003449	0	
cHWB	$-1.029 \cdot 10^{-12}$	$-1.029 \cdot 10^{-12}$	0	0.0071	0.0071	0	
cHWBtil	$-3.426 \cdot 10^{-17}$	$-3.426 \cdot 10^{-17}$	0	0.0071	0.0071	0	
cHWtil	$5.144 \cdot 10^{-17}$	$5.144 \cdot 10^{-17}$	0	0.004131	0.004131	0	
cHbox	$6.855 \cdot 10^{-13}$	$6.855 \cdot 10^{-13}$	0	$2.078 \cdot 10^{-14}$		0	
cH13	$-9.757 \cdot 10^{-13}$	$-9.757 \cdot 10^{-13}$	0	$5.915 \cdot 10^{-14}$		0	
ceBIm	$-1.528 \cdot 10^{-29}$	$-1.528 \cdot 10^{-29}$	$-1.57 \cdot 10^{-6}$	$3.877 \cdot 10^{-12}$	$3.877 \cdot 10^{-12}$	$-3.224 \cdot 10^{-6}$	
ceBRe	$-4.148 \cdot 10^{-23}$	$-4.148 \cdot 10^{-23}$	$-1.615 \cdot 10^{-6}$	$3.877 \cdot 10^{-12}$	$3.877 \cdot 10^{-12}$	$-3.224 \cdot 10^{-6}$	
ceHIm	$-3.787 \cdot 10^{-29}$	$-1.262 \cdot 10^{-29}$	0.6667	$1.479 \cdot 10^{-14}$	$1.479 \cdot 10^{-14}$	$-3.246 \cdot 10^{-6}$	
ceHRe	$-6.855 \cdot 10^{-13}$	$-6.855 \cdot 10^{-13}$	$-1.605 \cdot 10^{-6}$	$2.078 \cdot 10^{-14}$	$2.078 \cdot 10^{-14}$	$-3.225 \cdot 10^{-6}$	
ceWIm	$8.184 \cdot 10^{-30}$	$8.184 \cdot 10^{-30}$	$-1.601 \cdot 10^{-6}$	$1.112 \cdot 10^{-12}$	$1.112 \cdot 10^{-12}$	$-3.238 \cdot 10^{-6}$	
ceWRe	$7.878 \cdot 10^{-24}$	$7.878 \cdot 10^{-24}$	$-1.612 \cdot 10^{-6}$	$1.562 \cdot 10^{-12}$	$1.562 \cdot 10^{-12}$	$-3.265 \cdot 10^{-6}$	
cll1	$4.878 \cdot 10^{-13}$	$4.878 \cdot 10^{-13}$	0	$1.479 \cdot 10^{-14}$		0	
sm	0	0	0	$5.653 \cdot 10^{-12}$	$5.653 \cdot 10^{-12}$	0	

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

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
cHB	-0.01031	-0.01031	0	0.0175	0.0175	0
cHBtil	$4.024 \cdot 10^{-6}$	$4.024 \cdot 10^{-6}$	0	0.0175	0.0175	0
cHDD	-0.05445	-0.05445	0	0.001852	0.001852	0
cHW	-0.02162	-0.02162	0	0.01085	0.01085	0
cHWB	-0.08208	-0.08208	0	0.01527	0.01527	0
cHWBtil	$2.68 \cdot 10^{-6}$	$2.68 \cdot 10^{-6}$	0	0.01111	0.01111	0
cHWtil	$-4.024 \cdot 10^{-6}$	$-4.024 \cdot 10^{-6}$	0	0.00887	0.00887	0
cHbox	0.04854	0.04854	0	0.001471	0.001471	0
cH13	-0.1273	-0.1273	0	0.00772	0.00772	0
cll1	0.06367	0.06367	0	0.00193	0.00193	0
cuBIm	$4.95 \cdot 10^{-17}$	$4.602 \cdot 10^{-17}$	0.07023	2.742	2.742	$7.293 \cdot 10^{-8}$
cuBRe	0.2595	0.2595	0	2.742	2.742	$7.293 \cdot 10^{-8}$
cuHIm	$-3.704 \cdot 10^{-18}$	$-7.224 \cdot 10^{-20}$	0.9805	0.001862	0.001862	$5.37 \cdot 10^{-8}$
cuHRe	-0.04854	-0.04854	$2.06 \cdot 10^{-8}$	0.001471	0.001471	$6.796 \cdot 10^{-8}$
cuWIm	$-2.266 \cdot 10^{-17}$	$-2.874 \cdot 10^{-17}$	-0.2685	0.6321	0.6321	$6.328 \cdot 10^{-8}$
cuWRe	0.139	0.139	$7.197 \cdot 10^{-8}$	0.7864	0.7864	$5.086 \cdot 10^{-8}$
sm	0	0	0	0.4004	0.4004	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	0.0002634	0.0002634	0	0.003112	0.003112	0	
cHBtil	$1.751 \cdot 10^{-7}$	$1.751 \cdot 10^{-7}$	0	0.003112	0.003112	0	
cHDD	$5.926 \cdot 10^{-5}$	$5.926 \cdot 10^{-5}$	0	$2.572 \cdot 10^{-5}$	$2.572 \cdot 10^{-5}$	0	
cHW	0.002572	0.002572	0	0.01306	0.01306	0	
cHWB	0.0007119	0.0007119	0	0.002141	0.002141	0	
cHWBtil	$1.166 \cdot 10^{-7}$	$1.166 \cdot 10^{-7}$	0	0.002184	0.002184	0	

cHWtil	$-1.751 \cdot 10^{-7}$	$-1.751 \cdot 10^{-7}$	0	0.007631	0.007631	0
cHbox	0.0003553	0.0003553	0	$1.077 \cdot 10^{-5}$	$1.077 \cdot 10^{-5}$	0
сНе	-0.005487	-0.005487	0	0.04488	0.04488	0
cHl1	0.04682	0.04682	0	0.3079	0.3079	0
cH13	0.006719	0.006719	0	0.04405	0.04405	0
ceBIm	$-6.78 \cdot 10^{-12}$	$-6.78 \cdot 10^{-12}$	$-2.95 \cdot 10^{-7}$	$4.94 \cdot 10^{-8}$	$4.94\cdot10^{-8}$	$-5.668 \cdot 10^{-7}$
ceBRe	$-5.53 \cdot 10^{-10}$	$-5.53 \cdot 10^{-10}$	$-2.893 \cdot 10^{-7}$	$4.94 \cdot 10^{-8}$	$4.94 \cdot 10^{-8}$	$-5.668 \cdot 10^{-7}$
ceHIm	$-4.833 \cdot 10^{-14}$	$-4.833 \cdot 10^{-14}$	$-2.897 \cdot 10^{-7}$	$9.157 \cdot 10^{-9}$	$9.157 \cdot 10^{-9}$	$-5.679 \cdot 10^{-7}$
ceHRe	$1.477 \cdot 10^{-9}$	$1.477 \cdot 10^{-9}$	$-2.708 \cdot 10^{-7}$	$7.463 \cdot 10^{-9}$	$7.463 \cdot 10^{-9}$	$-5.762 \cdot 10^{-7}$
ceWIm	$-1.266 \cdot 10^{-11}$	$-1.266 \cdot 10^{-11}$	$-2.37 \cdot 10^{-7}$	$1.723 \cdot 10^{-7}$	$1.723 \cdot 10^{-7}$	$-5.805 \cdot 10^{-7}$
ceWRe	$-1.033 \cdot 10^{-9}$	$-1.033 \cdot 10^{-9}$	$-2.905 \cdot 10^{-7}$	$1.645 \cdot 10^{-8}$	$1.645 \cdot 10^{-8}$	$-6.078 \cdot 10^{-7}$
cll1	$5.183 \cdot 10^{-5}$	$5.183 \cdot 10^{-5}$	0	$1.571 \cdot 10^{-6}$	$1.571 \cdot 10^{-6}$	0
sm	0	0	0	0.002931	0.002931	0

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

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHB	0.0007435	0.0007435	0	0.000604	0.000604	0		
cHBtil	0	0	0	0.000604	0.000604	0		
cHDD	$3.071 \cdot 10^{-18}$	$3.071 \cdot 10^{-18}$	0	$4.287 \cdot 10^{-34}$	$4.287 \cdot 10^{-34}$	0		
cHW	0.00241	0.00241	0	0.006827	0.006827	0		
cHWB	0.001388	0.001388	0	0.002106	0.002106	0		
cHWBtil	$9.035 \cdot 10^{-20}$	$9.035 \cdot 10^{-20}$	0	0.002106	0.002106	0		
cHWtil	$1.084 \cdot 10^{-19}$	$1.084 \cdot 10^{-19}$	0	0.007345	0.007345	0		
cHbox	0.00074	0.00074	0	$2.243 \cdot 10^{-5}$	$2.243 \cdot 10^{-5}$	0		
cHl1	-0.08899	-0.08899	0	0.3244	0.3244	0		
cH13	0.09423	0.09423	0	0.3378	0.3378	0		
cll1	0.0007968	0.0007968	0	$2.415 \cdot 10^{-5}$	$2.415 \cdot 10^{-5}$	0		

0 0 0 0 0 0 0.006103 0.006103

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

	interference			square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
сНВ	0.0008717	0.0008717	0	$0.001025 \qquad 0.001025 \qquad 0$
cHBtil	$1.565 \cdot 10^{-7}$	$1.565 \cdot 10^{-7}$	0	$0.001025 \qquad 0.001025 \qquad 0$
cHDD	0.0004001	0.0004001	0	$1.757 \cdot 10^{-5}$ $1.757 \cdot 10^{-5}$ 0
cHW	0.008272	0.008272	0	$0.02768 \qquad 0.02768 \qquad 0$
cHWB	0.003048	0.003048	0	$0.003635 \qquad 0.003635 \qquad 0$
cHWBtil	$1.03\cdot 10^{-7}$	$1.03 \cdot 10^{-7}$	0	0.0036 $0.0036$ $0$
cHWtil	$-1.61 \cdot 10^{-7}$	$-1.61 \cdot 10^{-7}$	0	0.0225 $0.0225$ $0$
cHbox	0.001608	0.001608	0	$4.875 \cdot 10^{-5}  4.875 \cdot 10^{-5}$
cHd	-0.0374	-0.0374	0	0.948 $0.948$ $0$
cH13	-0.00239	-0.00239	0	$0.0001449 \qquad 0.0001449 \qquad 0$
cHq1	0.2202	0.2202	0	0.948 $0.948$ $0$
сНqЗ	0.1619	0.1619	0	$0.6983 \qquad 0.6983 \qquad 0$
cdBIm	$-2.863 \cdot 10^{-8}$	$-2.863 \cdot 10^{-8}$	$3.336 \cdot 10^{-5}$	$0.0002384  0.0002384  6.672 \cdot 10^{-5}$
cdBRe	$-1.678 \cdot 10^{-5}$	$-1.678 \cdot 10^{-5}$	$3.338 \cdot 10^{-5}$	$0.0001721  0.0001721  6.677 \cdot 10^{-5}$
cdHIm	$-3.741 \cdot 10^{-11}$	$-3.741 \cdot 10^{-11}$	$3.339 \cdot 10^{-5}$	$3.533 \cdot 10^{-5}  3.533 \cdot 10^{-5}  6.674 \cdot 10^{-5}$
cdHRe	$-2.768 \cdot 10^{-6}$	$-2.768 \cdot 10^{-6}$	$3.338 \cdot 10^{-5}$	$3.533 \cdot 10^{-5}  3.533 \cdot 10^{-5}  6.674 \cdot 10^{-5}$
cdWIm	$-5.346 \cdot 10^{-8}$	$-5.346 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	$0.0008315  0.0008315  6.673 \cdot 10^{-5}$
cdWRe	$-3.133 \cdot 10^{-5}$	$-3.133 \cdot 10^{-5}$	$3.336 \cdot 10^{-5}$	$0.0006 \qquad 0.0006 \qquad 6.675 \cdot 10^{-5}$
cll1	0.001195	0.001195	0	$3.622 \cdot 10^{-5}  3.622 \cdot 10^{-5}$
sm	0	0	0	$0.01326 \qquad 0.01326 \qquad 0$

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

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	0.0008024	0.0008024	0	0.0009337	0.0009337	0
cHBtil	$3.676 \cdot 10^{-8}$	$3.676 \cdot 10^{-8}$	0	0.0009337	0.0009337	0
cHDD	0.000434	0.000434	0	$9.702 \cdot 10^{-6}$	$9.702 \cdot 10^{-6}$	0
cHW	0.006618	0.006618	0	0.02199	0.02199	0
cHWB	0.002865	0.002865	0	0.003312	0.003312	0
cHWBtil	$2.448 \cdot 10^{-8}$	$2.448 \cdot 10^{-8}$	0	0.003279	0.003279	0
cHWtil	$-3.676 \cdot 10^{-8}$	$-3.676 \cdot 10^{-8}$	0	0.02049	0.02049	0
cHbox	0.001781	0.001781	0	$5.398 \cdot 10^{-5}$	$5.398 \cdot 10^{-5}$	0
cHd	-0.04259	-0.04259	0	1.045	1.045	0
cH13	-0.003315	-0.003315	0	0.000201	0.000201	0
cHq1	0.2441	0.2441	0	1.045	1.045	0
cHq3	0.2272	0.2272	0	0.9728	0.9728	0
$\mathtt{cdBIm}$	$-3.308 \cdot 10^{-12}$	$-3.308 \cdot 10^{-12}$	0	$1.308 \cdot 10^{-7}$	$1.308 \cdot 10^{-7}$	0
cdBRe	$-8.321 \cdot 10^{-9}$	$-8.321 \cdot 10^{-9}$	0	$1.213 \cdot 10^{-7}$	$1.213 \cdot 10^{-7}$	0
$\mathtt{cdHIm}$	$-3.893 \cdot 10^{-15}$	$-3.893 \cdot 10^{-15}$	0	$1.744 \cdot 10^{-8}$	$1.744 \cdot 10^{-8}$	0
cdHRe	$1.761 \cdot 10^{-10}$	$1.761 \cdot 10^{-10}$	0	$1.744 \cdot 10^{-8}$	$1.744 \cdot 10^{-8}$	0
$\mathtt{cdWIm}$	$-6.177 \cdot 10^{-12}$	$-6.177 \cdot 10^{-12}$	0	$4.56 \cdot 10^{-7}$	$4.56 \cdot 10^{-7}$	0
cdWRe	$-1.554 \cdot 10^{-8}$	$-1.554 \cdot 10^{-8}$	0	$4.229 \cdot 10^{-7}$	$4.229 \cdot 10^{-7}$	0
cll1	0.001658	0.001658	0	$5.025 \cdot 10^{-5}$	$5.025 \cdot 10^{-5}$	0
sm	0	0	0	0.01469	0.01469	0

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	-0.01222	-0.01222	0	0.004162	0.004162	0	
cHBtil	$-4.212 \cdot 10^{-7}$	$-4.212 \cdot 10^{-7}$	0	0.004162	0.004162	0	

cHDD	0.01432	0.01432	0	0.01763	0.01763	0
cHW	-0.04606	-0.04606	0	0.02648	0.02648	0
cHWB	-0.01043	-0.01043	0	0.004907	0.004907	0
cHWBtil	$-9.508 \cdot 10^{-7}$	$-9.508 \cdot 10^{-7}$	0	0.003818	0.003818	0
cHWtil	$-2.082 \cdot 10^{-6}$	$-2.082 \cdot 10^{-6}$	0	0.02588	0.02588	0
cHbox	0.2201	0.2201	0	0.006671	0.006671	0
cH13	-0.4538	-0.4538	0	0.02751	0.02751	0
cHq1	2.083	2.083	0	1.475	1.475	0
cHq3	-2.084	-2.084	0	1.438	1.438	0
cHu	-2.243	-2.243	0	1.475	1.475	0
cll1	0.2269	0.2269	0	0.006879	0.006879	0
cuBIm	$5.147 \cdot 10^{-5}$	$5.147 \cdot 10^{-5}$	$1.943 \cdot 10^{-8}$	0.8169	0.8169	$4.897 \cdot 10^{-8}$
cuBRe	-0.01915	-0.01915	0	0.8277	0.8277	$6.041 \cdot 10^{-8}$
cuHIm	$4.549 \cdot 10^{-5}$	$4.549 \cdot 10^{-5}$	$2.198 \cdot 10^{-8}$	0.06804	0.06804	$5.879 \cdot 10^{-8}$
cuHRe	0.004567	0.004567	$2.19 \cdot 10^{-8}$	0.06818	0.06818	$5.866 \cdot 10^{-8}$
cuWIm	0.0001542	0.0001542	0	2.79	2.79	$3.584 \cdot 10^{-8}$
cuWRe	0.03577	0.03577	$2.796 \cdot 10^{-8}$	2.886	2.886	$6.93 \cdot 10^{-8}$
sm	0	0	0	1.815	1.815	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	0.0005739	0.0005739	0	0.005244	0.005244	0
cHBtil	$-8.029 \cdot 10^{-7}$	$-8.029 \cdot 10^{-7}$	0	0.005244	0.005244	0
cHDD	0.0001841	0.0001841	0	$1.425 \cdot 10^{-5}$	$1.425 \cdot 10^{-5}$	0
cHW	0.00894	0.00894	0	0.03591	0.03591	0
cHWB	0.003007	0.003007	0	0.005386	0.005386	0
cHWBtil	$-5.347 \cdot 10^{-7}$	$-5.347 \cdot 10^{-7}$	0	0.005441	0.005441	0

cHWtil	$8.029 \cdot 10^{-7}$	$8.029 \cdot 10^{-7}$	0	0.03411	0.03411	0
cHbox	0.00051	0.00051	0	$1.546 \cdot 10^{-5}$	$1.546 \cdot 10^{-5}$	0
cH13	-0.0007892	-0.0007892	0	$4.784 \cdot 10^{-5}$	$4.784 \cdot 10^{-5}$	0
cHq1	-0.07404	-0.07404	0	0.384	0.384	0
cHq3	0.05728	0.05728	0	0.2971	0.2971	0
cHu	0.0313	0.0313	0	0.384	0.384	0
cll1	0.0003946	0.0003946	0	$1.196 \cdot 10^{-5}$	$1.196 \cdot 10^{-5}$	0
cuBIm	$-1.949 \cdot 10^{-14}$	$-1.949 \cdot 10^{-14}$	0	$2.362 \cdot 10^{-11}$	$2.362 \cdot 10^{-11}$	0
cuBRe	$2.591 \cdot 10^{-12}$	$2.591 \cdot 10^{-12}$	0	$2.362 \cdot 10^{-11}$	$2.362 \cdot 10^{-11}$	0
cuHIm	$4.09 \cdot 10^{-17}$	$4.09 \cdot 10^{-17}$	0	$9.738 \cdot 10^{-12}$	$9.738 \cdot 10^{-12}$	0
cuHRe	$-1.053 \cdot 10^{-11}$	$-1.053 \cdot 10^{-11}$	0	$9.738 \cdot 10^{-12}$	$9.738 \cdot 10^{-12}$	0
cuWIm	$3.869 \cdot 10^{-14}$	$3.869 \cdot 10^{-14}$	0	$6.084 \cdot 10^{-11}$	$6.084 \cdot 10^{-11}$	0
cuWRe	$-4.838 \cdot 10^{-12}$	$-4.838 \cdot 10^{-12}$	0	$8.236 \cdot 10^{-11}$	$8.236 \cdot 10^{-11}$	0
sm	0	0	0	0.004206	0.004206	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	$-9.479 \cdot 10^{-11}$	$-9.479 \cdot 10^{-11}$	0	$6.823 \cdot 10^{-11}$	$6.823 \cdot 10^{-11}$	0	
сНВ	$-2.973 \cdot 10^{-8}$	$-2.973 \cdot 10^{-8}$	0	$2.037 \cdot 10^{-10}$	$2.037 \cdot 10^{-10}$	0	
cHBtil	$-7.77 \cdot 10^{-10}$	$-7.77 \cdot 10^{-10}$	0	$1.715 \cdot 10^{-11}$	$1.715 \cdot 10^{-11}$	0	
cHDD	$-3.142 \cdot 10^{-7}$	$-3.142 \cdot 10^{-7}$	0	$4.299 \cdot 10^{-9}$	$4.299 \cdot 10^{-9}$	0	
cHW	$-8.18 \cdot 10^{-8}$	$-8.18 \cdot 10^{-8}$	0	$9.976 \cdot 10^{-8}$	$9.976 \cdot 10^{-8}$	0	
cHWB	$-1.714 \cdot 10^{-7}$	$-1.714 \cdot 10^{-7}$	0	$1.936 \cdot 10^{-8}$	$1.936 \cdot 10^{-8}$	0	
cHWBtil	$-1.868 \cdot 10^{-8}$	$-1.868 \cdot 10^{-8}$	0	$1.945 \cdot 10^{-8}$	$1.945 \cdot 10^{-8}$	0	
cHWtil	$-1.295 \cdot 10^{-7}$	$-1.295 \cdot 10^{-7}$	0	$1.015 \cdot 10^{-7}$	$1.015 \cdot 10^{-7}$	0	
cHbox	$7.813 \cdot 10^{-7}$	$7.813 \cdot 10^{-7}$	0	$2.548 \cdot 10^{-8}$	$2.548 \cdot 10^{-8}$	0	
cHd	$-4.389 \cdot 10^{-8}$	$-4.389 \cdot 10^{-8}$	0	$3.9 \cdot 10^{-7}$	$3.9 \cdot 10^{-7}$	0	

cH13	$-1.821 \cdot 10^{-6}$	$-1.821 \cdot 10^{-6}$	0	$1.656 \cdot 10^{-7}$	$1.656 \cdot 10^{-7}$	0
cHq1	$2.869 \cdot 10^{-6}$	$2.869 \cdot 10^{-6}$	0	$3.909 \cdot 10^{-7}$	$3.909 \cdot 10^{-7}$	0
cHq3	$-4.627 \cdot 10^{-6}$	$-4.627 \cdot 10^{-6}$	0	$1.327 \cdot 10^{-6}$	$1.327 \cdot 10^{-6}$	0
cHudIm	$4.206 \cdot 10^{-10}$	$4.206 \cdot 10^{-10}$	$3.345 \cdot 10^{-5}$	$2.428 \cdot 10^{-10}$	$2.428 \cdot 10^{-10}$	$6.687 \cdot 10^{-5}$
cHudRe	$-7.859 \cdot 10^{-10}$	$-7.858 \cdot 10^{-10}$	$3.345 \cdot 10^{-5}$	$1.752 \cdot 10^{-10}$	$1.752 \cdot 10^{-10}$	$6.691 \cdot 10^{-5}$
cW	$-6.173 \cdot 10^{-7}$	$-6.173 \cdot 10^{-7}$	0	$9.196 \cdot 10^{-7}$	$9.196 \cdot 10^{-7}$	0
cWtil	$-4.329 \cdot 10^{-7}$	$-4.329 \cdot 10^{-7}$	0	$9.209 \cdot 10^{-7}$	$9.209 \cdot 10^{-7}$	0
cdBIm	$1.625 \cdot 10^{-13}$	$1.625 \cdot 10^{-13}$	$3.335 \cdot 10^{-5}$	$1.921 \cdot 10^{-12}$	$1.921 \cdot 10^{-12}$	$6.675 \cdot 10^{-5}$
cdBRe	$1.653 \cdot 10^{-10}$	$1.653 \cdot 10^{-10}$	$3.339 \cdot 10^{-5}$	$3.222 \cdot 10^{-12}$	$3.222 \cdot 10^{-12}$	$6.672 \cdot 10^{-5}$
cdHIm	$-1.514 \cdot 10^{-10}$	$-1.514 \cdot 10^{-10}$	$3.336 \cdot 10^{-5}$	$3.79 \cdot 10^{-11}$	$3.79 \cdot 10^{-11}$	$6.673 \cdot 10^{-5}$
cdHRe	$9.496 \cdot 10^{-10}$	$9.496 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$3.795 \cdot 10^{-11}$	$3.794 \cdot 10^{-11}$	$6.673 \cdot 10^{-5}$
cdWIm	$-3.373 \cdot 10^{-9}$	$-3.373 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$2.25 \cdot 10^{-9}$	$2.25 \cdot 10^{-9}$	$6.671 \cdot 10^{-5}$
cdWRe	$1.165 \cdot 10^{-9}$	$1.165 \cdot 10^{-9}$	$3.33 \cdot 10^{-5}$	$2.758 \cdot 10^{-9}$	$2.758 \cdot 10^{-9}$	$6.672 \cdot 10^{-5}$
cll1	$9.105 \cdot 10^{-7}$	$9.105 \cdot 10^{-7}$	0	$4.14 \cdot 10^{-8}$	$4.14 \cdot 10^{-8}$	0
cuHIm	$-2.311 \cdot 10^{-7}$	$-2.311 \cdot 10^{-7}$	$4.327 \cdot 10^{-8}$	$8.73 \cdot 10^{-9}$	$8.73 \cdot 10^{-9}$	$5.727 \cdot 10^{-8}$
cuHRe	$1.139 \cdot 10^{-6}$	$1.139 \cdot 10^{-6}$	$8.778 \cdot 10^{-8}$	$7.903 \cdot 10^{-8}$	$7.903 \cdot 10^{-8}$	$6.327 \cdot 10^{-8}$
cuWIm	$-3.374 \cdot 10^{-6}$	$-3.374 \cdot 10^{-6}$	$2.964 \cdot 10^{-8}$	$3.301 \cdot 10^{-6}$	$3.301 \cdot 10^{-6}$	$6.06 \cdot 10^{-8}$
cuWRe	$2.318 \cdot 10^{-6}$	$2.318 \cdot 10^{-6}$	0	$2.139 \cdot 10^{-6}$	$2.139 \cdot 10^{-6}$	$4.674 \cdot 10^{-8}$
sm	0	0	0	$6.457 \cdot 10^{-6}$	$6.457 \cdot 10^{-6}$	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	$5.886 \cdot 10^{-10}$	$5.886 \cdot 10^{-10}$	0	$5.444 \cdot 10^{-10}$	$5.444 \cdot 10^{-10}$	0
сНВ	$4.469 \cdot 10^{-9}$	$4.469 \cdot 10^{-9}$	0	$5.401 \cdot 10^{-10}$	$5.401 \cdot 10^{-10}$	0
cHBtil	$-2.989 \cdot 10^{-11}$	$-2.989 \cdot 10^{-11}$	0	$9.755 \cdot 10^{-14}$	$9.755 \cdot 10^{-14}$	0
cHDD	$-2.325 \cdot 10^{-8}$	$-2.325 \cdot 10^{-8}$	0	$5.45 \cdot 10^{-10}$	$5.45 \cdot 10^{-10}$	0
cHW	$-2.118 \cdot 10^{-6}$	$-2.118 \cdot 10^{-6}$	0	$1.991 \cdot 10^{-6}$	$1.991 \cdot 10^{-6}$	0

cHWB	$9.452 \cdot 10^{-9}$	$9.452 \cdot 10^{-9}$	0	$2.623 \cdot 10^{-8}$	$2.623 \cdot 10^{-8}$	0
cHWBtil	$9.352 \cdot 10^{-10}$	$9.352 \cdot 10^{-10}$	0	$2.424 \cdot 10^{-8}$	$2.424 \cdot 10^{-8}$	0
cHWtil	$9.427 \cdot 10^{-10}$	$9.427 \cdot 10^{-10}$	0	$2.688 \cdot 10^{-10}$	$2.688 \cdot 10^{-10}$	0
cHbox	$3.79 \cdot 10^{-8}$	$3.79 \cdot 10^{-8}$	0	$1.203 \cdot 10^{-9}$	$1.203 \cdot 10^{-9}$	0
cH13	$-1.576 \cdot 10^{-5}$	$-1.576 \cdot 10^{-5}$	0	$1.433 \cdot 10^{-6}$	$1.433 \cdot 10^{-6}$	0
cHq1	$-6.691 \cdot 10^{-7}$	$-6.691 \cdot 10^{-7}$	0	$6.524 \cdot 10^{-7}$	$6.524 \cdot 10^{-7}$	0
сНqЗ	$8.664 \cdot 10^{-6}$	$8.664 \cdot 10^{-6}$	0	$1.461 \cdot 10^{-6}$	$1.461 \cdot 10^{-6}$	0
cHu	$6.976 \cdot 10^{-8}$	$6.976 \cdot 10^{-8}$	0	$6.523 \cdot 10^{-7}$	$6.523 \cdot 10^{-7}$	0
$\mathtt{cHudIm}$	$-7.85 \cdot 10^{-18}$	$-7.85 \cdot 10^{-18}$	0	$4.96 \cdot 10^{-24}$	$4.96 \cdot 10^{-24}$	0
cHudRe	$-3.96 \cdot 10^{-18}$	$-3.96 \cdot 10^{-18}$	0	$9.051 \cdot 10^{-25}$	$9.051 \cdot 10^{-25}$	0
cW	$-6.215 \cdot 10^{-6}$	$-6.215 \cdot 10^{-6}$	0	$1.109 \cdot 10^{-5}$	$1.109 \cdot 10^{-5}$	0
cWtil	$-9.605 \cdot 10^{-6}$	$-9.605 \cdot 10^{-6}$	0	$1.11 \cdot 10^{-5}$	$1.11\cdot 10^{-5}$	0
$\mathtt{cdHIm}$	$-1.161 \cdot 10^{-15}$	$-1.161 \cdot 10^{-15}$	0	$3.533 \cdot 10^{-24}$	$3.533 \cdot 10^{-24}$	0
cdHRe	$6.24 \cdot 10^{-14}$	$6.24 \cdot 10^{-14}$	0	$3.332 \cdot 10^{-21}$	$3.332 \cdot 10^{-21}$	0
$\mathtt{cdWIm}$	$1.402 \cdot 10^{-15}$	$1.402 \cdot 10^{-15}$	0	$2.395 \cdot 10^{-19}$	$2.395 \cdot 10^{-19}$	0
cdWRe	$-3.161 \cdot 10^{-12}$	$-3.161 \cdot 10^{-12}$	0	$4.193 \cdot 10^{-19}$	$4.193 \cdot 10^{-19}$	0
cll1	$7.882 \cdot 10^{-6}$	$7.882 \cdot 10^{-6}$	0	$3.584 \cdot 10^{-7}$	$3.584 \cdot 10^{-7}$	0
cuBIm	$-1.021 \cdot 10^{-14}$	$-1.021 \cdot 10^{-14}$	0	$3.087 \cdot 10^{-13}$	$3.087 \cdot 10^{-13}$	0
cuBRe	$-5.774 \cdot 10^{-12}$	$-5.774 \cdot 10^{-12}$	0	$3.088 \cdot 10^{-13}$	$3.088 \cdot 10^{-13}$	0
cuHIm	$-1.174 \cdot 10^{-12}$	$-1.174 \cdot 10^{-12}$	0	$5.747 \cdot 10^{-12}$	$5.747 \cdot 10^{-12}$	0
cuHRe	$3.058 \cdot 10^{-12}$	$3.058 \cdot 10^{-12}$	0	$5.747 \cdot 10^{-12}$	$5.747 \cdot 10^{-12}$	0
cuWIm	$-7.717 \cdot 10^{-10}$	$-7.717 \cdot 10^{-10}$	0	$9.536 \cdot 10^{-11}$	$9.536 \cdot 10^{-11}$	0
cuWRe	$1.918 \cdot 10^{-11}$	$1.918 \cdot 10^{-11}$	0	$1.744 \cdot 10^{-10}$	$1.744 \cdot 10^{-10}$	0
sm	0	0	0	$3.125 \cdot 10^{-7}$	$3.125 \cdot 10^{-7}$	0

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

сН	$8.751 \cdot 10^{-15}$	$8.751 \cdot 10^{-15}$	0	$1.259 \cdot 10^{-15}$	$1.259 \cdot 10^{-15}$	0
сНВ	$-4.655 \cdot 10^{-9}$	$-4.655 \cdot 10^{-9}$	0	$1.031 \cdot 10^{-10}$	$1.031 \cdot 10^{-10}$	0
cHBtil	$2.256 \cdot 10^{-10}$	$2.256 \cdot 10^{-10}$	0	$8.01 \cdot 10^{-13}$	$8.01 \cdot 10^{-13}$	0
cHDD	$-2.128 \cdot 10^{-8}$	$-2.128 \cdot 10^{-8}$	0	$5.002 \cdot 10^{-10}$	$5.002 \cdot 10^{-10}$	0
cHW	$-8.148 \cdot 10^{-7}$	$-8.148 \cdot 10^{-7}$	0	$1.827 \cdot 10^{-6}$	$1.827 \cdot 10^{-6}$	0
cHWB	$-3.264 \cdot 10^{-8}$	$-3.264 \cdot 10^{-8}$	0	$1.053 \cdot 10^{-8}$	$1.053 \cdot 10^{-8}$	0
cHWBtil	$1.674 \cdot 10^{-9}$	$1.674 \cdot 10^{-9}$	0	$9.675 \cdot 10^{-9}$	$9.675 \cdot 10^{-9}$	0
cHWtil	$3.119 \cdot 10^{-9}$	$3.119 \cdot 10^{-9}$	0	$5.286 \cdot 10^{-10}$	$5.286 \cdot 10^{-10}$	0
cHbox	$2.893 \cdot 10^{-8}$	$2.893 \cdot 10^{-8}$	0	$8.769 \cdot 10^{-10}$	$8.769 \cdot 10^{-10}$	0
cHd	$-2.966 \cdot 10^{-8}$	$-2.966 \cdot 10^{-8}$	0	$5.052 \cdot 10^{-7}$	$5.052 \cdot 10^{-7}$	0
cHl3	$-4.101 \cdot 10^{-6}$	$-4.101 \cdot 10^{-6}$	0	$3.73 \cdot 10^{-7}$	$3.73 \cdot 10^{-7}$	0
cHq1	$3.695 \cdot 10^{-7}$	$3.695 \cdot 10^{-7}$	0	$5.059 \cdot 10^{-7}$	$5.059 \cdot 10^{-7}$	0
сНqЗ	$-2.991 \cdot 10^{-6}$	$-2.991 \cdot 10^{-6}$	0	$1.526 \cdot 10^{-6}$	$1.526 \cdot 10^{-6}$	0
$\mathtt{cHudIm}$	$-8.01 \cdot 10^{-25}$	$-8.01 \cdot 10^{-25}$	0	$3.294 \cdot 10^{-35}$	$3.294 \cdot 10^{-35}$	0
cHudRe	$-1.372 \cdot 10^{-26}$	$-1.372 \cdot 10^{-26}$	0	$3.839 \cdot 10^{-36}$	$3.839 \cdot 10^{-36}$	0
cW	$-4.414 \cdot 10^{-6}$	$-4.414 \cdot 10^{-6}$	0	$3.966 \cdot 10^{-6}$	$3.966 \cdot 10^{-6}$	0
cWtil	$4.852 \cdot 10^{-6}$	$4.852 \cdot 10^{-6}$	0	$3.972 \cdot 10^{-6}$	$3.972 \cdot 10^{-6}$	0
$\mathtt{cdBIm}$	$1.778 \cdot 10^{-18}$	$1.778 \cdot 10^{-18}$	0	$4.522 \cdot 10^{-18}$	$4.522 \cdot 10^{-18}$	0
cdBRe	$1.704 \cdot 10^{-16}$	$1.704 \cdot 10^{-16}$	0	$3.396 \cdot 10^{-18}$	$3.396 \cdot 10^{-18}$	0
$\mathtt{cdHIm}$	$-3.91 \cdot 10^{-17}$	$-3.91 \cdot 10^{-17}$	0	$6.214 \cdot 10^{-17}$	$6.214 \cdot 10^{-17}$	0
cdHRe	$-8.243 \cdot 10^{-18}$	$-8.243 \cdot 10^{-18}$	0	$6.214 \cdot 10^{-17}$	$6.214 \cdot 10^{-17}$	0
$\mathtt{cdWIm}$	$-7.643 \cdot 10^{-16}$	$-7.643 \cdot 10^{-16}$	0	$1.513 \cdot 10^{-15}$	$1.513 \cdot 10^{-15}$	0
cdWRe	$6.704 \cdot 10^{-16}$	$6.704 \cdot 10^{-16}$	0	$1.396 \cdot 10^{-15}$	$1.396 \cdot 10^{-15}$	0
cll1	$2.051 \cdot 10^{-6}$	$2.051 \cdot 10^{-6}$	0	$9.324 \cdot 10^{-8}$	$9.324 \cdot 10^{-8}$	0
cuHIm	$-1.325 \cdot 10^{-18}$	$-1.325 \cdot 10^{-18}$	0	$4.61 \cdot 10^{-30}$	$4.61 \cdot 10^{-30}$	0
cuHRe	$1.921 \cdot 10^{-17}$	$1.921 \cdot 10^{-17}$	0	$4.042 \cdot 10^{-28}$	$4.042 \cdot 10^{-28}$	0
cuWIm	$2.403 \cdot 10^{-16}$	$2.403 \cdot 10^{-16}$	0	$1.825 \cdot 10^{-25}$	$1.825 \cdot 10^{-25}$	0
cuWRe	$-8.832 \cdot 10^{-17}$	$-8.832 \cdot 10^{-17}$	0	$6.733 \cdot 10^{-26}$	$6.733 \cdot 10^{-26}$	0
sm	0	0	0	$2.386 \cdot 10^{-7}$	$2.386 \cdot 10^{-7}$	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	$7.486 \cdot 10^{-7}$	$7.486 \cdot 10^{-7}$	0	$7.55 \cdot 10^{-8}$	$7.55\cdot10^{-8}$	0	
cHB	$3.096 \cdot 10^{-8}$	$3.096 \cdot 10^{-8}$	0	$5.895 \cdot 10^{-10}$	$5.895 \cdot 10^{-10}$	0	
cHBtil	$6.181 \cdot 10^{-9}$	$6.181 \cdot 10^{-9}$	0	$1.017 \cdot 10^{-10}$	$1.017 \cdot 10^{-10}$	0	
cHDD	$-1.545 \cdot 10^{-5}$	$-1.545 \cdot 10^{-5}$	0	$9.352 \cdot 10^{-7}$	$9.352 \cdot 10^{-7}$	0	
cHW	$4.442 \cdot 10^{-6}$	$4.442 \cdot 10^{-6}$	0	$1.395 \cdot 10^{-5}$	$1.395 \cdot 10^{-5}$	0	
cHWB	$8.088 \cdot 10^{-6}$	$8.088 \cdot 10^{-6}$	0	$3.971 \cdot 10^{-7}$	$3.971 \cdot 10^{-7}$	0	
cHWBtil	$1.147 \cdot 10^{-7}$	$1.147 \cdot 10^{-7}$	0	$2.827 \cdot 10^{-7}$	$2.827 \cdot 10^{-7}$	0	
cHWtil	$1.207 \cdot 10^{-6}$	$1.207 \cdot 10^{-6}$	0	$1.857 \cdot 10^{-5}$	$1.857 \cdot 10^{-5}$	0	
cHbox	$1.642 \cdot 10^{-5}$	$1.642 \cdot 10^{-5}$	0	$8.056 \cdot 10^{-6}$	$8.056 \cdot 10^{-6}$	0	
cH13	$-3.604 \cdot 10^{-5}$	$-3.604 \cdot 10^{-5}$	0	$3.277 \cdot 10^{-6}$	$3.277 \cdot 10^{-6}$	0	
cHq1	$-9.67 \cdot 10^{-6}$	$-9.67 \cdot 10^{-6}$	0	$9.57 \cdot 10^{-7}$	$9.57\cdot 10^{-7}$	0	
cHq3	$-1.261 \cdot 10^{-6}$	$-1.261 \cdot 10^{-6}$	0	$1.167 \cdot 10^{-5}$	$1.167 \cdot 10^{-5}$	0	
cHu	$1.214 \cdot 10^{-5}$	$1.214 \cdot 10^{-5}$	0	$9.608 \cdot 10^{-7}$	$9.608 \cdot 10^{-7}$	0	
$\mathtt{cHudIm}$	$1.081 \cdot 10^{-9}$	$1.081 \cdot 10^{-9}$	$3.349 \cdot 10^{-5}$	$7.031 \cdot 10^{-13}$	$7.031 \cdot 10^{-13}$	$6.69 \cdot 10^{-5}$	
cHudRe	$-1.771 \cdot 10^{-8}$	$-1.771 \cdot 10^{-8}$	$3.342 \cdot 10^{-5}$	$1.826 \cdot 10^{-12}$	$1.825 \cdot 10^{-12}$	$6.694 \cdot 10^{-5}$	
cM	$-4.344 \cdot 10^{-7}$	$-4.344 \cdot 10^{-7}$	0	$6.49 \cdot 10^{-6}$	$6.49 \cdot 10^{-6}$	0	
cWtil	$4.705 \cdot 10^{-6}$	$4.705 \cdot 10^{-6}$	0	$6.491 \cdot 10^{-6}$	$6.491 \cdot 10^{-6}$	0	
$\mathtt{cdHIm}$	$8.814 \cdot 10^{-11}$	$8.814 \cdot 10^{-11}$	$3.337 \cdot 10^{-5}$	$4.367 \cdot 10^{-15}$	$4.367 \cdot 10^{-15}$	$6.672 \cdot 10^{-5}$	
cdHRe	$4.617 \cdot 10^{-10}$	$4.617 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$1.201 \cdot 10^{-14}$	$1.201 \cdot 10^{-14}$	$6.675 \cdot 10^{-5}$	
$\mathtt{cdWIm}$	$-2.254 \cdot 10^{-10}$	$-2.254 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$1.288 \cdot 10^{-11}$	$1.288 \cdot 10^{-11}$	$6.671 \cdot 10^{-5}$	
cdWRe	$-5.276 \cdot 10^{-9}$	$-5.276 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$9.314 \cdot 10^{-12}$	$9.313 \cdot 10^{-12}$	$6.673 \cdot 10^{-5}$	
cll1	$1.802 \cdot 10^{-5}$	$1.802 \cdot 10^{-5}$	0	$8.194 \cdot 10^{-7}$	$8.194 \cdot 10^{-7}$	0	
cuBIm	$1.418 \cdot 10^{-7}$	$1.418 \cdot 10^{-7}$	$7.052 \cdot 10^{-8}$	$8.423 \cdot 10^{-9}$	$8.423 \cdot 10^{-9}$	$5.936 \cdot 10^{-8}$	
cuBRe	$-2.638 \cdot 10^{-7}$	$-2.638 \cdot 10^{-7}$	$3.791 \cdot 10^{-8}$	$2.4 \cdot 10^{-8}$	$2.4 \cdot 10^{-8}$	$4.167 \cdot 10^{-8}$	
$\mathtt{cuHIm}$	$2.855 \cdot 10^{-7}$	$2.855 \cdot 10^{-7}$	0	$2.502 \cdot 10^{-7}$	$2.502 \cdot 10^{-7}$	$7.993 \cdot 10^{-8}$	
cuHRe	$-4.067 \cdot 10^{-7}$	$-4.067 \cdot 10^{-7}$	$2.459 \cdot 10^{-8}$	$8.4 \cdot 10^{-8}$	$8.4\cdot10^{-8}$	$5.952 \cdot 10^{-8}$	

cuWIm	$-3.77 \cdot 10^{-5}$	$-3.77 \cdot 10^{-5}$	$2.652 \cdot 10^{-8}$	$4.201 \cdot 10^{-5}$	$4.201 \cdot 10^{-5}$	$7.142 \cdot 10^{-8}$
cuWRe	$6.404 \cdot 10^{-6}$	$6.404 \cdot 10^{-6}$	$1.561 \cdot 10^{-8}$	$4.457 \cdot 10^{-5}$	$4.457 \cdot 10^{-5}$	$6.732 \cdot 10^{-8}$
sm	0	0	0	0.0001324	0.0001324	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	5.444	5.444	0	0.09039	0.09039	0	
cHW	0.205	0.205	0	2.186	2.186	0	
cHWB	0.6789	0.6789	0	0.04473	0.04473	0	
cHWBtil	$6.199 \cdot 10^{-15}$	$6.256 \cdot 10^{-15}$	-0.009252	0.02938	0.02938	0	
cHWtil	$4.995 \cdot 10^{-15}$	$5.028 \cdot 10^{-15}$	-0.006659	1.855	1.855	0	
cHbox	11.31	11.31	0	0.3668	0.3668	0	
cH13	-6.457	-6.457	0	0.3914	0.3914	0	
cW	0.1102	0.1102	0	7.826	7.826	0	
cWtil	$-1.051 \cdot 10^{-13}$	$1.939 \cdot 10^{-14}$	1.185	7.827	7.827	0	
cll1	3.228	3.228	0	0.09786	0.09786	0	
sm	0	0	0	103	103	0	

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

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	-0.03596	-0.03596	0	0.2771	0.2771	0	
cHBtil	$-3.897 \cdot 10^{-17}$	$-3.897 \cdot 10^{-17}$	0	0.2771	0.2771	0	
cHDD	-0.3065	-0.3065	0	0.0162	0.0162	0	
cHW	-0.01301	-0.01301	0	0.02279	0.02279	0	
cHWB	-0.3809	-0.3809	0	0.1386	0.1386	0	

cHWBtil	$-2.247 \cdot 10^{-17}$	$-2.336 \cdot 10^{-17}$	-0.03928	0.1193	0.1193	0
cHWtil	$-1.352 \cdot 10^{-17}$	$-1.352 \cdot 10^{-17}$	0	0.02279	0.02279	0
cH13	-0.0257	-0.0257	0	0.001558	0.001558	0
cW	0.0006865	0.0006865	0	0.6621	0.6621	0
cWtil	$3.699 \cdot 10^{-18}$	$3.7 \cdot 10^{-18}$	-0.0003053	0.6621	0.6621	0
cll1	0.01285	0.01285	0	0.0003895	0.0003895	0
sm	0	0	0	1.45	1.45	0

### $\textbf{1.44} \quad W^+W^- \to \gamma\gamma\gamma$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHB	$-2.003 \cdot 10^{-8}$	$-2.003 \cdot 10^{-8}$	0	$5.205 \cdot 10^{-7}$	$5.205 \cdot 10^{-7}$	0	
cHBtil	$-6.36 \cdot 10^{-10}$	$-6.36 \cdot 10^{-10}$	0	$5.205 \cdot 10^{-7}$	$5.205 \cdot 10^{-7}$	0	
cHDD	$-1.468 \cdot 10^{-6}$	$-1.468 \cdot 10^{-6}$	0	$1.164 \cdot 10^{-7}$	$1.164 \cdot 10^{-7}$	0	
cHW	$-1.624 \cdot 10^{-8}$	$-1.624 \cdot 10^{-8}$	0	$4.865 \cdot 10^{-8}$	$4.865 \cdot 10^{-8}$	0	
cHWB	$-2.413 \cdot 10^{-6}$	$-2.413 \cdot 10^{-6}$	0	$6.187 \cdot 10^{-7}$	$6.187 \cdot 10^{-7}$	0	
cHWBtil	$1.649 \cdot 10^{-9}$	$1.649 \cdot 10^{-9}$	0	$3.187 \cdot 10^{-7}$	$3.187 \cdot 10^{-7}$	0	
cHWtil	$-1.824 \cdot 10^{-10}$	$-1.824 \cdot 10^{-10}$	0	$4.28 \cdot 10^{-8}$	$4.28 \cdot 10^{-8}$	0	
cHl3	$-6.309 \cdot 10^{-7}$	$-6.309 \cdot 10^{-7}$	0	$5.737 \cdot 10^{-8}$	$5.737 \cdot 10^{-8}$	0	
cW	$2.025 \cdot 10^{-7}$	$2.025 \cdot 10^{-7}$	0	$5.51 \cdot 10^{-6}$	$5.51 \cdot 10^{-6}$	0	
cWtil	$-2.181 \cdot 10^{-7}$	$-2.181 \cdot 10^{-7}$	0	$5.509 \cdot 10^{-6}$	$5.509 \cdot 10^{-6}$	0	
cll1	$3.154 \cdot 10^{-7}$	$3.154 \cdot 10^{-7}$	0	$1.434 \cdot 10^{-8}$	$1.434 \cdot 10^{-8}$	0	
sm	0	0	0	$4.628 \cdot 10^{-6}$	$4.628 \cdot 10^{-6}$	0	

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

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

cH13	-0.004357	-0.004357	0	0.0002641	0.0002641	0
cHq3	0.004357	0.004357	0	0.0002641	0.0002641	0
cHudIm	$-2.018 \cdot 10^{-23}$	$-5.017 \cdot 10^{-24}$	0.7514	$3.654 \cdot 10^{-9}$	$3.654 \cdot 10^{-9}$	$6.691 \cdot 10^{-5}$
cHudRe	$-4.802 \cdot 10^{-8}$	$-4.802 \cdot 10^{-8}$	$3.344 \cdot 10^{-5}$	$4.744 \cdot 10^{-9}$	$4.744 \cdot 10^{-9}$	$6.69 \cdot 10^{-5}$
cdWIm	$7.538 \cdot 10^{-21}$	$8.035 \cdot 10^{-21}$	-0.06603	$7.596 \cdot 10^{-6}$	$7.596 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
cdWRe	$-6.213 \cdot 10^{-6}$	$-6.213 \cdot 10^{-6}$	$3.336 \cdot 10^{-5}$	$7.251 \cdot 10^{-6}$	$7.25\cdot10^{-6}$	$6.674 \cdot 10^{-5}$
cll1	0.002178	0.002178	0	$6.603 \cdot 10^{-5}$	$6.603 \cdot 10^{-5}$	0
cqq11	0.1116	0.1116	$-8.957 \cdot 10^{-8}$	1.561	1.561	0
cqq3	0.6698	0.6698	0	6.244	6.244	0
cqq31	-0.1116	-0.1116	$-8.957 \cdot 10^{-8}$	1.561	1.561	0
cquqd11Im	$8.889 \cdot 10^{-15}$	$8.889 \cdot 10^{-15}$	$2.25 \cdot 10^{-8}$	$3.5 \cdot 10^{-11}$	$3.5\cdot10^{-11}$	$5.714 \cdot 10^{-8}$
cquqd11Re	$-5.271 \cdot 10^{-11}$	$-5.271 \cdot 10^{-11}$	$3.795 \cdot 10^{-8}$	$3.5 \cdot 10^{-11}$	$3.5\cdot10^{-11}$	$5.714 \cdot 10^{-8}$
cquqd1Im	$5.965 \cdot 10^{-14}$	$5.965 \cdot 10^{-14}$	$3.353 \cdot 10^{-8}$	$1.771 \cdot 10^{-10}$	$1.771 \cdot 10^{-10}$	$5.646 \cdot 10^{-8}$
cquqd1Re	$-3.54 \cdot 10^{-10}$	$-3.54 \cdot 10^{-10}$	$2.825 \cdot 10^{-8}$	$1.771 \cdot 10^{-10}$	$1.771 \cdot 10^{-10}$	$5.646 \cdot 10^{-8}$
cquqd81Im	$1.185 \cdot 10^{-14}$	$1.185 \cdot 10^{-14}$	$8.437 \cdot 10^{-8}$	$7.777 \cdot 10^{-12}$	$7.777 \cdot 10^{-12}$	$6.429 \cdot 10^{-8}$
cquqd81Re	$-6.164 \cdot 10^{-11}$	$-6.164 \cdot 10^{-11}$	$3.244 \cdot 10^{-8}$	$5.991 \cdot 10^{-12}$	$5.991 \cdot 10^{-12}$	$6.677 \cdot 10^{-8}$
cquqd8Im	$3.143 \cdot 10^{-27}$	$1.837 \cdot 10^{-27}$	0.4155	$3.936 \cdot 10^{-11}$	$3.936 \cdot 10^{-11}$	$7.622 \cdot 10^{-8}$
cquqd8Re	$-9.674 \cdot 10^{-27}$	$-7.597 \cdot 10^{-31}$	0.9999	$3.936 \cdot 10^{-11}$	$3.936 \cdot 10^{-11}$	$7.622 \cdot 10^{-8}$
cuWIm	$-2.318 \cdot 10^{-18}$	$-2.29 \cdot 10^{-18}$	0.01196	0.01275	0.01275	$7.843 \cdot 10^{-8}$
cuWRe	-0.009492	-0.009492	$3.16 \cdot 10^{-8}$	0.01317	0.01317	0
sm	0	0	0	0.01497	0.01497	0

#### $\textbf{1.46} \quad \gamma W^+ \rightarrow z W^+$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сНВ	-0.0003833	-0.0003833	0	0.0001955	0.0001955	0	
cHBtil	$-1.63 \cdot 10^{-17}$	$-1.476 \cdot 10^{-17}$	0.09421	0.0001955	0.0001955	0	
cHDD	-0.008249	-0.008249	0	0.0001555	0.0001555	0	

cHW	0.03089	0.03089	0	0.0266	0.0266	0
cHWB	0.1197	0.1197	0	1.022	1.022	0
cHWBtil	$6.073 \cdot 10^{-16}$	$6.036 \cdot 10^{-16}$	0.006166	1.034	1.034	0
cHWtil	$2.94 \cdot 10^{-17}$	$2.783 \cdot 10^{-17}$	0.05315	0.0001955	0.0001955	0
cH13	-0.06495	-0.06495	0	0.003937	0.003937	0
cW	0.007252	0.007252	0	0.8048	0.8048	0
cWtil	$2.817 \cdot 10^{-14}$	$1.877 \cdot 10^{-14}$	0.3339	0.805	0.805	0
cll1	0.03247	0.03247	0	0.0009844	0.0009844	0
sm	0	0	0	0.1094	0.1094	0

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

		ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.001464	-0.001464	0	$9.397 \cdot 10^{-5}$	$9.397 \cdot 10^{-5}$	0	
cHWB	-0.003422	-0.003422	0	0.0005012	0.0005012	0	
cHbox	$2.38 \cdot 10^{-12}$	$2.38 \cdot 10^{-12}$	0	$1.455 \cdot 10^{-13}$	$1.455 \cdot 10^{-13}$	0	
сНе	0.001029	0.001029	0	$3.953 \cdot 10^{-5}$	$3.953 \cdot 10^{-5}$	0	
cHl1	-0.0001816	-0.0001816	0	$2.163 \cdot 10^{-5}$	$2.163 \cdot 10^{-5}$	0	
cH13	-0.00248	-0.00248	0	0.000226	0.000226	0	
ceBIm	$2.899 \cdot 10^{-23}$	$4.121 \cdot 10^{-23}$	-0.4212	$8.327 \cdot 10^{-7}$	$8.327 \cdot 10^{-7}$	$6.077 \cdot 10^{-6}$	
ceBRe	$1.085 \cdot 10^{-6}$	$1.085 \cdot 10^{-6}$	$3.041 \cdot 10^{-6}$	$8.327 \cdot 10^{-7}$	$8.327 \cdot 10^{-7}$	$6.077 \cdot 10^{-6}$	
ceHIm	$3.081 \cdot 10^{-30}$	$6.237 \cdot 10^{-30}$	-1.024	$7.277 \cdot 10^{-14}$	$7.277 \cdot 10^{-14}$	$2.762 \cdot 10^{-6}$	
ceHRe	$-2.38 \cdot 10^{-12}$	$-2.38 \cdot 10^{-12}$	$1.387 \cdot 10^{-6}$	$1.455 \cdot 10^{-13}$	$1.455 \cdot 10^{-13}$	$2.749 \cdot 10^{-6}$	
ceWIm	$-5.362 \cdot 10^{-24}$	$-1.151 \cdot 10^{-23}$	-1.147	$5.855 \cdot 10^{-7}$	$5.855 \cdot 10^{-7}$	$6.063 \cdot 10^{-6}$	
ceWRe	$-5.325 \cdot 10^{-7}$	$-5.325 \cdot 10^{-7}$	$3.042 \cdot 10^{-6}$	$1.166 \cdot 10^{-7}$	$1.166 \cdot 10^{-7}$	$6.004 \cdot 10^{-6}$	
cee	0.0009818	0.0009818	0	0.008008	0.008008	0	
cle	0.2221	0.2221	0	1.825	1.825	0	
cll	0.05356	0.05356	0	0.3895	0.3895	0	

cll1	0.00193	0.00193	0	0.0081	0.0081	0
$\mathtt{sm}$	0	0	0	0.006807	0.006807	0

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.02401	-0.02401	0	0.0003639	0.0003639	0	
cHl1	-0.09604	-0.09604	0	0.005823	0.005823	0	
cH13	$-9.448 \cdot 10^{-19}$	$-9.448 \cdot 10^{-19}$	0	$1.204 \cdot 10^{-35}$	$1.204 \cdot 10^{-35}$	0	
cll	-4.289	-4.289	0	11.61	11.61	0	
cll1	-0.6771	-0.6771	0	6.183	6.183	0	
sm	0	0	0	0.3961	0.3961	0	

#### 1.49 $\nu_e \bar{\nu}_e ightarrow u_\mu \bar{\nu}_\mu$

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.0005216	-0.0005216	0	$7.905 \cdot 10^{-6}$	$7.905 \cdot 10^{-6}$	0	
cHl1	-0.002086	-0.002086	0	0.0001265	0.0001265	0	
cH13	$1.518 \cdot 10^{-19}$	$1.518 \cdot 10^{-19}$	0	$9.404 \cdot 10^{-37}$	$9.404 \cdot 10^{-37}$	0	
cll	0.2488	0.2488	0	1.799	1.799	0	
cll1	0.1789	0.1789	0	1.299	1.299	0	
sm	0	0	0	0.008603	0.008603	0	

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

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	$-3.888 \cdot 10^{-7}$	$-3.888 \cdot 10^{-7}$	0	$7.26 \cdot 10^{-6}$	$7.26 \cdot 10^{-6}$	0
cHBtil	$-3.071 \cdot 10^{-24}$	$-3.071 \cdot 10^{-24}$	0	$7.26 \cdot 10^{-6}$	$7.26 \cdot 10^{-6}$	0
cHDD	$-1.575 \cdot 10^{-5}$	$-1.575 \cdot 10^{-5}$	0	$8.323 \cdot 10^{-7}$	$8.323 \cdot 10^{-7}$	0
cHW	$-1.307 \cdot 10^{-7}$	$-1.307 \cdot 10^{-7}$	0	$5.97 \cdot 10^{-7}$	$5.97\cdot10^{-7}$	0
cHWB	$-3.352 \cdot 10^{-5}$	$-3.352 \cdot 10^{-5}$	0	$5.854 \cdot 10^{-6}$	$5.854 \cdot 10^{-6}$	0
cHWBtil	$1.645 \cdot 10^{-24}$	$1.645 \cdot 10^{-24}$	0	$2.082 \cdot 10^{-6}$	$2.082 \cdot 10^{-6}$	0
cHWtil	$-8.807 \cdot 10^{-25}$	$-8.807 \cdot 10^{-25}$	0	$5.97\cdot 10^{-7}$	$5.97\cdot10^{-7}$	0
cH13	$-2.427 \cdot 10^{-5}$	$-2.427 \cdot 10^{-5}$	0	$1.471 \cdot 10^{-6}$	$1.471 \cdot 10^{-6}$	0
$\mathtt{cdBIm}$	$-4.643 \cdot 10^{-24}$	$9.577 \cdot 10^{-25}$	1.206	$1.147 \cdot 10^{-6}$	$1.147 \cdot 10^{-6}$	$6.67\cdot10^{-5}$
cdBRe	$2.091 \cdot 10^{-7}$	$2.091 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$1.147 \cdot 10^{-6}$	$1.147 \cdot 10^{-6}$	$6.67 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$4.345 \cdot 10^{-25}$	$1.027 \cdot 10^{-24}$	-1.364	$3.289 \cdot 10^{-7}$	$3.289 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
cdWRe	$-1.12 \cdot 10^{-7}$	$-1.12 \cdot 10^{-7}$	$3.331 \cdot 10^{-5}$	$3.289 \cdot 10^{-7}$	$3.289 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
cll1	$1.213 \cdot 10^{-5}$	$1.213 \cdot 10^{-5}$	0	$3.678 \cdot 10^{-7}$	$3.678 \cdot 10^{-7}$	0
sm	0	0	0	$7.449 \cdot 10^{-5}$	$7.449 \cdot 10^{-5}$	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-7.174 \cdot 10^{-5}$	$-7.174 \cdot 10^{-5}$	0	$4.886 \cdot 10^{-6}$	$4.886 \cdot 10^{-6}$	0	
cHWB	$-5.84 \cdot 10^{-5}$	$-5.84 \cdot 10^{-5}$	0	$1.657 \cdot 10^{-5}$	$1.657 \cdot 10^{-5}$	0	
cHbox	$4.394 \cdot 10^{-12}$	$4.394 \cdot 10^{-12}$	0	$2.684 \cdot 10^{-13}$	$2.684 \cdot 10^{-13}$	0	
cHd	$5.871 \cdot 10^{-5}$	$5.871 \cdot 10^{-5}$	0	$6.743 \cdot 10^{-6}$	$6.743 \cdot 10^{-6}$	0	
сНе	$-5.29 \cdot 10^{-5}$	$-5.29 \cdot 10^{-5}$	0	$8.629 \cdot 10^{-6}$	$8.629 \cdot 10^{-6}$	0	
cHl1	$-1.527 \cdot 10^{-5}$	$-1.527 \cdot 10^{-5}$	0	$5.021 \cdot 10^{-7}$	$5.021 \cdot 10^{-7}$	0	
cH13	$-7.922 \cdot 10^{-5}$	$-7.922 \cdot 10^{-5}$	0	$4.662 \cdot 10^{-6}$	$4.662 \cdot 10^{-6}$	0	
cHq1	$4.885 \cdot 10^{-5}$	$4.885 \cdot 10^{-5}$	0	$4.365 \cdot 10^{-6}$	$4.365 \cdot 10^{-6}$	0	
сНqЗ	$5.132 \cdot 10^{-5}$	$5.132 \cdot 10^{-5}$	0	$2.955 \cdot 10^{-6}$	$2.955 \cdot 10^{-6}$	0	

$\mathtt{cdBIm}$	$-4.976 \cdot 10^{-25}$	$-4.969 \cdot 10^{-25}$	0.001443	$2.249 \cdot 10^{-7}$	$2.248 \cdot 10^{-7}$	$6.671 \cdot 10^{-5}$
cdBRe	$2.953 \cdot 10^{-7}$	$2.953 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$1.465 \cdot 10^{-6}$	$1.465 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-2.699 \cdot 10^{-29}$	$4.015 \cdot 10^{-29}$	2.487	$6.711 \cdot 10^{-14}$	$6.711 \cdot 10^{-14}$	$6.674 \cdot 10^{-5}$
cdHRe	$-2.197 \cdot 10^{-12}$	$-2.197 \cdot 10^{-12}$	$3.337 \cdot 10^{-5}$	$6.711 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	$6.674 \cdot 10^{-5}$
cdWIm	$-1.529 \cdot 10^{-22}$	$-1.529 \cdot 10^{-22}$	$3.289 \cdot 10^{-5}$	$1.581 \cdot 10^{-7}$	$1.581 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
cdWRe	$-6.489 \cdot 10^{-7}$	$-6.489 \cdot 10^{-7}$	$3.336 \cdot 10^{-5}$	$1.03 \cdot 10^{-6}$	$1.03 \cdot 10^{-6}$	$6.667 \cdot 10^{-5}$
ceBIm	$4.446 \cdot 10^{-27}$	$4.833 \cdot 10^{-27}$	-0.0869	$1.613 \cdot 10^{-11}$	$1.613 \cdot 10^{-11}$	$-5.579 \cdot 10^{-7}$
ceBRe	$1.027 \cdot 10^{-10}$	$1.027 \cdot 10^{-10}$	$-2.921 \cdot 10^{-7}$	$1.613 \cdot 10^{-11}$	$1.613 \cdot 10^{-11}$	$-6.199 \cdot 10^{-7}$
ceHIm	$-1.435 \cdot 10^{-28}$	$-9.824 \cdot 10^{-29}$	0.3152	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	$-5.663 \cdot 10^{-7}$
ceHRe	$-2.197 \cdot 10^{-12}$	$-2.197 \cdot 10^{-12}$	$-2.731 \cdot 10^{-7}$	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	$-5.663 \cdot 10^{-7}$
ceWIm	$7.377 \cdot 10^{-27}$	$7.869 \cdot 10^{-27}$	-0.06668	$1.015 \cdot 10^{-10}$	$1.015 \cdot 10^{-10}$	$-5.909 \cdot 10^{-7}$
ceWRe	$-1.286 \cdot 10^{-10}$	$-1.286 \cdot 10^{-10}$	$-3.11 \cdot 10^{-7}$	$6.615 \cdot 10^{-10}$	$6.615 \cdot 10^{-10}$	$-5.593 \cdot 10^{-7}$
ced	0.002275	0.002275	0	0.02786	0.02786	0
cld	0.006835	0.006835	0	0.1685	0.1685	0
${\tt cledqIm}$	$3.589 \cdot 10^{-27}$	$3.589 \cdot 10^{-27}$	0	$3.539 \cdot 10^{-11}$	$3.538 \cdot 10^{-11}$	$6.678 \cdot 10^{-5}$
cledqRe	$-7.121 \cdot 10^{-11}$	$-7.12 \cdot 10^{-11}$	$3.34 \cdot 10^{-5}$	$3.539 \cdot 10^{-11}$	$3.538 \cdot 10^{-11}$	$6.678 \cdot 10^{-5}$
cll1	$5.464 \cdot 10^{-5}$	$5.464 \cdot 10^{-5}$	0	$1.656 \cdot 10^{-6}$	$1.656 \cdot 10^{-6}$	0
clq1	$6.9 \cdot 10^{-5}$	$6.9 \cdot 10^{-5}$	0	0.0003546	0.0003546	0
clq3	0.005402	0.005402	0	0.02786	0.02786	0
cqe	-0.01299	-0.01299	0	0.312	0.312	0
sm	0	0	0	0.0002674	0.0002674	0

## 1.52 $b\bar{b} \rightarrow \nu_e \bar{\nu}_e$

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-2.856 \cdot 10^{-5}$	$-2.856 \cdot 10^{-5}$	0	$1.601 \cdot 10^{-6}$	$1.601 \cdot 10^{-6}$	0		
cHWB	$-1.003 \cdot 10^{-5}$	$-1.003 \cdot 10^{-5}$	0	$1.177 \cdot 10^{-6}$	$1.177 \cdot 10^{-6}$	0		
cHd	$-6.917 \cdot 10^{-5}$	$-6.917 \cdot 10^{-5}$	0	$1.411 \cdot 10^{-5}$	$1.411 \cdot 10^{-5}$	0		

cHl1	$-3.839 \cdot 10^{-5}$	$-3.839 \cdot 10^{-5}$	0	$1.164 \cdot 10^{-6}$	$1.164 \cdot 10^{-6}$	0
cHl3	$-4.759 \cdot 10^{-5}$	$-4.759 \cdot 10^{-5}$	0	$1.443 \cdot 10^{-6}$	$1.443 \cdot 10^{-6}$	0
cHq1	$3.302 \cdot 10^{-5}$	$3.302 \cdot 10^{-5}$	0	$1.176 \cdot 10^{-6}$	$1.176 \cdot 10^{-6}$	0
cHq3	$4.496 \cdot 10^{-5}$	$4.496 \cdot 10^{-5}$	0	$1.601 \cdot 10^{-6}$	$1.601 \cdot 10^{-6}$	0
$\mathtt{cdBIm}$	$5.323 \cdot 10^{-23}$	$5.323 \cdot 10^{-23}$	0	$2.517 \cdot 10^{-7}$	$2.517 \cdot 10^{-7}$	$6.671 \cdot 10^{-5}$
cdBRe	$-1.281 \cdot 10^{-7}$	$-1.281 \cdot 10^{-7}$	$3.333 \cdot 10^{-5}$	$2.796 \cdot 10^{-7}$	$2.796 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
$\mathtt{cdWIm}$	$9.941 \cdot 10^{-23}$	$9.941 \cdot 10^{-23}$	0	$8.777 \cdot 10^{-7}$	$8.777 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
cdWRe	$-2.393 \cdot 10^{-7}$	$-2.392 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$9.751 \cdot 10^{-7}$	$9.75 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
cld	0.007474	0.007474	0	0.1819	0.1819	0
cll1	$4.759 \cdot 10^{-5}$	$4.759 \cdot 10^{-5}$	0	$1.443 \cdot 10^{-6}$	$1.443 \cdot 10^{-6}$	0
clq1	-0.003938	-0.003938	0	0.01672	0.01672	0
clq3	0.005362	0.005362	0	0.02277	0.02277	0
sm	0	0	0	0.0003166	0.0003166	0

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

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	0.0251	0.0251	0	0.0001773	0.0001773	0		
cHWB	0.02876	0.02876	0	0.0004259	0.0004259	0		
cHbox	-0.0003286	-0.0003286	0	$2.628 \cdot 10^{-9}$	$2.628 \cdot 10^{-9}$	0		
cHd	0.02297	0.02297	0	0.004475	0.004475	0		
cH13	0.06438	0.06438	0	0.001346	0.001346	0		
cHq1	-0.09315	-0.09315	0	0.005922	0.005922	0		
сНqЗ	-0.0582	-0.0582	0	0.001509	0.001509	0		
cdBIm	$-3.971 \cdot 10^{-20}$	$-4.18 \cdot 10^{-20}$	-0.05264	$2.933 \cdot 10^{-5}$	$2.933 \cdot 10^{-5}$	$6.675 \cdot 10^{-5}$		
cdBRe	$-1.993 \cdot 10^{-5}$	$-1.993 \cdot 10^{-5}$	$3.336 \cdot 10^{-5}$	$1.665 \cdot 10^{-5}$	$1.665 \cdot 10^{-5}$	$6.677 \cdot 10^{-5}$		
cdGIm	$3.149 \cdot 10^{-20}$	$6.879 \cdot 10^{-20}$	-1.185	0.0004867	0.0004866	$6.674 \cdot 10^{-5}$		
cdGRe	-0.0005807	-0.0005807	$3.337 \cdot 10^{-5}$	0.0004867	0.0004867	$6.673 \cdot 10^{-5}$		

cdHIm	$5.98 \cdot 10^{-21}$	$5.235 \cdot 10^{-21}$	0.1247	$1.501 \cdot 10^{-9}$	$1.5\cdot 10^{-9}$	$6.677 \cdot 10^{-5}$
cdHRe	0.0003286	0.0003286	$3.335 \cdot 10^{-5}$	$2.628 \cdot 10^{-9}$	$2.628 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$
cdWIm	$-6.049 \cdot 10^{-20}$	$-5.709 \cdot 10^{-20}$	0.05622	0.0001806	0.0001806	$6.673 \cdot 10^{-5}$
cdWRe	0.0001724	0.0001724	$3.335 \cdot 10^{-5}$	0.0001035	0.0001035	$6.674 \cdot 10^{-5}$
cdd	-11.73	-11.73	0	7.807	7.807	0
cdd1	-11.73	-11.73	0	7.807	7.807	0
cll1	-0.03219	-0.03219	0	0.0003366	0.0003366	0
cqd1	0.0966	0.0966	0	2.128	2.128	0
cqd8	-5.121	-5.121	0	0.4729	0.4729	0
cqq1	-5.266	-5.266	0	5.952	5.952	0
cqq11	-5.266	-5.266	0	5.952	5.952	0
cqq3	-5.266	-5.266	$3.798 \cdot 10^{-8}$	5.952	5.952	$6.72 \cdot 10^{-8}$
cqq31	-5.266	-5.266	$3.798 \cdot 10^{-8}$	5.952	5.952	$6.72 \cdot 10^{-8}$
sm	0	0	0	83.74	83.74	0

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

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-8.936 \cdot 10^{-5}$	$-8.936 \cdot 10^{-5}$	0	$2.214 \cdot 10^{-6}$	$2.214 \cdot 10^{-6}$	0		
cHWB	0.0001544	0.0001544	0	$6.999 \cdot 10^{-6}$	$6.999 \cdot 10^{-6}$	0		
cHbox	$2.604 \cdot 10^{-14}$	$2.604 \cdot 10^{-14}$	0	$1.573 \cdot 10^{-15}$	$1.573 \cdot 10^{-15}$	0		
cHd	$-5.057 \cdot 10^{-5}$	$-5.057 \cdot 10^{-5}$	0	$9.408 \cdot 10^{-6}$	$9.408 \cdot 10^{-6}$	0		
cH13	-0.0002804	-0.0002804	0	$1.7\cdot 10^{-5}$	$1.7\cdot 10^{-5}$	0		
cHq1	0.001836	0.001836	0	0.0001183	0.0001183	0		
cHq3	0.0002986	0.0002986	0	$1.966 \cdot 10^{-5}$	$1.966 \cdot 10^{-5}$	0		
$\mathtt{cdBIm}$	$-2.236 \cdot 10^{-22}$	$-2.236 \cdot 10^{-22}$	$8.972 \cdot 10^{-5}$	$4.364 \cdot 10^{-7}$	$4.364 \cdot 10^{-7}$	$6.672 \cdot 10^{-5}$		
cdBRe	$-2.477 \cdot 10^{-7}$	$-2.477 \cdot 10^{-7}$	$3.334 \cdot 10^{-5}$	$5.027 \cdot 10^{-7}$	$5.027 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$		
cdGIm	$-8.346 \cdot 10^{-27}$	$-8.402 \cdot 10^{-27}$	-0.006731	$1.926 \cdot 10^{-5}$	$1.926 \cdot 10^{-5}$	$6.675 \cdot 10^{-5}$		

cdGRe	-0.000112	-0.000112	$3.338 \cdot 10^{-5}$	$1.927 \cdot 10^{-5}$	$1.927 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$
$\mathtt{cdHIm}$	$-4.734 \cdot 10^{-31}$	$9.561 \cdot 10^{-31}$	3.02	$7.866 \cdot 10^{-16}$	$7.865 \cdot 10^{-16}$	$3.337 \cdot 10^{-5}$
cdHRe	$-2.604 \cdot 10^{-14}$	$-2.604 \cdot 10^{-14}$	$1.667 \cdot 10^{-5}$	$1.573 \cdot 10^{-15}$	$1.573 \cdot 10^{-15}$	$3.337 \cdot 10^{-5}$
cdWIm	$-2.643 \cdot 10^{-22}$	$-2.643 \cdot 10^{-22}$	$-4.362 \cdot 10^{-5}$	$2.747 \cdot 10^{-6}$	$2.747 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
cdWRe	$-1.296 \cdot 10^{-6}$	$-1.295 \cdot 10^{-6}$	$3.342 \cdot 10^{-5}$	$3.164 \cdot 10^{-6}$	$3.164 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
cdd	0.03155	0.03155	0	2.318	2.318	0
cdd1	1.537	1.537	0	2.318	2.318	0
cll1	0.0001402	0.0001402	0	$4.25 \cdot 10^{-6}$	$4.25 \cdot 10^{-6}$	0
cqd1	-0.01366	-0.01366	0	0.9849	0.9849	0
cqd8	0.6486	0.6486	0	0.2189	0.2189	0
cqq1	0.03944	0.03944	0	0.3558	0.3558	0
cqq11	0.2475	0.2475	0	0.3558	0.3558	$-2.81 \cdot 10^{-8}$
cqq3	0.03944	0.03944	0	0.3558	0.3558	0
cqq31	0.2475	0.2475	0	0.3558	0.3558	$2.81 \cdot 10^{-8}$
sm	0	0	0	0.6282	0.6282	0

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	0.0003085	0.0003085	0	$6.598 \cdot 10^{-6}$	$6.598 \cdot 10^{-6}$	0
cHWB	-0.0001491	-0.0001491	0	$1.887 \cdot 10^{-5}$	$1.887 \cdot 10^{-5}$	0
cHbox	$2.04 \cdot 10^{-5}$	$2.04 \cdot 10^{-5}$	0	$1.896 \cdot 10^{-6}$	$1.896 \cdot 10^{-6}$	0
cHd	$-4.457 \cdot 10^{-5}$	$-4.457 \cdot 10^{-5}$	0	$6.935 \cdot 10^{-6}$	$6.935 \cdot 10^{-6}$	0
cH13	-2.906	-2.906	0	0.2107	0.2107	0
cHq1	-0.0006909	-0.0006909	0	$1.879 \cdot 10^{-6}$	$1.879 \cdot 10^{-6}$	0
cHq3	2.906	2.906	0	0.2108	0.2108	0
cHu	-0.0009991	-0.0009991	0	$8.256 \cdot 10^{-6}$	$8.256 \cdot 10^{-6}$	0
$\mathtt{cHudIm}$	$-8.054 \cdot 10^{-22}$	$-1.204 \cdot 10^{-21}$	-0.4949	$1.607 \cdot 10^{-5}$	$1.607 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$

cHudRe	$1.494 \cdot 10^{-5}$	$1.494 \cdot 10^{-5}$	$3.341 \cdot 10^{-5}$	$7.045 \cdot 10^{-7}$	$7.044 \cdot 10^{-7}$	$6.691 \cdot 10^{-5}$
cdBIm	$-1.175 \cdot 10^{-22}$	$2.971 \cdot 10^{-22}$	3.528	$1.827 \cdot 10^{-6}$	$1.827 \cdot 10^{-6}$	$6.671 \cdot 10^{-5}$
cdBRe	$6.437 \cdot 10^{-6}$	$6.437 \cdot 10^{-6}$	$3.337 \cdot 10^{-5}$	$5.35 \cdot 10^{-7}$	$5.349 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
cdGIm	$4.967 \cdot 10^{-21}$	$3.042 \cdot 10^{-21}$	0.3876	$6.827 \cdot 10^{-6}$	$6.827 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
cdGRe	0.0001677	0.0001677	$3.339 \cdot 10^{-5}$	$6.831 \cdot 10^{-6}$	$6.83 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$
cdHIm	$2.941 \cdot 10^{-22}$	$-1.812 \cdot 10^{-21}$	7.16	$4.74 \cdot 10^{-7}$	$4.74 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
cdHRe	$-1.02 \cdot 10^{-5}$	$-1.02 \cdot 10^{-5}$	$3.333 \cdot 10^{-5}$	$4.74 \cdot 10^{-7}$	$4.739 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
cdWIm	$1.934 \cdot 10^{-20}$	$2.419 \cdot 10^{-20}$	-0.2511	$9.575 \cdot 10^{-5}$	$9.574 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$
cdWRe	-0.0005898	-0.0005898	$3.337 \cdot 10^{-5}$	0.0008179	0.0008179	$6.674 \cdot 10^{-5}$
cll1	1.453	1.453	0	0.05267	0.05267	0
cqd1	-0.00176	-0.00176	0	0.006512	0.006512	0
cqd8	0.0239	0.0239	0	0.001447	0.001447	0
cqq1	-4.884	-4.884	0	3.381	3.381	0
cqq11	-4.884	-4.884	0	3.381	3.381	0
cqq3	-17.95	-17.95	0	12.4	12.4	0
cqq31	-17.95	-17.95	0	12.4	12.4	0
cqu1	-0.1453	-0.1453	0	0.1398	0.1398	0
cqu8	-0.07894	-0.07894	0	0.03107	0.03107	0
cquqd11Im	$-8.817 \cdot 10^{-21}$	$-3.9 \cdot 10^{-20}$	-3.423	0.0003716	0.0003716	$6.689 \cdot 10^{-5}$
cquqd11Re	-0.0001804	-0.0001804	$3.342 \cdot 10^{-5}$	0.0003716	0.0003716	$6.689 \cdot 10^{-5}$
cquqd1Im	$-2.682 \cdot 10^{-20}$	$-5.659 \cdot 10^{-21}$	0.789	0.0002783	0.0002783	$6.69 \cdot 10^{-5}$
cquqd1Re	-0.0001804	-0.0001804	$3.342 \cdot 10^{-5}$	0.0003716	0.0003716	$6.689 \cdot 10^{-5}$
cquqd81Im	$4.174 \cdot 10^{-20}$	$5.995 \cdot 10^{-20}$	-0.4362	$5.365 \cdot 10^{-5}$	$5.365 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$
cquqd81Re	0.0002236	0.0002236	$3.346 \cdot 10^{-5}$	$5.757 \cdot 10^{-5}$	$5.757 \cdot 10^{-5}$	$6.69 \cdot 10^{-5}$
cquqd8Im	$4.174 \cdot 10^{-20}$	$5.995 \cdot 10^{-20}$	-0.4362	$5.365 \cdot 10^{-5}$	$5.365 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$
cquqd8Re	0.0002236	0.0002236	$3.346 \cdot 10^{-5}$	$5.757 \cdot 10^{-5}$	$5.757 \cdot 10^{-5}$	$6.69 \cdot 10^{-5}$
cuBIm	$-1.824 \cdot 10^{-18}$	$-1.872 \cdot 10^{-18}$	-0.02642	0.0008378	0.0008378	$5.968 \cdot 10^{-8}$
cuBRe	0.004597	0.004597	$4.351 \cdot 10^{-8}$	0.001083	0.001083	0
cuGIm	$-5.259 \cdot 10^{-17}$	$-5.291 \cdot 10^{-17}$	-0.006214	0.03212	0.03212	$6.228 \cdot 10^{-8}$

cuGRe	-0.07434	-0.07434	$2.69 \cdot 10^{-8}$	0.0415	0.0415	$4.819 \cdot 10^{-8}$
$\mathtt{cuHIm}$	$7.531 \cdot 10^{-22}$	$1.194 \cdot 10^{-23}$	0.9842	$5.382 \cdot 10^{-7}$	$5.382 \cdot 10^{-7}$	$5.574 \cdot 10^{-8}$
cuHRe	$-1.02 \cdot 10^{-5}$	$-1.02 \cdot 10^{-5}$	0	$4.739 \cdot 10^{-7}$	$4.739 \cdot 10^{-7}$	$6.33 \cdot 10^{-8}$
cuWIm	$4.328 \cdot 10^{-17}$	$7.491 \cdot 10^{-18}$	0.8269	1.349	1.349	$7.412 \cdot 10^{-8}$
cuWRe	0.06046	0.06046	$3.308 \cdot 10^{-8}$	0.1467	0.1467	0
cud1	-0.04639	-0.04639	0	0.8451	0.8451	0
cud8	0.2778	0.2778	0	0.08711	0.08711	0
sm	0	0	0	0.4193	0.4193	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	$-8.479 \cdot 10^{-5}$	$-8.479 \cdot 10^{-5}$	0	$1.168 \cdot 10^{-5}$	$1.168 \cdot 10^{-5}$	0	
cHWB	-0.0001385	-0.0001385	0	$3.233 \cdot 10^{-5}$	$3.233 \cdot 10^{-5}$	0	
cHbox	$5.517 \cdot 10^{-15}$	$5.517 \cdot 10^{-15}$	0	$3.365 \cdot 10^{-16}$	$3.365 \cdot 10^{-16}$	0	
cHd	-0.0001124	-0.0001124	0	$5.436 \cdot 10^{-6}$	$5.436 \cdot 10^{-6}$	0	
cH13	$-5.703 \cdot 10^{-5}$	$-5.703 \cdot 10^{-5}$	0	$3.458 \cdot 10^{-6}$	$3.458 \cdot 10^{-6}$	0	
cHq1	-0.000215	-0.000215	0	$1.352 \cdot 10^{-6}$	$1.352 \cdot 10^{-6}$	0	
сНq3	$5.229 \cdot 10^{-5}$	$5.229 \cdot 10^{-5}$	0	$7.431 \cdot 10^{-6}$	$7.431 \cdot 10^{-6}$	0	
cHu	$5.8 \cdot 10^{-5}$	$5.8 \cdot 10^{-5}$	0	$1.681 \cdot 10^{-6}$	$1.681 \cdot 10^{-6}$	0	
cdBIm	$5.272 \cdot 10^{-22}$	$5.272 \cdot 10^{-22}$	$2.179 \cdot 10^{-5}$	$6.441 \cdot 10^{-7}$	$6.44 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$	
cdBRe	$-3.238 \cdot 10^{-7}$	$-3.238 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$2.789 \cdot 10^{-7}$	$2.788 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$	
$\mathtt{cdGIm}$	$-7.143 \cdot 10^{-32}$	$3.59 \cdot 10^{-28}$	5027	$3.172 \cdot 10^{-6}$	$3.172 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$	
cdGRe	-0.000112	-0.000112	$3.338 \cdot 10^{-5}$	$3.176 \cdot 10^{-6}$	$3.175 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$	
$\mathtt{cdHIm}$	$5.732 \cdot 10^{-31}$	$4.872 \cdot 10^{-31}$	0.1499	$8.414 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	$6.673 \cdot 10^{-5}$	
cdHRe	$-2.759 \cdot 10^{-15}$	$-2.758 \cdot 10^{-15}$	$3.335 \cdot 10^{-5}$	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	$6.674 \cdot 10^{-5}$	
$\mathtt{cdWIm}$	$-8.231 \cdot 10^{-22}$	$-8.23 \cdot 10^{-22}$	$6.935 \cdot 10^{-5}$	$1.201 \cdot 10^{-6}$	$1.201 \cdot 10^{-6}$	$6.668 \cdot 10^{-5}$	
cdWRe	$-4.673 \cdot 10^{-7}$	$-4.673 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$5.201 \cdot 10^{-7}$	$5.201 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$	

cll1	$2.852 \cdot 10^{-5}$	$2.852 \cdot 10^{-5}$	0	$8.644 \cdot 10^{-7}$	$8.644 \cdot 10^{-7}$	0
cqd1	-0.01241	-0.01241	0	0.9298	0.9298	0
cqd8	0.6123	0.6123	0	0.2066	0.2066	0
cqq1	-0.0005319	-0.0005319	0	0.005115	0.005115	0
cqq3	0.0005319	0.0005319	0	0.005115	0.005115	0
cqq31	0.006474	0.006474	$1.545 \cdot 10^{-8}$	0.02046	0.02046	0
cqu1	0.0002107	0.0002107	0	0.007625	0.007625	0
cqu8	0.005033	0.005033	0	0.001694	0.001694	0
cquqd11Im	$3.509 \cdot 10^{-31}$	$5.284 \cdot 10^{-31}$	-0.5058	$3.383 \cdot 10^{-16}$	$3.383 \cdot 10^{-16}$	$6.672 \cdot 10^{-5}$
cquqd11Re	$4.877 \cdot 10^{-15}$	$4.877 \cdot 10^{-15}$	$3.336 \cdot 10^{-5}$	$3.383 \cdot 10^{-16}$	$3.383 \cdot 10^{-16}$	$6.672 \cdot 10^{-5}$
cquqd1Im	$2.761 \cdot 10^{-30}$	$2.695 \cdot 10^{-30}$	0.02381	$4.436 \cdot 10^{-14}$	$4.436 \cdot 10^{-14}$	$6.672 \cdot 10^{-5}$
cquqd1Re	$-8.915 \cdot 10^{-14}$	$-8.915 \cdot 10^{-14}$	$3.337 \cdot 10^{-5}$	$4.436 \cdot 10^{-14}$	$4.436 \cdot 10^{-14}$	$6.674 \cdot 10^{-5}$
cquqd81Im	$1.234 \cdot 10^{-31}$	$-1.308 \cdot 10^{-31}$	2.06	$7.517 \cdot 10^{-17}$	$7.517 \cdot 10^{-17}$	$6.674 \cdot 10^{-5}$
cquqd81Re	$-4.078 \cdot 10^{-14}$	$-4.078 \cdot 10^{-14}$	$3.337 \cdot 10^{-5}$	$9.166 \cdot 10^{-15}$	$9.166 \cdot 10^{-15}$	$6.674 \cdot 10^{-5}$
cquqd8Im	$-1.244 \cdot 10^{-31}$	$-5.626 \cdot 10^{-31}$	-3.524	$9.859 \cdot 10^{-15}$	$9.858 \cdot 10^{-15}$	$6.673 \cdot 10^{-5}$
cquqd8Re	$3.289 \cdot 10^{-15}$	$3.288 \cdot 10^{-15}$	$3.336 \cdot 10^{-5}$	$9.859 \cdot 10^{-15}$	$9.858 \cdot 10^{-15}$	$6.673 \cdot 10^{-5}$
cuBIm	$1.948 \cdot 10^{-29}$	$1.948 \cdot 10^{-29}$	0	$5.109 \cdot 10^{-14}$	$5.109 \cdot 10^{-14}$	0
cuBRe	$9.739 \cdot 10^{-14}$	$9.739 \cdot 10^{-14}$	0	$5.109 \cdot 10^{-14}$	$5.109 \cdot 10^{-14}$	0
cuGIm	$-5.253 \cdot 10^{-30}$	$-5.253 \cdot 10^{-30}$	0	$1.959 \cdot 10^{-12}$	$1.959 \cdot 10^{-12}$	0
cuGRe	$-2.992 \cdot 10^{-11}$	$-2.992 \cdot 10^{-11}$	0	$1.959 \cdot 10^{-12}$	$1.959 \cdot 10^{-12}$	0
cuHIm	$8.286 \cdot 10^{-32}$	$8.286 \cdot 10^{-32}$	0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
cuHRe	$-2.758 \cdot 10^{-15}$	$-2.758 \cdot 10^{-15}$	0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
cuWIm	$1.261 \cdot 10^{-29}$	$1.254 \cdot 10^{-29}$	0.005771	$1.391 \cdot 10^{-13}$	$1.391 \cdot 10^{-13}$	0
cuWRe	$-1.147 \cdot 10^{-12}$	$-1.147 \cdot 10^{-12}$	0	$3.216 \cdot 10^{-13}$	$3.216 \cdot 10^{-13}$	0
cud1	$-6.914 \cdot 10^{-5}$	$-6.914 \cdot 10^{-5}$	0	0.001279	0.001279	0
cud8	0.5485	0.5485	0	0.1851	0.1851	0
sm	0	0	0	0.8298	0.8298	0

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

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
cH13	-0.0001106	-0.0001106	0	$3.351 \cdot 10^{-6}$	$3.351 \cdot 10^{-6}$	0		
сНqЗ	0.0001106	0.0001106	0	$3.351 \cdot 10^{-6}$	$3.351 \cdot 10^{-6}$	0		
$\mathtt{cHudIm}$	$-1.342 \cdot 10^{-23}$	$-8.698 \cdot 10^{-24}$	0.3521	$4.756 \cdot 10^{-9}$	$4.756 \cdot 10^{-9}$	$6.69 \cdot 10^{-5}$		
cHudRe	$-1.601 \cdot 10^{-8}$	$-1.601 \cdot 10^{-8}$	$3.342 \cdot 10^{-5}$	$3.125 \cdot 10^{-10}$	$3.125 \cdot 10^{-10}$	$6.69 \cdot 10^{-5}$		
$\mathtt{cdWIm}$	$2.415 \cdot 10^{-21}$	$2.457 \cdot 10^{-21}$	-0.01764	$1.533 \cdot 10^{-6}$	$1.533 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$		
cdWRe	$-8.393 \cdot 10^{-7}$	$-8.393 \cdot 10^{-7}$	$3.337 \cdot 10^{-5}$	$1.973 \cdot 10^{-6}$	$1.973 \cdot 10^{-6}$	$6.675 \cdot 10^{-5}$		
ceWIm	$-8.219 \cdot 10^{-29}$	$-8.289 \cdot 10^{-29}$	-0.00854	$2.32 \cdot 10^{-14}$	$2.32 \cdot 10^{-14}$	$-3.19 \cdot 10^{-6}$		
ceWRe	$-4.189 \cdot 10^{-14}$	$-4.189 \cdot 10^{-14}$	$-1.599 \cdot 10^{-6}$	$2.716 \cdot 10^{-14}$	$2.716 \cdot 10^{-14}$	$-3.203 \cdot 10^{-6}$		
${\tt cledqIm}$	$-1.443 \cdot 10^{-19}$	$-1.443 \cdot 10^{-19}$	$3.173 \cdot 10^{-5}$	$4.138 \cdot 10^{-16}$	$4.138 \cdot 10^{-16}$	$6.343 \cdot 10^{-5}$		
cledqRe	$-8.495 \cdot 10^{-16}$	$-8.495 \cdot 10^{-16}$	$3.172 \cdot 10^{-5}$	$4.138 \cdot 10^{-16}$	$4.138 \cdot 10^{-16}$	$6.346 \cdot 10^{-5}$		
clequ1Im	$2.375 \cdot 10^{-16}$	$2.375 \cdot 10^{-16}$	$-1.726 \cdot 10^{-6}$	$7.068 \cdot 10^{-13}$	$7.068 \cdot 10^{-13}$	$-3.41 \cdot 10^{-6}$		
clequ1Re	$1.408 \cdot 10^{-12}$	$1.408 \cdot 10^{-12}$	$-1.705 \cdot 10^{-6}$	$7.068 \cdot 10^{-13}$	$7.068 \cdot 10^{-13}$	$-3.41 \cdot 10^{-6}$		
clequ3Im	$-5.73 \cdot 10^{-16}$	$-5.73 \cdot 10^{-16}$	$-1.693 \cdot 10^{-6}$	$4.67 \cdot 10^{-12}$	$4.67 \cdot 10^{-12}$	$-3.405 \cdot 10^{-6}$		
clequ3Re	$-3.396 \cdot 10^{-12}$	$-3.396 \cdot 10^{-12}$	$-1.708 \cdot 10^{-6}$	$4.67 \cdot 10^{-12}$	$4.67 \cdot 10^{-12}$	$-3.405 \cdot 10^{-6}$		
cll1	0.0001106	0.0001106	0	$3.351 \cdot 10^{-6}$	$3.351 \cdot 10^{-6}$	0		
clq3	0.017	0.017	0	0.07922	0.07922	0		
cuWIm	$2.233 \cdot 10^{-18}$	$2.224 \cdot 10^{-18}$	0.004089	0.003096	0.003096	$6.46 \cdot 10^{-8}$		
cuWRe	-0.004569	-0.004569	$2.189 \cdot 10^{-8}$	0.002941	0.002941	$3.401 \cdot 10^{-8}$		
sm	0	0	0	0.01024	0.01024	0		

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	-0.0006911	-0.0006911	0	$4.071 \cdot 10^{-5}$	$4.071 \cdot 10^{-5}$	0
cHWB	-0.001501	-0.001501	0	0.0001261	0.0001261	0
cHbox	$4.026 \cdot 10^{-13}$	$4.026 \cdot 10^{-13}$	0	$2.478 \cdot 10^{-14}$	$2.478 \cdot 10^{-14}$	0

сНе	$-2.479 \cdot 10^{-5}$	$-2.479 \cdot 10^{-5}$	0	$2.982 \cdot 10^{-6}$	$2.982 \cdot 10^{-6}$	0
cHl1	0.000448	0.000448	0	$1.126 \cdot 10^{-5}$	$1.126 \cdot 10^{-5}$	0
cH13	-0.0004054	-0.0004054	0	$2.091 \cdot 10^{-5}$	$2.091 \cdot 10^{-5}$	0
cHq1	-0.0003533	-0.0003533	0	$7.005 \cdot 10^{-6}$	$7.005 \cdot 10^{-6}$	0
cHq3	$9.914 \cdot 10^{-5}$	$9.914 \cdot 10^{-5}$	0	$3.116 \cdot 10^{-6}$	$3.116 \cdot 10^{-6}$	0
сHu	0.0001979	0.0001979	0	$4.53 \cdot 10^{-6}$	$4.53 \cdot 10^{-6}$	0
ceBIm	$-6.355 \cdot 10^{-26}$	$-6.362 \cdot 10^{-26}$	-0.001114	$2.326 \cdot 10^{-11}$	$2.326 \cdot 10^{-11}$	$-5.59 \cdot 10^{-7}$
ceBRe	$7.613 \cdot 10^{-10}$	$7.613 \cdot 10^{-10}$	$-2.89 \cdot 10^{-7}$	$2.326 \cdot 10^{-11}$	$2.326 \cdot 10^{-11}$	$-5.59 \cdot 10^{-7}$
ceHIm	$-3.982 \cdot 10^{-31}$	$3.112 \cdot 10^{-31}$	1.781	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	$-5.65 \cdot 10^{-7}$
ceHRe	$-2.013 \cdot 10^{-13}$	$-2.013 \cdot 10^{-13}$	$-2.981 \cdot 10^{-7}$	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	$-5.65 \cdot 10^{-7}$
ceWIm	$1.757 \cdot 10^{-26}$	$1.757 \cdot 10^{-26}$	-0.0004491	$4.338 \cdot 10^{-11}$	$4.338 \cdot 10^{-11}$	$-5.763 \cdot 10^{-7}$
ceWRe	$-7.156 \cdot 10^{-10}$	$-7.156 \cdot 10^{-10}$	$-2.795 \cdot 10^{-7}$	$7.951 \cdot 10^{-10}$	$7.951 \cdot 10^{-10}$	$-5.785 \cdot 10^{-7}$
ceu	-0.05296	-0.05296	0	0.3243	0.3243	0
clequ1Im	$5.386 \cdot 10^{-28}$	$3.591 \cdot 10^{-28}$	0.3332	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	$-5.511 \cdot 10^{-7}$
clequ1Re	$6.534 \cdot 10^{-12}$	$6.534 \cdot 10^{-12}$	$-2.908 \cdot 10^{-7}$	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	$-5.511 \cdot 10^{-7}$
clequ3Im	$-2.195 \cdot 10^{-27}$	$-1.477 \cdot 10^{-27}$	0.3271	$4.944 \cdot 10^{-11}$	$4.944 \cdot 10^{-11}$	$-5.866 \cdot 10^{-7}$
clequ3Re	$-2.479 \cdot 10^{-11}$	$-2.479 \cdot 10^{-11}$	$-2.824 \cdot 10^{-7}$	$4.944 \cdot 10^{-11}$	$4.944 \cdot 10^{-11}$	$-5.866 \cdot 10^{-7}$
cll1	0.0002651	0.0002651	0	$8.036 \cdot 10^{-6}$	$8.036 \cdot 10^{-6}$	0
clq1	-0.07603	-0.07603	0	0.3243	0.3243	0
clq3	0.02352	0.02352	0	0.1003	0.1003	0
clu	$-5.201 \cdot 10^{-6}$	$-5.201 \cdot 10^{-6}$	0	$6.255 \cdot 10^{-5}$	$6.255 \cdot 10^{-5}$	0
cqe	$-2.593 \cdot 10^{-6}$	$-2.593 \cdot 10^{-6}$	0	$6.255 \cdot 10^{-5}$	$6.255 \cdot 10^{-5}$	0
cuBIm	$1.375 \cdot 10^{-23}$	$1.375 \cdot 10^{-23}$	0	$8.89 \cdot 10^{-9}$	$8.89 \cdot 10^{-9}$	0
cuBRe	$-2.087 \cdot 10^{-7}$	$-2.087 \cdot 10^{-7}$	0	$8.892 \cdot 10^{-9}$	$8.892 \cdot 10^{-9}$	0
cuHIm	$-1.934 \cdot 10^{-30}$	$-1.934 \cdot 10^{-30}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
cuHRe	$-2.013 \cdot 10^{-13}$	$-2.013 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
cuWIm	$1.054 \cdot 10^{-23}$	$1.054 \cdot 10^{-23}$	0	$1.146 \cdot 10^{-7}$	$1.146 \cdot 10^{-7}$	0
cuWRe	$-1.635 \cdot 10^{-7}$	$-1.635 \cdot 10^{-7}$	0	$6.253 \cdot 10^{-9}$	$6.253 \cdot 10^{-9}$	0
sm	0	0	0	0.006619	0.006619	0

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

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cH13	-0.0004568	-0.0004568	0	$1.385 \cdot 10^{-5}$	$1.385 \cdot 10^{-5}$	0	
сНq3	0.0004568	0.0004568	0	$1.385 \cdot 10^{-5}$	$1.385 \cdot 10^{-5}$	0	
$\mathtt{cHudIm}$	$1.567 \cdot 10^{-31}$	$1.567 \cdot 10^{-31}$	0	$5.45 \cdot 10^{-17}$	$5.45 \cdot 10^{-17}$	0	
cHudRe	$-4.122 \cdot 10^{-16}$	$-4.122 \cdot 10^{-16}$	0	$2.081 \cdot 10^{-17}$	$2.081 \cdot 10^{-17}$	0	
cdWIm	$9.705 \cdot 10^{-28}$	$9.705 \cdot 10^{-28}$	0	$1.069 \cdot 10^{-9}$	$1.069 \cdot 10^{-9}$	0	
cdWRe	$-8.058 \cdot 10^{-10}$	$-8.058 \cdot 10^{-10}$	0	$1.245 \cdot 10^{-9}$	$1.245 \cdot 10^{-9}$	0	
ceWIm	$1.374 \cdot 10^{-25}$	$1.173 \cdot 10^{-25}$	0.1463	$3.902 \cdot 10^{-7}$	$3.902 \cdot 10^{-7}$	$6.099 \cdot 10^{-6}$	
ceWRe	$-2.942 \cdot 10^{-7}$	$-2.942 \cdot 10^{-7}$	$3.059 \cdot 10^{-6}$	$4.546 \cdot 10^{-7}$	$4.546 \cdot 10^{-7}$	$6.115 \cdot 10^{-6}$	
${\tt cledqIm}$	$8.378 \cdot 10^{-16}$	$8.378 \cdot 10^{-16}$	$3.044 \cdot 10^{-6}$	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	$6.096 \cdot 10^{-6}$	
cledqRe	$-4.954 \cdot 10^{-12}$	$-4.954 \cdot 10^{-12}$	$3.048 \cdot 10^{-6}$	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	$6.096 \cdot 10^{-6}$	
clequ1Im	$-1.555 \cdot 10^{-13}$	$-1.555 \cdot 10^{-13}$	$3.087 \cdot 10^{-6}$	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	$6.083 \cdot 10^{-6}$	
clequ1Re	$9.216 \cdot 10^{-10}$	$9.216 \cdot 10^{-10}$	$3.049 \cdot 10^{-6}$	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	$6.083 \cdot 10^{-6}$	
clequ3Im	$2.194 \cdot 10^{-13}$	$2.194 \cdot 10^{-13}$	$3.053 \cdot 10^{-6}$	$1.047 \cdot 10^{-9}$	$1.047 \cdot 10^{-9}$	$6.111 \cdot 10^{-6}$	
clequ3Re	$-1.301 \cdot 10^{-9}$	$-1.301 \cdot 10^{-9}$	$2.998 \cdot 10^{-6}$	$1.047 \cdot 10^{-9}$	$1.047 \cdot 10^{-9}$	$6.111 \cdot 10^{-6}$	
cll1	0.0004568	0.0004568	0	$1.385 \cdot 10^{-5}$	$1.385 \cdot 10^{-5}$	0	
clq3	0.07023	0.07023	0	0.3273	0.3273	0	
cuWIm	$-7.417 \cdot 10^{-23}$	$-7.417 \cdot 10^{-23}$	0	$2.322 \cdot 10^{-7}$	$2.322 \cdot 10^{-7}$	0	
cuWRe	$-2.087 \cdot 10^{-7}$	$-2.087 \cdot 10^{-7}$	0	$1.993 \cdot 10^{-7}$	$1.993 \cdot 10^{-7}$	0	
sm	0	0	0	0.007269	0.007269	0	

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

cHWB	$-6.315 \cdot 10^{-5}$	$-6.315 \cdot 10^{-5}$	0	$1.696 \cdot 10^{-5}$	$1.696 \cdot 10^{-5}$	0
cHbox	$2.391 \cdot 10^{-15}$	$2.391 \cdot 10^{-15}$	0	$1.452 \cdot 10^{-16}$	$1.452 \cdot 10^{-16}$	0
cHd	$-3.843 \cdot 10^{-5}$	$-3.843 \cdot 10^{-5}$	0	$7.6 \cdot 10^{-6}$	$7.6 \cdot 10^{-6}$	0
cH13	$-5.664 \cdot 10^{-5}$	$-5.664 \cdot 10^{-5}$	0	$3.434 \cdot 10^{-6}$	$3.434 \cdot 10^{-6}$	0
cHq1	$-8.313 \cdot 10^{-5}$	$-8.313 \cdot 10^{-5}$	0	$1.759 \cdot 10^{-6}$	$1.759 \cdot 10^{-6}$	0
cHq3	$5.188 \cdot 10^{-5}$	$5.188 \cdot 10^{-5}$	0	$7.451 \cdot 10^{-6}$	$7.451 \cdot 10^{-6}$	0
cHu	$5.54 \cdot 10^{-5}$	$5.54 \cdot 10^{-5}$	0	$8.343 \cdot 10^{-6}$	$8.343 \cdot 10^{-6}$	0
cdBIm	$1.262 \cdot 10^{-27}$	$1.262 \cdot 10^{-27}$	$4.358 \cdot 10^{-6}$	$2.401 \cdot 10^{-12}$	$2.401 \cdot 10^{-12}$	0
cdBRe	$-4.175 \cdot 10^{-13}$	$-4.175 \cdot 10^{-13}$	0	$2.982 \cdot 10^{-13}$	$2.982 \cdot 10^{-13}$	0
cdGIm	$1.385 \cdot 10^{-32}$	$1.385 \cdot 10^{-32}$	0	$3.396 \cdot 10^{-12}$	$3.396 \cdot 10^{-12}$	0
cdGRe	$-1.398 \cdot 10^{-10}$	$-1.398 \cdot 10^{-10}$	0	$3.396 \cdot 10^{-12}$	$3.396 \cdot 10^{-12}$	0
$\mathtt{cdHIm}$	$-1.158 \cdot 10^{-31}$	$-1.217 \cdot 10^{-31}$	-0.05081	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
cdHRe	$-1.196 \cdot 10^{-15}$	$-1.196 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
cdWIm	$-2.56 \cdot 10^{-27}$	$-2.56 \cdot 10^{-27}$	0	$4.478 \cdot 10^{-12}$	$4.478 \cdot 10^{-12}$	0
cdWRe	$-5.547 \cdot 10^{-13}$	$-5.547 \cdot 10^{-13}$	0	$5.563 \cdot 10^{-13}$	$5.563 \cdot 10^{-13}$	0
cll1	$2.832 \cdot 10^{-5}$	$2.832 \cdot 10^{-5}$	0	$8.584 \cdot 10^{-7}$	$8.584 \cdot 10^{-7}$	0
cqd1	-0.01254	-0.01254	0	0.9399	0.9399	0
cqd8	0.6189	0.6189	0	0.2089	0.2089	0
cqq1	-0.0003863	-0.0003863	0	0.003719	0.003719	0
cqq3	0.0003863	0.0003863	0	0.003719	0.003719	0
cqq31	0.004649	0.004649	0	0.01488	0.01488	0
cqu1	0.004229	0.004229	0	0.1524	0.1524	0
cqu8	0.1003	0.1003	0	0.03386	0.03386	0
cquqd11Im	$9.995 \cdot 10^{-32}$	$-3.427 \cdot 10^{-32}$	1.343	$2.917 \cdot 10^{-15}$	$2.917 \cdot 10^{-15}$	0
cquqd11Re	$-8.498 \cdot 10^{-16}$	$-8.498 \cdot 10^{-16}$	0	$2.917 \cdot 10^{-15}$	$2.917 \cdot 10^{-15}$	0
cquqd1Im	$-1.403 \cdot 10^{-30}$	$-1.403 \cdot 10^{-30}$	0	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0
cquqd1Re	$-3.856 \cdot 10^{-14}$	$-3.856 \cdot 10^{-14}$	0	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0
cquqd81Im	$2.745 \cdot 10^{-31}$	$1.735 \cdot 10^{-32}$	0.9368	$6.482 \cdot 10^{-16}$	$6.482 \cdot 10^{-16}$	0
cquqd81Re	$-1.769 \cdot 10^{-14}$	$-1.769 \cdot 10^{-14}$	0	$3.998 \cdot 10^{-15}$	$3.998 \cdot 10^{-15}$	0

cquqd8Im	$4.485 \cdot 10^{-31}$	$4.485 \cdot 10^{-31}$	0	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0
cquqd8Re	$1.435 \cdot 10^{-15}$	$1.435 \cdot 10^{-15}$	0	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0
cuBIm	$-4.225 \cdot 10^{-25}$	$3.622 \cdot 10^{-24}$	9.572	$5.275 \cdot 10^{-8}$	$5.275 \cdot 10^{-8}$	0
cuBRe	$1.555 \cdot 10^{-8}$	$1.555 \cdot 10^{-8}$	0	$5.275 \cdot 10^{-8}$	$5.275 \cdot 10^{-8}$	0
cuGIm	$-5.168 \cdot 10^{-23}$	$-5.609 \cdot 10^{-23}$	-0.08537	$2.022 \cdot 10^{-6}$	$2.022 \cdot 10^{-6}$	0
cuGRe	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$2.022 \cdot 10^{-6}$	$2.022 \cdot 10^{-6}$	0
cuHIm	$5.059 \cdot 10^{-32}$	$-2.004 \cdot 10^{-32}$	1.396	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
cuHRe	$-1.196 \cdot 10^{-15}$	$-1.196 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
cuWIm	$3.718 \cdot 10^{-24}$	$-4.183 \cdot 10^{-24}$	2.125	$4.124 \cdot 10^{-8}$	$4.124 \cdot 10^{-8}$	0
cuWRe	$-2.456 \cdot 10^{-7}$	$-2.456 \cdot 10^{-7}$	0	$3.32 \cdot 10^{-7}$	$3.32 \cdot 10^{-7}$	0
cud1	$-5.064 \cdot 10^{-5}$	$-5.064 \cdot 10^{-5}$	0	0.0009298	0.0009298	0
cud8	0.2447	0.2447	0	0.08259	0.08259	0
sm	0	0	0	0.5156	0.5156	0

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-6.974 \cdot 10^{-5}$	$-6.974 \cdot 10^{-5}$	0	$4.758 \cdot 10^{-6}$	$4.758 \cdot 10^{-6}$	0	
cHWB	$-5.699 \cdot 10^{-5}$	$-5.699 \cdot 10^{-5}$	0	$1.612 \cdot 10^{-5}$	$1.612 \cdot 10^{-5}$	0	
cHbox	$1.283 \cdot 10^{-22}$	$1.283 \cdot 10^{-22}$	0	$7.836 \cdot 10^{-24}$	$7.836 \cdot 10^{-24}$	0	
cHd	$5.69 \cdot 10^{-5}$	$5.69 \cdot 10^{-5}$	0	$6.555 \cdot 10^{-6}$	$6.555 \cdot 10^{-6}$	0	
сНе	$-4.242 \cdot 10^{-5}$	$-4.242 \cdot 10^{-5}$	0	$6.486 \cdot 10^{-6}$	$6.486 \cdot 10^{-6}$	0	
cHl1	$-1.431 \cdot 10^{-5}$	$-1.431 \cdot 10^{-5}$	0	$5.071 \cdot 10^{-7}$	$5.071 \cdot 10^{-7}$	0	
cH13	$-9.657 \cdot 10^{-5}$	$-9.657 \cdot 10^{-5}$	0	$4.8 \cdot 10^{-6}$	$4.8 \cdot 10^{-6}$	0	
cHq1	$4.779 \cdot 10^{-5}$	$4.779 \cdot 10^{-5}$	0	$4.247 \cdot 10^{-6}$	$4.247 \cdot 10^{-6}$	0	
cHq3	$6.428 \cdot 10^{-5}$	$6.428 \cdot 10^{-5}$	0	$2.828 \cdot 10^{-6}$	$2.828 \cdot 10^{-6}$	0	
cdBIm	$-5.595 \cdot 10^{-27}$	$-5.595 \cdot 10^{-27}$	0	$3.955 \cdot 10^{-13}$	$3.955 \cdot 10^{-13}$	0	
cdBRe	$5.651 \cdot 10^{-13}$	$5.651 \cdot 10^{-13}$	0	$2.109 \cdot 10^{-12}$	$2.109 \cdot 10^{-12}$	0	

$\mathtt{cdHIm}$	$2.107 \cdot 10^{-39}$	$2.107 \cdot 10^{-39}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
cdHRe	$-6.415 \cdot 10^{-23}$	$-6.415 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
cdWIm	$2.755 \cdot 10^{-27}$	$2.755 \cdot 10^{-27}$	0	$2.781 \cdot 10^{-13}$	$2.781 \cdot 10^{-13}$	0
cdWRe	$-9.509 \cdot 10^{-13}$	$-9.509 \cdot 10^{-13}$	0	$1.483 \cdot 10^{-12}$	$1.483 \cdot 10^{-12}$	0
ceBIm	$3.44 \cdot 10^{-30}$	$3.44 \cdot 10^{-30}$	$8.71 \cdot 10^{-5}$	$5.317 \cdot 10^{-16}$	$5.317 \cdot 10^{-16}$	$-3.216 \cdot 10^{-6}$
ceBRe	$2.362 \cdot 10^{-15}$	$2.362 \cdot 10^{-15}$	$-1.566 \cdot 10^{-6}$	$5.317 \cdot 10^{-16}$	$5.317 \cdot 10^{-16}$	$-3.216 \cdot 10^{-6}$
$\mathtt{ceHIm}$	$2.421 \cdot 10^{-40}$	$2.395 \cdot 10^{-40}$	0.01054	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	$-3.216 \cdot 10^{-6}$
ceHRe	$-6.415 \cdot 10^{-23}$	$-6.415 \cdot 10^{-23}$	$-1.606 \cdot 10^{-6}$	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	$-3.216 \cdot 10^{-6}$
ceWIm	$5.535 \cdot 10^{-30}$	$5.531 \cdot 10^{-30}$	0.0006592	$3.346 \cdot 10^{-15}$	$3.346 \cdot 10^{-15}$	$-3.198 \cdot 10^{-6}$
ceWRe	$-5.629 \cdot 10^{-15}$	$-5.629 \cdot 10^{-15}$	$-1.599 \cdot 10^{-6}$	$1.784 \cdot 10^{-14}$	$1.784 \cdot 10^{-14}$	$-3.195 \cdot 10^{-6}$
ced	0.004052	0.004052	0	0.04962	0.04962	0
cld	0.005101	0.005101	0	0.1257	0.1257	0
${\tt cledqIm}$	$-8.855 \cdot 10^{-38}$	$-1.721 \cdot 10^{-37}$	-0.944	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	$-3.195 \cdot 10^{-6}$
cledqRe	$-2.08 \cdot 10^{-21}$	$-2.08 \cdot 10^{-21}$	$-1.634 \cdot 10^{-6}$	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	$-3.195 \cdot 10^{-6}$
cll1	$7.945 \cdot 10^{-5}$	$7.945 \cdot 10^{-5}$	0	$2.408 \cdot 10^{-6}$	$2.408 \cdot 10^{-6}$	0
clq1	0.0001404	0.0001404	0	0.0007244	0.0007244	0
clq3	0.009621	0.009621	0	0.04962	0.04962	0
cqe	-0.01261	-0.01261	0	0.303	0.303	0
sm	0	0	0	0.0002639	0.0002639	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.002526	-0.002526	0	0.0001995	0.0001995	0	
cHWB	-0.00186	-0.00186	0	0.0001547	0.0001547	0	
сНе	-0.005268	-0.005268	0	0.0003583	0.0003583	0	
cHl1	-0.0009962	-0.0009962	0	$4.438 \cdot 10^{-5}$	$4.438 \cdot 10^{-5}$	0	
cH13	-0.001403	-0.001403	0	$9.423 \cdot 10^{-5}$	$9.423 \cdot 10^{-5}$	0	

ceBIm	$-2.81 \cdot 10^{-29}$	$-2.726 \cdot 10^{-29}$	0.0298	$4.271 \cdot 10^{-14}$	$4.271 \cdot 10^{-14}$	$-3.207 \cdot 10^{-6}$
ceBRe	$5.522 \cdot 10^{-14}$	$5.522 \cdot 10^{-14}$	$-1.612 \cdot 10^{-6}$	$4.271 \cdot 10^{-14}$	$4.271 \cdot 10^{-14}$	$-3.207 \cdot 10^{-6}$
ceWIm	$-5.496 \cdot 10^{-29}$	$-5.127 \cdot 10^{-29}$	0.06714	$1.49 \cdot 10^{-13}$	$1.49 \cdot 10^{-13}$	$-3.223 \cdot 10^{-6}$
ceWRe	$1.59 \cdot 10^{-13}$	$1.59 \cdot 10^{-13}$	$-1.572 \cdot 10^{-6}$	$2.83 \cdot 10^{-13}$	$2.83 \cdot 10^{-13}$	$-3.216 \cdot 10^{-6}$
cle	-0.2783	-0.2783	0	1	1	0
cll	0.08406	0.08406	0	0.6643	0.6643	0
cll1	0.003524	0.003524	0	0.0001068	0.0001068	0
sm	0	0	0	0.01301	0.01301	0

# $1.63 \quad e^+\nu_e \to \mu^+\nu_\mu$

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cH13	$5.961 \cdot 10^{-19}$	$5.961 \cdot 10^{-19}$	0	$6.771 \cdot 10^{-36}$ 6	$6.771 \cdot 10^{-36}$	0		
ceWIm	$2.586 \cdot 10^{-26}$	$5.817 \cdot 10^{-26}$	-1.25	$4.754 \cdot 10^{-9}$	$4.754 \cdot 10^{-9}$	$-5.679 \cdot 10^{-7}$		
ceWRe	$-5.329 \cdot 10^{-9}$	$-5.329 \cdot 10^{-9}$	$-3.003 \cdot 10^{-7}$	$2.511 \cdot 10^{-9}$	$2.511 \cdot 10^{-9}$	$-5.575 \cdot 10^{-7}$		
cll1	0.6185	0.6185	0	2.901	2.901	0		
$\mathtt{sm}$	0	0	0	0.008935	0.008935	0		

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

		interfere	ence	square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	-0.002651	-0.002651	0	0.0003306	0.0003306	0	
cHWB	-0.0006372	-0.0006372	0	0.0002749	0.0002749	0	
сНе	-0.002942	-0.002942	0	0.0002001	0.0002001	0	
cHl1	-0.0003412	-0.0003412	0	$7.883 \cdot 10^{-5}$	$7.883 \cdot 10^{-5}$	0	
cH13	-0.0005447	-0.0005447	0	$4.678 \cdot 10^{-5}$	$4.678 \cdot 10^{-5}$	0	
ceBIm	$-4.689 \cdot 10^{-27}$	$-4.691 \cdot 10^{-27}$	-0.0002918	$7.088 \cdot 10^{-14}$	$7.088 \cdot 10^{-14}$	$-3.202 \cdot 10^{-6}$	

ceBRe	$1.183 \cdot 10^{-13}$	$1.183 \cdot 10^{-13}$	$-1.606 \cdot 10^{-6}$	$7.088 \cdot 10^{-14}$	$7.088 \cdot 10^{-14}$	$-3.202 \cdot 10^{-6}$
ceWIm	$-8.444 \cdot 10^{-27}$		$-9.05 \cdot 10^{-5}$	= -	$5.468 \cdot 10^{-16}$	$-3.219 \cdot 10^{-6}$
ceWRe		$-4.273 \cdot 10^{-14}$	$-1.591 \cdot 10^{-6}$	$5.274 \cdot 10^{-15}$	$5.274 \cdot 10^{-15}$	$-3.204 \cdot 10^{-6}$
cle	-0.208	-0.208	0	1	1	0
cll	0.4294	0.4294	0	1.145	1.145	0
cll1	0.2471	0.2471	0	0.7222	0.7222	0
sm	0	0	0	0.05695	0.05695	0

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

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-1.393	-1.393	0	0.08112	0.08112	0	
cHWB	-3.033	-3.033	0	0.3565	0.3565	0	
cHbox	$4.541 \cdot 10^{-16}$	$4.541 \cdot 10^{-16}$	0	$2.19 \cdot 10^{-18}$	$2.19 \cdot 10^{-18}$	0	
сНе	0.002414	0.002414	0	0.0001541	0.0001541	0	
cHl1	0.2184	0.2184	0	0.017	0.017	0	
cH13	-0.01138	-0.01138	0	0.0008985	0.0008985	0	
ceBIm	$-4.002 \cdot 10^{-15}$	$-4.002 \cdot 10^{-15}$	$3.048 \cdot 10^{-6}$	$5.154 \cdot 10^{-5}$	$5.154 \cdot 10^{-5}$	$6.112 \cdot 10^{-6}$	
ceBRe	$-9.796 \cdot 10^{-6}$	$-9.796 \cdot 10^{-6}$	$3.052 \cdot 10^{-6}$	$5.154 \cdot 10^{-5}$	$5.154 \cdot 10^{-5}$	$6.112 \cdot 10^{-6}$	
$\mathtt{ceHIm}$	$-4.354 \cdot 10^{-27}$	$-4.354 \cdot 10^{-27}$	$-1.608 \cdot 10^{-6}$	$1.563 \cdot 10^{-18}$	$1.563 \cdot 10^{-18}$	$1.472 \cdot 10^{-6}$	
ceHRe	$-4.541 \cdot 10^{-16}$	$-4.541 \cdot 10^{-16}$	$7.267 \cdot 10^{-7}$	$2.19 \cdot 10^{-18}$	$2.19 \cdot 10^{-18}$	$1.461 \cdot 10^{-6}$	
ceWIm	$6.333 \cdot 10^{-15}$	$6.333 \cdot 10^{-15}$	$3.047 \cdot 10^{-6}$	$3.229 \cdot 10^{-5}$	$3.229 \cdot 10^{-5}$	$6.1 \cdot 10^{-6}$	
ceWRe	$-5.176 \cdot 10^{-8}$	$-5.176 \cdot 10^{-8}$	$3.052 \cdot 10^{-6}$	$1.959 \cdot 10^{-6}$	$1.959 \cdot 10^{-6}$	$6.073 \cdot 10^{-6}$	
cee	-0.1532	-0.1532	0	0.7226	0.7226	0	
cle	-0.4287	-0.4287	0	2	2	0	
cll	-6.683	-6.683	0	3.468	3.468	0	
cll1	-0.1666	-0.1666	0	0.7124	0.7124	0	
sm	0	0	0	7.598	7.598	0	

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

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
cHDD	-0.003391	-0.003391	0	0.0001929	0.0001929	0
cHWB	-0.006918	-0.006918	0	0.0006436	0.0006436	0
cHbox	$2.012 \cdot 10^{-19}$	$2.012 \cdot 10^{-19}$	0	$1.203 \cdot 10^{-20}$	$1.203 \cdot 10^{-20}$	0
сНе	-0.001375	-0.001375	0	$4.323 \cdot 10^{-5}$	$4.323 \cdot 10^{-5}$	0
cHl1	0.001582	0.001582	0	$5.592 \cdot 10^{-5}$	$5.592 \cdot 10^{-5}$	0
cH13	-0.004358	-0.004358	0	0.0002134	0.0002134	0
ceBIm	$2.578 \cdot 10^{-25}$	$2.795 \cdot 10^{-25}$	-0.08388	$2.219 \cdot 10^{-9}$	$2.219 \cdot 10^{-9}$	$-5.409 \cdot 10^{-7}$
ceBRe	$5.334 \cdot 10^{-9}$	$5.334 \cdot 10^{-9}$	$-2.812 \cdot 10^{-7}$	$2.219 \cdot 10^{-9}$	$2.219 \cdot 10^{-9}$	$-5.409 \cdot 10^{-7}$
$\mathtt{ceHIm}$	$1.837 \cdot 10^{-35}$	$3.087 \cdot 10^{-35}$	-0.6804	$6.017 \cdot 10^{-21}$	$6.017 \cdot 10^{-21}$	$-1.895 \cdot 10^{-6}$
ceHRe	$-2.012 \cdot 10^{-19}$	$-2.012 \cdot 10^{-19}$	$-9.444 \cdot 10^{-7}$	$1.203 \cdot 10^{-20}$	$1.203 \cdot 10^{-20}$	$-1.911 \cdot 10^{-6}$
ceWIm	$1.135 \cdot 10^{-26}$	$5.229 \cdot 10^{-26}$	-3.606	$1.56 \cdot 10^{-9}$	$1.56 \cdot 10^{-9}$	$-5.769 \cdot 10^{-7}$
ceWRe	$-3.729 \cdot 10^{-9}$	$-3.729 \cdot 10^{-9}$	$-2.681 \cdot 10^{-7}$	$1.069 \cdot 10^{-9}$	$1.069 \cdot 10^{-9}$	$-5.61 \cdot 10^{-7}$
cee	0.3729	0.3729	0	3.045	3.045	0
cle	0.003961	0.003961	0	0.03255	0.03255	0
cll	0.3486	0.3486	0	2.535	2.535	0
cll1	0.4218	0.4218	0	3.07	3.07	0
sm	0	0	0	0.0218	0.0218	0

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

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-0.006403	-0.006403	0	0.0004305	0.0004305	0	
cHWB	-0.01583	-0.01583	0	0.00263	0.00263	0	
cHbox	$-1.439 \cdot 10^{-13}$	$-1.439 \cdot 10^{-13}$	0	$8.112 \cdot 10^{-25}$	$8.112 \cdot 10^{-25}$	0	

сНе	0.002303	0.002303	0	$8.653 \cdot 10^{-5}$	$8.653 \cdot 10^{-5}$	0
cHl1	-0.002566	-0.002566	0	$8.456 \cdot 10^{-5}$	$8.456 \cdot 10^{-5}$	0
cH13	-0.00557	-0.00557	0	0.0005059	0.0005059	0
ceBIm	$2.417 \cdot 10^{-28}$	$2.386 \cdot 10^{-28}$	0.01291	$1.027 \cdot 10^{-12}$	$1.027 \cdot 10^{-12}$	$-3.213 \cdot 10^{-6}$
ceBRe	$2.901 \cdot 10^{-13}$	$2.901 \cdot 10^{-13}$	$-1.586 \cdot 10^{-6}$	$1.027 \cdot 10^{-12}$	$1.027 \cdot 10^{-12}$	$-3.213 \cdot 10^{-6}$
$\mathtt{ceHIm}$	$1.566 \cdot 10^{-30}$	$2.35 \cdot 10^{-31}$	0.8499	$5.448 \cdot 10^{-25}$	$5.448 \cdot 10^{-25}$	$-3.212 \cdot 10^{-6}$
ceHRe	$1.439 \cdot 10^{-13}$	$1.439 \cdot 10^{-13}$	$-1.668 \cdot 10^{-6}$	$8.112 \cdot 10^{-25}$	$8.112 \cdot 10^{-25}$	$-3.205 \cdot 10^{-6}$
ceWIm	$-1.078 \cdot 10^{-28}$	$-1.077 \cdot 10^{-28}$	0.0006664	$7.129 \cdot 10^{-13}$	$7.129 \cdot 10^{-13}$	$-3.212 \cdot 10^{-6}$
ceWRe	$-2.467 \cdot 10^{-13}$	$-2.467 \cdot 10^{-13}$	$-1.581 \cdot 10^{-6}$	$1.805 \cdot 10^{-13}$	$1.805 \cdot 10^{-13}$	$-3.214 \cdot 10^{-6}$
cee	-0.001084	-0.001084	0	0.1636	0.1636	0
cle	-0.07676	-0.07676	0	3.616	3.616	0
cll	-0.09588	-0.09588	0	2.313	2.313	0
cll1	0.0006611	0.0006611	0	0.1636	0.1636	0
sm	0	0	0	0.02438	0.02438	0

### **1.68** $gg \rightarrow gg$

		interfere	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cG	$-9.951 \cdot 10^{-10}$	$-9.951 \cdot 10^{-10}$	$-5.286 \cdot 10^{-6}$	90.12	90.12	0
cGtil	$-2.873 \cdot 10^{-15}$	$-2.624 \cdot 10^{-15}$	0.08663	90.12	90.12	0
cHGtil	$-2.657 \cdot 10^{-15}$	$-2.657 \cdot 10^{-15}$	0	$1.576 \cdot 10^{-32}$	$1.576 \cdot 10^{-32}$	0
sm	0	0	0	2111	2111	0

## $\textbf{1.69} \quad gg \to ggg$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сG	0.01358	0.01358	0	0.02785	0.02785	0

cGtil	0.01171	0.01171	0	0.02785	0.02785	0
cHGtil	$-2.905 \cdot 10^{-13}$	$-2.905 \cdot 10^{-13}$	0	$6.726 \cdot 10^{-26}$	$6.726 \cdot 10^{-26}$	0
sm	0	0	0	0.8518	0.8518	0

# 1.70 $gg \rightarrow t\bar{t}$

		square				
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
сG	-0.04108	-0.04108	0	2.138	2.138	0
cGtil	$8.015 \cdot 10^{-17}$	$8.015 \cdot 10^{-17}$	0	2.138	2.138	0
cHG	-0.04627	-0.04627	0	0.04069	0.04069	0
cHGtil	$2.08 \cdot 10^{-18}$	$2.08 \cdot 10^{-18}$	0	0.04069	0.04069	0
cuGIm	$-1.033 \cdot 10^{-18}$	$-4.403 \cdot 10^{-18}$	-3.261	0.0819	0.0819	$6.105 \cdot 10^{-8}$
cuGRe	-0.1585	-0.1585	$6.31 \cdot 10^{-8}$	0.08864	0.08864	$5.641 \cdot 10^{-8}$
sm	0	0	0	0.5291	0.5291	0

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сG	$-4.868 \cdot 10^{-13}$	$-4.868 \cdot 10^{-13}$	0	2.099	2.099	0
cGtil	$4.532 \cdot 10^{-28}$	$4.532 \cdot 10^{-28}$	0	2.099	2.099	0
сHG	$-8.365 \cdot 10^{-12}$	$-8.365 \cdot 10^{-12}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0
cHGtil	$2.144 \cdot 10^{-28}$	$2.144 \cdot 10^{-28}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0
cuGIm	$-3.696 \cdot 10^{-28}$	$-3.696 \cdot 10^{-28}$	0	$1.213 \cdot 10^{-11}$	$1.213 \cdot 10^{-11}$	0
cuGRe	$-1.995 \cdot 10^{-11}$	$-1.995 \cdot 10^{-11}$	0	$1.213 \cdot 10^{-11}$	$1.213 \cdot 10^{-11}$	0
$\mathtt{sm}$	0	0	0	0.3275	0.3275	0

### 1.72 $s\bar{s} \rightarrow \nu_{\tau}\bar{\nu}_{\tau}$

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	$-2.839 \cdot 10^{-5}$	$-2.839 \cdot 10^{-5}$	0	$1.498 \cdot 10^{-6}$	$1.498 \cdot 10^{-6}$	0	
cHWB	$-6.215 \cdot 10^{-6}$	$-6.215 \cdot 10^{-6}$	0	$1.124 \cdot 10^{-6}$	$1.124 \cdot 10^{-6}$	0	
cHd	$-6.425 \cdot 10^{-5}$	$-6.425 \cdot 10^{-5}$	0	$1.311 \cdot 10^{-5}$	$1.311 \cdot 10^{-5}$	0	
cHl1	$-4.517 \cdot 10^{-5}$	$-4.517 \cdot 10^{-5}$	0	$1.369 \cdot 10^{-6}$	$1.369 \cdot 10^{-6}$	0	
cH13	-0.00043	-0.00043	0	$1.303 \cdot 10^{-5}$	$1.303 \cdot 10^{-5}$	0	
cHq1	$4.185 \cdot 10^{-5}$	$4.185 \cdot 10^{-5}$	0	$1.49 \cdot 10^{-6}$	$1.49 \cdot 10^{-6}$	0	
cHq3	0.0005047	0.0005047	0	$1.797 \cdot 10^{-5}$	$1.797 \cdot 10^{-5}$	0	
cdBIm	$-1.892 \cdot 10^{-25}$	$-1.892 \cdot 10^{-25}$	0	$1.352 \cdot 10^{-10}$	$1.352 \cdot 10^{-10}$	0	
cdBRe	$-4.089 \cdot 10^{-10}$	$-4.089 \cdot 10^{-10}$	0	$7.808 \cdot 10^{-11}$	$7.808 \cdot 10^{-11}$	0	
$\mathtt{cdWIm}$	$-3.532 \cdot 10^{-25}$	$-3.532 \cdot 10^{-25}$	0	$4.714 \cdot 10^{-10}$	$4.714 \cdot 10^{-10}$	0	
cdWRe	$-7.635 \cdot 10^{-10}$	$-7.635 \cdot 10^{-10}$	0	$2.723 \cdot 10^{-10}$	$2.723 \cdot 10^{-10}$	0	
cld	0.000212	0.000212	0	0.005157	0.005157	0	
cll1	0.00043	0.00043	0	$1.303 \cdot 10^{-5}$	$1.303 \cdot 10^{-5}$	0	
clq1	-0.004991	-0.004991	0	0.02119	0.02119	0	
clq3	0.06019	0.06019	0	0.2556	0.2556	0	
sm	0	0	0	0.0003726	0.0003726	0	

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

		interfere	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
cHDD	-0.3639	-0.3639	0	0.01744	0.01744	0
cHWB	0.01418	0.01418	0	0.07002	0.07002	0
cHbox	$-1.801 \cdot 10^{-6}$	$-1.801 \cdot 10^{-6}$	0	$4.153 \cdot 10^{-16}$	$4.153 \cdot 10^{-16}$	0
cHd	0.1842	0.1842	0	0.2369	0.2369	0

cH13	0.04244	0.04244	0	0.0006374	0.0006374	0
cHq1	4.815	4.815	0	0.4369	0.4369	0
сНqЗ	-0.03891	-0.03891	0	0.0007186	0.0007186	0
cdBIm	$1.894 \cdot 10^{-22}$	$1.847 \cdot 10^{-22}$	0.02511	$1.214 \cdot 10^{-7}$	$1.214 \cdot 10^{-7}$	0
cdBRe	$-3.936 \cdot 10^{-9}$	$-3.936 \cdot 10^{-9}$	0	$6.152 \cdot 10^{-9}$	$6.152 \cdot 10^{-9}$	0
cdGIm	$-1.285 \cdot 10^{-23}$	$-1.285 \cdot 10^{-23}$	0	$1.636 \cdot 10^{-7}$	$1.636 \cdot 10^{-7}$	0
cdGRe	$-2.473 \cdot 10^{-7}$	$-2.473 \cdot 10^{-7}$	0	$1.636 \cdot 10^{-7}$	$1.636 \cdot 10^{-7}$	0
$\mathtt{cdHIm}$	$-1.943 \cdot 10^{-23}$	$-1.943 \cdot 10^{-23}$	0	$2.305 \cdot 10^{-16}$	$2.305 \cdot 10^{-16}$	0
cdHRe	$1.801 \cdot 10^{-6}$	$1.801 \cdot 10^{-6}$	0	$4.153 \cdot 10^{-16}$	$4.153 \cdot 10^{-16}$	0
$\mathtt{cdWIm}$	$2.974 \cdot 10^{-22}$	$2.982 \cdot 10^{-22}$	-0.002627	$5.124 \cdot 10^{-7}$	$5.124 \cdot 10^{-7}$	0
cdWRe	$4.118 \cdot 10^{-8}$	$4.118 \cdot 10^{-8}$	0	$3.836 \cdot 10^{-8}$	$3.836 \cdot 10^{-8}$	0
cdd	-202.1	-202.1	0	10.39	10.39	0
cdd1	-202.1	-202.1	0	10.39	10.39	0
cll1	-0.02122	-0.02122	0	0.0001593	0.0001593	0
cqd1	0.07387	0.07387	0	2.219	2.219	0
cqd8	-3.832	-3.832	0	0.4932	0.4932	0
cqq1	-2.89	-2.89	0	4.772	4.772	0
cqq11	-2.89	-2.89	$6.92 \cdot 10^{-8}$	4.772	4.772	$1.257 \cdot 10^{-7}$
cqq3	-2.89	-2.89	0	4.772	4.772	0
cqq31	-2.89	-2.89	$-3.46 \cdot 10^{-8}$	4.772	4.772	$-8.383 \cdot 10^{-8}$
$\mathtt{sm}$	0	0	0	$1.173 \cdot 10^4$	$1.173 \cdot 10^4$	0

# 1.74 $t\bar{t} \rightarrow \nu_{\mu}\bar{\nu}_{\mu}$

		interfer	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$4.605 \cdot 10^{-5}$	$4.605 \cdot 10^{-5}$	0	$1.395 \cdot 10^{-6}$	$1.395 \cdot 10^{-6}$	0	
cHWB	0.0001588	0.0001588	0	$4.978 \cdot 10^{-6}$	$4.978 \cdot 10^{-6}$	0	
cHl1	-0.0002044	-0.0002044	0	$6.197 \cdot 10^{-6}$	$6.197 \cdot 10^{-6}$	0	

cH13	-0.0001133	-0.0001133	0	$3.433 \cdot 10^{-6}$	$3.433 \cdot 10^{-6}$	0
cHq1	-0.0002895	-0.0002895	0	$1.278 \cdot 10^{-5}$	$1.278 \cdot 10^{-5}$	0
cHq3	0.0001433	0.0001433	0	$6.477 \cdot 10^{-6}$	$6.477 \cdot 10^{-6}$	0
сHu	$3.288 \cdot 10^{-6}$	$3.288 \cdot 10^{-6}$	0	$1.99 \cdot 10^{-6}$	$1.99 \cdot 10^{-6}$	0
cll1	0.0001133	0.0001133	0	$3.433 \cdot 10^{-6}$	$3.433 \cdot 10^{-6}$	0
clq1	0.03452	0.03452	0	0.1818	0.1818	0
clq3	0.01709	0.01709	0	0.09213	0.09213	0
clu	-0.0003921	-0.0003921	0	0.0283	0.0283	0
cuBIm	$5.654 \cdot 10^{-20}$	$5.655 \cdot 10^{-20}$	$-5.201 \cdot 10^{-5}$	0.0004585	0.0004585	$6.543 \cdot 10^{-8}$
cuBRe	0.0008392	0.0008392	$3.575 \cdot 10^{-8}$	0.0006061	0.0006061	$6.599 \cdot 10^{-8}$
cuWIm	$-3.257 \cdot 10^{-19}$	$-3.257 \cdot 10^{-19}$	0	0.002029	0.002029	$4.929 \cdot 10^{-8}$
cuWRe	-0.001567	-0.001567	$6.381 \cdot 10^{-8}$	0.002114	0.002114	$4.731 \cdot 10^{-8}$
sm	0	0	0	0.001686	0.001686	0

### 1.75 $t\bar{t} \rightarrow \tau^+\tau^-$

			square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
cHDD	-0.0002072	-0.0002072	0	$1.229 \cdot 10^{-5}$	$1.229 \cdot 10^{-5}$	0
cHWB	-0.000513	-0.000513	0	$7.018 \cdot 10^{-5}$	$7.018 \cdot 10^{-5}$	0
cHbox	$2.022 \cdot 10^{-6}$	$2.022 \cdot 10^{-6}$	0	$1.221 \cdot 10^{-7}$	$1.221 \cdot 10^{-7}$	0
сНе	$5.546 \cdot 10^{-5}$	$5.546 \cdot 10^{-5}$	0	$7.713 \cdot 10^{-6}$	$7.713 \cdot 10^{-6}$	0
cHl1	$4.103 \cdot 10^{-5}$	$4.103 \cdot 10^{-5}$	0	$2.327 \cdot 10^{-6}$	$2.327 \cdot 10^{-6}$	0
cH13	-0.0002433	-0.0002433	0	$1.8 \cdot 10^{-5}$	$1.8\cdot10^{-5}$	0
cHq1	$-3.244 \cdot 10^{-5}$	$-3.244 \cdot 10^{-5}$	0	$3.034 \cdot 10^{-6}$	$3.034 \cdot 10^{-6}$	0
cHq3	$-2.008 \cdot 10^{-5}$	$-2.008 \cdot 10^{-5}$	0	$3.504 \cdot 10^{-6}$	$3.504 \cdot 10^{-6}$	0
cHu	$-2.985 \cdot 10^{-5}$	$-2.985 \cdot 10^{-5}$	0	$3.705 \cdot 10^{-6}$	$3.705 \cdot 10^{-6}$	0
ceBIm	$-6.663 \cdot 10^{-22}$	$-6.649 \cdot 10^{-22}$	0.00197	$1.172 \cdot 10^{-7}$	$1.172 \cdot 10^{-7}$	$6.143 \cdot 10^{-6}$
ceBRe	$3.128 \cdot 10^{-7}$	$3.128 \cdot 10^{-7}$	$3.069 \cdot 10^{-6}$	$1.172 \cdot 10^{-7}$	$1.172 \cdot 10^{-7}$	$6.058 \cdot 10^{-6}$
ceHIm	$7.995 \cdot 10^{-23}$	$9.46 \cdot 10^{-24}$	0.8817	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	$6.095 \cdot 10^{-6}$

ceHRe	$-1.011 \cdot 10^{-6}$	$-1.011 \cdot 10^{-6}$	$2.968 \cdot 10^{-6}$	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	$6.095 \cdot 10^{-6}$
ceWIm	$-1.275 \cdot 10^{-21}$	$-1.264 \cdot 10^{-21}$	0.008753	$2.123 \cdot 10^{-7}$	$2.123 \cdot 10^{-7}$	$6.077 \cdot 10^{-6}$
ceWRe	$-5.528 \cdot 10^{-7}$	$-5.528 \cdot 10^{-7}$	$3.039 \cdot 10^{-6}$	$1.396 \cdot 10^{-7}$	$1.396 \cdot 10^{-7}$	$6.159 \cdot 10^{-6}$
ceu	-0.008543	-0.008543	0	0.04987	0.04987	0
clequ1Im	$-3.581 \cdot 10^{-22}$	$-2.617 \cdot 10^{-21}$	-6.307	$1.711 \cdot 10^{-5}$	$1.711 \cdot 10^{-5}$	$7.013 \cdot 10^{-6}$
clequ1Re	$3.402 \cdot 10^{-5}$	$3.402 \cdot 10^{-5}$	$3.498 \cdot 10^{-6}$	$1.711 \cdot 10^{-5}$	$1.711 \cdot 10^{-5}$	$7.013 \cdot 10^{-6}$
clequ3Im	$2.989 \cdot 10^{-22}$	$2.153 \cdot 10^{-21}$	-6.204	$3.429 \cdot 10^{-5}$	$3.429 \cdot 10^{-5}$	$7.029 \cdot 10^{-6}$
clequ3Re	$3.888 \cdot 10^{-5}$	$3.888 \cdot 10^{-5}$	$3.498 \cdot 10^{-6}$	$3.429 \cdot 10^{-5}$	$3.429 \cdot 10^{-5}$	$6.999 \cdot 10^{-6}$
cll1	0.0001083	0.0001083	0	$3.283 \cdot 10^{-6}$	$3.283 \cdot 10^{-6}$	0
clq1	-0.0125	-0.0125	0	0.04987	0.04987	0
clq3	0.004073	0.004073	0	0.01393	0.01393	0
clu	-0.01352	-0.01352	0	0.1378	0.1378	0
cqe	-0.007145	-0.007145	0	0.1378	0.1378	0
cuBIm	$1.015 \cdot 10^{-18}$	$1.015 \cdot 10^{-18}$	0	0.002666	0.002666	$3.752 \cdot 10^{-8}$
cuBRe	-0.002229	-0.002229	$4.486 \cdot 10^{-8}$	0.003392	0.003392	$5.895 \cdot 10^{-8}$
cuHIm	$-5.065 \cdot 10^{-23}$	$9.117 \cdot 10^{-23}$	2.8	$3.439 \cdot 10^{-8}$	$3.439 \cdot 10^{-8}$	$5.816 \cdot 10^{-8}$
cuHRe	$-1.011 \cdot 10^{-6}$	$-1.011 \cdot 10^{-6}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	$6.554 \cdot 10^{-8}$
cuWIm	$1.498 \cdot 10^{-18}$	$1.498 \cdot 10^{-18}$	$-2.944 \cdot 10^{-5}$	0.001189	0.001189	$8.408 \cdot 10^{-8}$
cuWRe	-0.001861	-0.001861	$5.375 \cdot 10^{-8}$	0.002385	0.002385	$8.384 \cdot 10^{-8}$
sm	0	0	0	0.001444	0.001444	0

# 1.76 $t\bar{t} \rightarrow c\bar{c}$

		interfere	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	-0.0008455	-0.0008455	0	$5.101 \cdot 10^{-5}$	$5.101 \cdot 10^{-5}$	0
cHWB	-0.001915	-0.001915	0	0.000154	0.000154	0
cHbox	$3.118 \cdot 10^{-6}$	$3.118 \cdot 10^{-6}$	0	$1.87 \cdot 10^{-7}$	$1.87 \cdot 10^{-7}$	0
cH13	-0.0005156	-0.0005156	0	$3.126 \cdot 10^{-5}$	$3.126 \cdot 10^{-5}$	0

cHq1	-0.002353	-0.002353	0	0.0001246	0.0001246	0
cHq3	0.0002347	0.0002347	0	$2.075 \cdot 10^{-5}$	$2.075 \cdot 10^{-5}$	0
cHu	0.0004398	0.0004398	0	$2.139 \cdot 10^{-5}$	$2.139 \cdot 10^{-5}$	0
cll1	0.0002578	0.0002578	0	$7.815 \cdot 10^{-6}$	$7.815 \cdot 10^{-6}$	0
cqq1	0.05405	0.05405	0	0.4746	0.4746	0
cqq11	0.4091	0.4091	0	0.4746	0.4746	$-2.107 \cdot 10^{-8}$
cqq3	0.05405	0.05405	0	0.4746	0.4746	0
cqq31	0.4091	0.4091	0	0.4746	0.4746	$2.107 \cdot 10^{-8}$
cqu1	0.01017	0.01017	0	0.01186	0.01186	0
cqu8	0.04712	0.04712	0	0.002637	0.002637	0
cuBIm	$3.215 \cdot 10^{-19}$	$3.216 \cdot 10^{-19}$	-0.0001372	0.0006012	0.0006012	$4.99 \cdot 10^{-8}$
cuBRe	-0.004406	-0.004406	$2.27 \cdot 10^{-8}$	0.001425	0.001425	$7.015 \cdot 10^{-8}$
cuGIm	$-1.226 \cdot 10^{-22}$	$-5.815 \cdot 10^{-23}$	0.5256	0.006846	0.006846	$7.303 \cdot 10^{-8}$
cuGRe	-0.1971	-0.1971	$5.074 \cdot 10^{-8}$	0.01623	0.01623	$6.16 \cdot 10^{-8}$
$\mathtt{cuHIm}$	$1.245 \cdot 10^{-22}$	$1.484 \cdot 10^{-22}$	-0.192	$9.945 \cdot 10^{-8}$	$9.945 \cdot 10^{-8}$	$3.017 \cdot 10^{-8}$
cuHRe	$-3.118 \cdot 10^{-6}$	$-3.118 \cdot 10^{-6}$	$3.207 \cdot 10^{-8}$	$1.87 \cdot 10^{-7}$	$1.87 \cdot 10^{-7}$	0
cuWIm	$1.44 \cdot 10^{-18}$	$1.44 \cdot 10^{-18}$	$7.352 \cdot 10^{-5}$	0.005311	0.005311	$5.648 \cdot 10^{-8}$
cuWRe	-0.008333	-0.008333	$2.4 \cdot 10^{-8}$	0.002659	0.002659	$7.522 \cdot 10^{-8}$
cuu	0.1993	0.1993	0	3.632	3.632	0
cuu1	2.536	2.536	0	3.632	3.632	$2.754 \cdot 10^{-8}$
sm	0	0	0	0.9637	0.9637	0

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

		interfer	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	$-6.2 \cdot 10^{-5}$	$-6.2\cdot10^{-5}$	0	$9.765 \cdot 10^{-6}$	$9.765 \cdot 10^{-6}$	0
cHWB	-0.0001297	-0.0001297	0	$2.785 \cdot 10^{-5}$	$2.785 \cdot 10^{-5}$	0
cHbox	$4.152 \cdot 10^{-11}$	$4.152 \cdot 10^{-11}$	0	$2.529 \cdot 10^{-12}$	$2.529 \cdot 10^{-12}$	0

cHd	$-7.811 \cdot 10^{-5}$	$-7.811 \cdot 10^{-5}$	0	$4.846 \cdot 10^{-6}$	$4.846 \cdot 10^{-6}$	0
cH13	-0.0001796	-0.0001796	0	$1.089 \cdot 10^{-5}$	$1.089 \cdot 10^{-5}$	0
cHq1	-0.0001730 $-0.0001808$	-0.0001798	0	$1.574 \cdot 10^{-6}$	$1.574 \cdot 10^{-6}$	0
cHq3	0.0001613	0.0001613	0	$1.274 \cdot 10^{-5}$	$1.274 \cdot 10^{-5}$	0
cHq5 cHu	$1.044 \cdot 10^{-5}$	$1.044 \cdot 10^{-5}$	0	$3.367 \cdot 10^{-6}$	$3.367 \cdot 10^{-6}$	0
cdBIm	$-2.787 \cdot 10^{-27}$	$-2.787 \cdot 10^{-27}$	0	$1.68 \cdot 10^{-12}$	$1.68 \cdot 10^{-12}$	0
cdBRe	$7.268 \cdot 10^{-12}$	$7.268 \cdot 10^{-12}$	0	$1.835 \cdot 10^{-12}$	$1.835 \cdot 10^{-12}$	0
cdGIm	$-5.902 \cdot 10^{-27}$	$-5.902 \cdot 10^{-27}$	0	$2.182 \cdot 10^{-11}$	$2.182 \cdot 10^{-11}$	0
cdGRe	$-3.562 \cdot 10$ $-1.567 \cdot 10^{-10}$	$-3.562 \cdot 10$ $-1.567 \cdot 10^{-10}$	0	$2.182 \cdot 10^{-11}$	$2.182 \cdot 10^{-11}$	0
cdHIm	$6.322 \cdot 10^{-29}$	$6.322 \cdot 10^{-29}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	0
cdHRe	$-2.076 \cdot 10^{-11}$	$-2.076 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	0
cdWIm	$-2.076 \cdot 10$ $-3.4 \cdot 10^{-27}$	$-2.076 \cdot 10$ $-3.4 \cdot 10^{-27}$	$2.577 \cdot 10^{-5}$	$3.003 \cdot 10^{-12}$	$3.003 \cdot 10^{-12}$	0
				$3.292 \cdot 10^{-12}$		
cdWRe	$-9.564 \cdot 10^{-12}$	$-9.564 \cdot 10^{-12}$	0		$3.292 \cdot 10^{-12}$	0
cll1	$8.981 \cdot 10^{-5}$	$8.981 \cdot 10^{-5}$	0	$2.722 \cdot 10^{-6}$	$2.722 \cdot 10^{-6}$	0
cqd1	-0.009935	-0.009935	0	0.6227	0.6227	0
cqd8	0.4297	0.4297	0	0.1384	0.1384	0
cqq1	-0.02242	-0.02242	0	0.2318	0.2318	0
cqq3	0.02242	0.02242	0	0.2318	0.2318	0
cqq31	0.4475	0.4475	0	0.9271	0.9271	0
cqu1	-0.00493	-0.00493	0	0.04579	0.04579	0
cqu8	0.0498	0.0498	0	0.01018	0.01018	0
cquqd11Im	$-1.786 \cdot 10^{-27}$	$-1.499 \cdot 10^{-27}$	0.1608	$1.622 \cdot 10^{-11}$	$1.622 \cdot 10^{-11}$	$6.166 \cdot 10^{-8}$
cquqd11Re	$2.411 \cdot 10^{-11}$	$2.411 \cdot 10^{-11}$	$4.147 \cdot 10^{-8}$	$1.622 \cdot 10^{-11}$	$1.622 \cdot 10^{-11}$	$6.166 \cdot 10^{-8}$
cquqd1Im	$2.227 \cdot 10^{-26}$	$1.042 \cdot 10^{-26}$	0.5324	$3.545 \cdot 10^{-10}$	$3.545 \cdot 10^{-10}$	$5.641 \cdot 10^{-8}$
cquqd1Re	$-7.019 \cdot 10^{-10}$	$-7.019 \cdot 10^{-10}$	$2.85 \cdot 10^{-8}$	$3.545 \cdot 10^{-10}$	$3.545 \cdot 10^{-10}$	$5.641 \cdot 10^{-8}$
cquqd81Im	$5.388 \cdot 10^{-28}$	$1.782 \cdot 10^{-27}$	-2.308	$3.604 \cdot 10^{-12}$	$3.604 \cdot 10^{-12}$	$5.549 \cdot 10^{-8}$
cquqd81Re	$-2.632 \cdot 10^{-10}$	$-2.632 \cdot 10^{-10}$	$3.799 \cdot 10^{-8}$	$4.902 \cdot 10^{-11}$	$4.902 \cdot 10^{-11}$	$6.12 \cdot 10^{-8}$
cquqd8Im	$3.873 \cdot 10^{-27}$	$-1.854 \cdot 10^{-27}$	1.479	$7.878 \cdot 10^{-11}$	$7.878 \cdot 10^{-11}$	$6.347 \cdot 10^{-8}$
cquqd8Re	$1.551 \cdot 10^{-11}$	$1.551 \cdot 10^{-11}$	0	$7.878 \cdot 10^{-11}$	$7.878 \cdot 10^{-11}$	$5.077 \cdot 10^{-8}$
544440110	1.001 10	1.001 10	O	1.010 10		3.011 10

cuBIm	$-5.33 \cdot 10^{-19}$	$-5.33 \cdot 10^{-19}$	$-5.794 \cdot 10^{-5}$	0.0005937	0.0005937	$6.738 \cdot 10^{-8}$
cuBRe	0.0005034	0.0005034	$1.987 \cdot 10^{-8}$	0.0008385	0.0008385	$5.963 \cdot 10^{-8}$
cuGIm	$1.47 \cdot 10^{-24}$	$2.941 \cdot 10^{-24}$	-1	0.02276	0.02276	$4.395 \cdot 10^{-8}$
cuGRe	-0.1971	-0.1971	$5.074 \cdot 10^{-8}$	0.03214	0.03214	$6.223 \cdot 10^{-8}$
cuHIm	$6.956 \cdot 10^{-28}$	$-4.151 \cdot 10^{-28}$	1.597	$7.125 \cdot 10^{-13}$	$7.125 \cdot 10^{-13}$	$5.614 \cdot 10^{-8}$
cuHRe	$-2.076 \cdot 10^{-11}$	$-2.076 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	$4.745 \cdot 10^{-8}$
cuWIm	$-4.305 \cdot 10^{-18}$	$-4.305 \cdot 10^{-18}$	$2.186 \cdot 10^{-5}$	0.004133	0.004133	$7.258 \cdot 10^{-8}$
cuWRe	-0.006419	-0.006419	$3.116 \cdot 10^{-8}$	0.005277	0.005277	$5.685 \cdot 10^{-8}$
cud1	-0.003553	-0.003553	0	0.05795	0.05795	0
cud8	0.458	0.458	0	0.1479	0.1479	0
sm	0	0	0	0.7599	0.7599	0

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

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-3.511 \cdot 10^{-5}$	$-3.511 \cdot 10^{-5}$	0	$4.987 \cdot 10^{-6}$	$4.987 \cdot 10^{-6}$	0	
cHWB	$-6.298 \cdot 10^{-5}$	$-6.298 \cdot 10^{-5}$	0	$1.579 \cdot 10^{-5}$	$1.579 \cdot 10^{-5}$	0	
cHbox	$1.655 \cdot 10^{-8}$	$1.655 \cdot 10^{-8}$	0	$1.003 \cdot 10^{-9}$	$1.003 \cdot 10^{-9}$	0	
cHd	$-3.41 \cdot 10^{-6}$	$-3.41 \cdot 10^{-6}$	0	$1.04 \cdot 10^{-5}$	$1.04\cdot10^{-5}$	0	
cH13	-0.0002301	-0.0002301	0	$1.395 \cdot 10^{-5}$	$1.395 \cdot 10^{-5}$	0	
cHq1	$-5.327 \cdot 10^{-5}$	$-5.327 \cdot 10^{-5}$	0	$2.747 \cdot 10^{-6}$	$2.747 \cdot 10^{-6}$	0	
cHq3	0.0002103	0.0002103	0	$1.555 \cdot 10^{-5}$	$1.555 \cdot 10^{-5}$	0	
cHu	$2.871\cdot10^{-5}$	$2.871 \cdot 10^{-5}$	0	$1.466 \cdot 10^{-5}$	$1.466 \cdot 10^{-5}$	0	
cdBIm	$1.857 \cdot 10^{-23}$	$1.856 \cdot 10^{-23}$	0.0006446	$1.028 \cdot 10^{-9}$	$1.028 \cdot 10^{-9}$	0	
cdBRe	$2.55\cdot 10^{-9}$	$2.55\cdot10^{-9}$	0	$8.037 \cdot 10^{-10}$	$8.037 \cdot 10^{-10}$	0	
cdGIm	$1.11 \cdot 10^{-25}$	$1.11 \cdot 10^{-25}$	0	$9.517 \cdot 10^{-9}$	$9.517 \cdot 10^{-9}$	0	
cdGRe	$-6.213 \cdot 10^{-8}$	$-6.213 \cdot 10^{-8}$	0	$9.517 \cdot 10^{-9}$	$9.517 \cdot 10^{-9}$	0	
$\mathtt{cdHIm}$	$3.156 \cdot 10^{-25}$	$1.044 \cdot 10^{-24}$	-2.307	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0	

cdHRe	$-8.274 \cdot 10^{-9}$	$-8.274 \cdot 10^{-9}$	0	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0
cdWIm	$3.549 \cdot 10^{-23}$	$3.55 \cdot 10^{-23}$	-0.0003591	$1.865 \cdot 10^{-9}$	$1.865 \cdot 10^{-9}$	0
cdWRe	$-3.457 \cdot 10^{-9}$	$-3.457 \cdot 10^{-9}$	0	$1.447 \cdot 10^{-9}$	$1.447 \cdot 10^{-9}$	0
cll1	0.000115	0.000115	0	$3.487 \cdot 10^{-6}$	$3.487 \cdot 10^{-6}$	0
cqd1	-0.009174	-0.009174	0	0.5657	0.5657	0
cqd8	0.3921	0.3921	0	0.1257	0.1257	0
cqq1	-0.0304	-0.0304	0	0.3086	0.3086	0
cqq3	0.0304	0.0304	0	0.3086	0.3086	0
cqq31	0.5433	0.5433	0	1.234	1.234	0
cqu1	0.00157	0.00157	0	0.28	0.28	0
cqu8	0.204	0.204	0	0.06222	0.06222	0
cquqd11Im	$2.958 \cdot 10^{-24}$	$6.688 \cdot 10^{-24}$	-1.261	$3.933 \cdot 10^{-8}$	$3.933 \cdot 10^{-8}$	$7.627 \cdot 10^{-8}$
cquqd11Re	$-1.343 \cdot 10^{-8}$	$-1.343 \cdot 10^{-8}$	0	$3.933 \cdot 10^{-8}$	$3.933 \cdot 10^{-8}$	$5.085 \cdot 10^{-8}$
cquqd1Im	$-6.99 \cdot 10^{-25}$	$-2.404 \cdot 10^{-23}$	-33.39	$1.406 \cdot 10^{-7}$	$1.406 \cdot 10^{-7}$	$7.112 \cdot 10^{-8}$
cquqd1Re	$-2.79 \cdot 10^{-7}$	$-2.79 \cdot 10^{-7}$	0	$1.406 \cdot 10^{-7}$	$1.406 \cdot 10^{-7}$	$7.112 \cdot 10^{-8}$
cquqd81Im	$1.12 \cdot 10^{-23}$	$1.538 \cdot 10^{-23}$	-0.3723	$8.74 \cdot 10^{-9}$	$8.74 \cdot 10^{-9}$	$5.721 \cdot 10^{-8}$
cquqd81Re	$-9.954 \cdot 10^{-8}$	$-9.954 \cdot 10^{-8}$	$3.014 \cdot 10^{-8}$	$1.766 \cdot 10^{-8}$	$1.766 \cdot 10^{-8}$	$5.663 \cdot 10^{-8}$
cquqd8Im	$-1.888 \cdot 10^{-24}$	$-3.627 \cdot 10^{-24}$	-0.9212	$3.124 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$6.401 \cdot 10^{-8}$
cquqd8Re	$5.32 \cdot 10^{-9}$	$5.32 \cdot 10^{-9}$	$3.759 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$6.401 \cdot 10^{-8}$
cuBIm	$1.088 \cdot 10^{-18}$	$1.088 \cdot 10^{-18}$	$-5.138 \cdot 10^{-5}$	0.0009644	0.0009644	$6.222 \cdot 10^{-8}$
cuBRe	0.0001565	0.0001565	0	0.001209	0.001209	$8.27 \cdot 10^{-8}$
cuGIm	$5.902 \cdot 10^{-24}$	$-1.274 \cdot 10^{-27}$	1	0.03696	0.03696	$5.411 \cdot 10^{-8}$
cuGRe	-0.1971	-0.1971	0	0.04635	0.04635	$6.473 \cdot 10^{-8}$
cuHIm	$4.287 \cdot 10^{-25}$	$4.143 \cdot 10^{-25}$	0.0335	$2.826 \cdot 10^{-10}$	$2.826 \cdot 10^{-10}$	$3.539 \cdot 10^{-8}$
cuHRe	$-8.274 \cdot 10^{-9}$	$-8.274 \cdot 10^{-9}$	$2.417 \cdot 10^{-8}$	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	$7.976 \cdot 10^{-8}$
cuWIm	$-5.308 \cdot 10^{-18}$	$-5.308 \cdot 10^{-18}$	$2.77 \cdot 10^{-6}$	0.004622	0.004622	$6.49 \cdot 10^{-8}$
cuWRe	-0.003506	-0.003506	$2.853 \cdot 10^{-8}$	0.00761	0.00761	$5.256 \cdot 10^{-8}$
cud1	-0.004598	-0.004598	0	0.07714	0.07714	0
cud8	0.1847	0.1847	0	0.05571	0.05571	0

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

		interfere		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	-95.39	-95.39	0	4.904	4.904	0	
cHWB	-234.4	-234.4	0	23.17	23.17	0	
cHbox	-4.175	-4.175	0	0.1087	0.1087	0	
cH13	0.09322	0.09322	0	0.01414	0.01414	0	
cHq1	-24.01	-24.01	0	2.405	2.405	0	
cHq3	-0.04311	-0.04311	0	0.008564	0.008564	0	
сHu	-32.96	-32.96	0	1.537	1.537	0	
cll1	-0.04661	-0.04661	0	0.003535	0.003535	0	
cqq1	-0.06188	-0.06188	0	1.563	1.563	0	
cqq11	-0.06188	-0.06188	0	1.563	1.563	0	
cqq3	-0.06188	-0.06188	$3.232 \cdot 10^{-8}$	1.563	1.563	$6.399 \cdot 10^{-8}$	
cqq31	-0.06188	-0.06188	$3.232 \cdot 10^{-8}$	1.563	1.563	$6.399 \cdot 10^{-8}$	
cqu1	-155.4	-155.4	0	7.201	7.201	0	
cqu8	-661.9	-661.9	0	1.534	1.534	0	
cuBIm	$-3.774 \cdot 10^{-14}$	$-3.783 \cdot 10^{-14}$	-0.002547	13.12	13.12	0	
cuBRe	45.61	45.61	$4.385 \cdot 10^{-8}$	13.06	13.06	$7.656 \cdot 10^{-8}$	
cuGIm	$-2.419 \cdot 10^{-15}$	$1.945 \cdot 10^{-14}$	9.041	149.2	149.2	$6.703 \cdot 10^{-8}$	
cuGRe	-34.17	-34.17	$2.926 \cdot 10^{-8}$	148.9	148.9	$6.715 \cdot 10^{-8}$	
$\mathtt{cuHIm}$	$-6.286 \cdot 10^{-16}$	$-2.023 \cdot 10^{-15}$	-2.217	0.004869	0.004869	$6.162 \cdot 10^{-8}$	
cuHRe	4.175	4.175	$2.395 \cdot 10^{-8}$	0.1087	0.1087	$9.202 \cdot 10^{-8}$	
cuWIm	$2.87 \cdot 10^{-17}$	$3.147 \cdot 10^{-17}$	-0.09654	0.04677	0.04677	$6.414 \cdot 10^{-8}$	
cuWRe	49.34	49.34	$4.053 \cdot 10^{-8}$	9.663	9.663	$6.209 \cdot 10^{-8}$	
cuu	-1478	-1478	0	37.24	37.24	0	

#### 1.80 $u\bar{d} \rightarrow \mu^+\nu_\mu$

interference square 1 - mod2/mod1mod1mod1mod21 - mod2/mod1mod2  $-2.465 \cdot 10^{-5}$  $-2.465 \cdot 10^{-5}$  $7.471 \cdot 10^{-7}$ cH13 0  $7.471 \cdot 10^{-7}$ 0  $2.465 \cdot 10^{-5}$  $2.465 \cdot 10^{-5}$ 0  $7.471 \cdot 10^{-7}$  $7.471 \cdot 10^{-7}$ 0 cHq3  $-4.732 \cdot 10^{-40}$  $1.223 \cdot 10^{-24}$ cHudIm $-4.732 \cdot 10^{-40}$ 0  $1.223 \cdot 10^{-24}$ 0  $-3.123 \cdot 10^{-24}$  $9.246 \cdot 10^{-25}$  $-3.123 \cdot 10^{-24}$  $9.246 \cdot 10^{-25}$ cHudRe 0 0  $4.673 \cdot 10^{-27}$  $4.673 \cdot 10^{-27}$  $2.228 \cdot 10^{-12}$  $2.228 \cdot 10^{-12}$ cdWIm0 0  $1.279 \cdot 10^{-12}$ cdWRe  $-4.719 \cdot 10^{-13}$  $-4.719 \cdot 10^{-13}$ 0  $1.279 \cdot 10^{-12}$ 0  $-1.15\cdot10^{-26}$  $-1.151 \cdot 10^{-26}$ -0.0009756 $1.14 \cdot 10^{-9}$  $1.14 \cdot 10^{-9}$  $-5.261 \cdot 10^{-7}$ ceWIm $-2.416 \cdot 10^{-10}$  $-2.416 \cdot 10^{-10}$  $-2.898 \cdot 10^{-7}$  $6.548 \cdot 10^{-10}$  $6.548 \cdot 10^{-10}$  $-5.651 \cdot 10^{-7}$ ceWRe  $7.424 \cdot 10^{-21}$  $7.424 \cdot 10^{-21}$  $-2.829 \cdot 10^{-7}$  $2.208 \cdot 10^{-17}$  $2.208 \cdot 10^{-17}$  $-5.434 \cdot 10^{-7}$ cledqIm  $-4.394 \cdot 10^{-17}$  $-4.394 \cdot 10^{-17}$  $-2.958 \cdot 10^{-7}$  $2.208 \cdot 10^{-17}$  $2.208 \cdot 10^{-17}$  $-5.887 \cdot 10^{-7}$ cledqRe  $-3.126 \cdot 10^{-7}$  $-1.599 \cdot 10^{-21}$  $-1.599 \cdot 10^{-21}$  $4.724 \cdot 10^{-18}$  $4.724 \cdot 10^{-18}$  $-5.715 \cdot 10^{-7}$ clequ1Im  $9.481 \cdot 10^{-18}$  $9.481 \cdot 10^{-18}$  $-2.848 \cdot 10^{-7}$  $4.724 \cdot 10^{-18}$  $4.724 \cdot 10^{-18}$  $-5.715 \cdot 10^{-7}$ clequ1Re  $-3.516 \cdot 10^{-21}$  $-3.516 \cdot 10^{-21}$  $-3.129 \cdot 10^{-7}$  $2.196 \cdot 10^{-17}$  $-5.92 \cdot 10^{-7}$  $2.196 \cdot 10^{-17}$ clequ3Im  $2.084 \cdot 10^{-17}$  $2.084 \cdot 10^{-17}$  $-2.879 \cdot 10^{-7}$  $-5.92 \cdot 10^{-7}$  $2.196 \cdot 10^{-17}$  $2.196 \cdot 10^{-17}$ clequ3Re  $2.465 \cdot 10^{-5}$  $7.471 \cdot 10^{-7}$  $7.471 \cdot 10^{-7}$ cll1  $2.465 \cdot 10^{-5}$ 0 0 0.003789 0.003789 0.017660.017660 clq3 0  $1.626 \cdot 10^{-28}$  $1.626 \cdot 10^{-28}$  $2.736 \cdot 10^{-13}$  $2.736 \cdot 10^{-13}$ cuWIm 0 0  $4.766 \cdot 10^{-13}$  $-2.022 \cdot 10^{-13}$  $-2.022 \cdot 10^{-13}$  $4.766 \cdot 10^{-13}$ cuWRe 0 0 0 0 0 0.00081540.0008154 0 sm

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

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
cH13	-0.003992	-0.003992	0	0.000242	0.000242	0	
cHq3	0.003992	0.003992	0	0.000242	0.000242	0	
cHudIm	$-2.739 \cdot 10^{-32}$	$-2.739 \cdot 10^{-32}$	0	$1.038 \cdot 10^{-16}$	$1.038 \cdot 10^{-16}$	0	
cHudRe	$-1.285 \cdot 10^{-15}$	$-1.285 \cdot 10^{-15}$	0	$3.543 \cdot 10^{-16}$	$3.543 \cdot 10^{-16}$	0	
cdWIm	$1.036 \cdot 10^{-26}$	$1.036 \cdot 10^{-26}$	0	$2.862 \cdot 10^{-9}$	$2.862 \cdot 10^{-9}$	0	
cdWRe	$-2.925 \cdot 10^{-9}$	$-2.925 \cdot 10^{-9}$	0	$3.601 \cdot 10^{-9}$	$3.601 \cdot 10^{-9}$	0	
cll1	0.001996	0.001996	0	$6.051 \cdot 10^{-5}$	$6.051 \cdot 10^{-5}$	0	
cqq11	0.1023	0.1023	$1.955 \cdot 10^{-7}$	1.43	1.43	0	
cqq3	0.6138	0.6138	0	5.721	5.721	0	
cqq31	-0.1023	-0.1023	$1.955 \cdot 10^{-7}$	1.43	1.43	0	
cquqd11Im	$-8.074 \cdot 10^{-19}$	$-8.074 \cdot 10^{-19}$	0	$5.286 \cdot 10^{-15}$	$5.286 \cdot 10^{-15}$	0	
cquqd11Re	$-4.797 \cdot 10^{-15}$	$-4.797 \cdot 10^{-15}$	0	$5.286 \cdot 10^{-15}$	$5.286 \cdot 10^{-15}$	0	
cquqd1Im	$-3.221 \cdot 10^{-18}$	$-3.221 \cdot 10^{-18}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0	
cquqd1Re	$-1.922 \cdot 10^{-14}$	$-1.922 \cdot 10^{-14}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0	
cquqd81Im	$-1.076 \cdot 10^{-18}$	$-1.076 \cdot 10^{-18}$	0	$1.175 \cdot 10^{-15}$	$1.175 \cdot 10^{-15}$	0	
cquqd81Re	$-3.513 \cdot 10^{-15}$	$-3.513 \cdot 10^{-15}$	0	$3.441 \cdot 10^{-16}$	$3.441 \cdot 10^{-16}$	0	
cquqd8Im	$-1.142 \cdot 10^{-31}$	$-1.142 \cdot 10^{-31}$	0	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0	
cquqd8Re	$-6.313 \cdot 10^{-31}$	$-6.313 \cdot 10^{-31}$	0	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0	
cuWIm	$-1.177 \cdot 10^{-23}$	$-1.177 \cdot 10^{-23}$	0	$6.699 \cdot 10^{-7}$	$6.699 \cdot 10^{-7}$	0	
cuWRe	$-2.34 \cdot 10^{-7}$	$-2.34 \cdot 10^{-7}$	0	$5.324 \cdot 10^{-7}$	$5.324 \cdot 10^{-7}$	0	
sm	0	0	0	0.003047	0.003047	0	

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

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHDD	-0.0378	-0.0378	0	0.002961	0.002961	0

				0.0400	0.0100-	
cHWB	-0.05828	-0.05828	0	0.01067	0.01067	0
cHbox	$-1.421 \cdot 10^{-20}$	$-1.421 \cdot 10^{-20}$	0	$2.701 \cdot 10^{-22}$	$2.701 \cdot 10^{-22}$	0
cHd	-0.003053	-0.003053	0	0.006642	0.006642	0
cH13	-0.006713	-0.006713	0	0.02269	0.02269	0
cHq1	-0.02707	-0.02707	0	0.001508	0.001508	0
cHq3	-0.01526	-0.01526	0	0.0223	0.0223	0
cHu	0.03702	0.03702	0	0.008662	0.008662	0
cHudIm	$4 \cdot 10^{-36}$	$4 \cdot 10^{-36}$	$-2.998 \cdot 10^{-5}$	$5.857 \cdot 10^{-26}$	$5.857 \cdot 10^{-26}$	0
cHudRe	$-1.263 \cdot 10^{-19}$	$-1.263 \cdot 10^{-19}$	0	$4.429 \cdot 10^{-26}$	$4.429 \cdot 10^{-26}$	0
cdBIm	$-6.522 \cdot 10^{-24}$	$-6.522 \cdot 10^{-24}$	$1.733 \cdot 10^{-6}$	$1.344 \cdot 10^{-10}$	$1.344 \cdot 10^{-10}$	0
cdBRe	$-3.062 \cdot 10^{-11}$	$-3.062 \cdot 10^{-11}$	0	$1.157 \cdot 10^{-10}$	$1.157 \cdot 10^{-10}$	0
cdGIm	$-1.15 \cdot 10^{-26}$	$-1.15 \cdot 10^{-26}$	0	$1.338 \cdot 10^{-9}$	$1.338 \cdot 10^{-9}$	0
cdGRe	$-1.585 \cdot 10^{-10}$	$-1.585 \cdot 10^{-10}$	0	$1.338 \cdot 10^{-9}$	$1.338 \cdot 10^{-9}$	0
cdHIm	$8.303 \cdot 10^{-35}$	$8.296 \cdot 10^{-35}$	0.0009123	$6.752 \cdot 10^{-23}$	$6.752 \cdot 10^{-23}$	0
cdHRe	$7.107 \cdot 10^{-21}$	$7.107 \cdot 10^{-21}$	0	$6.752 \cdot 10^{-23}$	$6.752 \cdot 10^{-23}$	0
cdWIm	$7.737 \cdot 10^{-25}$	$7.738 \cdot 10^{-25}$	$-7.976 \cdot 10^{-5}$	$1.987 \cdot 10^{-10}$	$1.987 \cdot 10^{-10}$	0
cdWRe	$1.272 \cdot 10^{-9}$	$1.272 \cdot 10^{-9}$	0	$1.728 \cdot 10^{-10}$	$1.728 \cdot 10^{-10}$	0
cll1	0.003356	0.003356	0	0.005672	0.005672	0
cqd1	0.2063	0.2063	0	1	1	0
cqd8	-8.328	-8.328	0	0.2222	0.2222	0
cqq1	4.335	4.335	0	3.392	3.392	0
cqq11	4.335	4.335	$-4.152 \cdot 10^{-7}$	3.392	3.392	$2.948 \cdot 10^{-8}$
cqq3	-56.66	-56.66	0	12.44	12.44	0
cqq31	-56.66	-56.66	$-3.53 \cdot 10^{-8}$	12.44	12.44	$-8.039 \cdot 10^{-8}$
cqu1	-0.2863	-0.2863	0	1	1	0
cqu8	-9.578	-9.578	0	0.2222	0.2222	0
cquqd11Im	$2.418 \cdot 10^{-33}$	$2.418 \cdot 10^{-33}$	$-2.192 \cdot 10^{-6}$	$5.817 \cdot 10^{-20}$	$5.817 \cdot 10^{-20}$	0
cquqd11Re	$5.523 \cdot 10^{-20}$	$5.523 \cdot 10^{-20}$	0	$5.817 \cdot 10^{-20}$	$5.817 \cdot 10^{-20}$	0
cquqd1Im	$2.182 \cdot 10^{-33}$	$2.183 \cdot 10^{-33}$	-0.000158	$5.864 \cdot 10^{-20}$	$5.864 \cdot 10^{-20}$	0

cquqd1Re	$5.523 \cdot 10^{-20}$	$5.523 \cdot 10^{-20}$	0	$5.817 \cdot 10^{-20}$	$5.817 \cdot 10^{-20}$	0
cquqd81Im	$4.372 \cdot 10^{-34}$	$4.372 \cdot 10^{-34}$	0	$1.18 \cdot 10^{-20}$	$1.18 \cdot 10^{-20}$	0
cquqd81Re	$1.3 \cdot 10^{-19}$	$1.3 \cdot 10^{-19}$	0	$1.173 \cdot 10^{-20}$	$1.173 \cdot 10^{-20}$	0
cquqd8Im	$4.372 \cdot 10^{-34}$	$4.372 \cdot 10^{-34}$	0	$1.18 \cdot 10^{-20}$	$1.18 \cdot 10^{-20}$	0
cquqd8Re	$1.3 \cdot 10^{-19}$	$1.3 \cdot 10^{-19}$	0	$1.173 \cdot 10^{-20}$	$1.173 \cdot 10^{-20}$	0
cuBIm	$-1.715 \cdot 10^{-23}$	$-1.715 \cdot 10^{-23}$	$-2.624 \cdot 10^{-6}$	$7.443 \cdot 10^{-12}$	$7.443 \cdot 10^{-12}$	0
cuBRe	$-1.334 \cdot 10^{-12}$	$-1.334 \cdot 10^{-12}$	0	$7.443 \cdot 10^{-12}$	$7.443 \cdot 10^{-12}$	0
cuGIm	$-4.394 \cdot 10^{-26}$	$-4.394 \cdot 10^{-26}$	0	$3.329 \cdot 10^{-10}$	$3.329 \cdot 10^{-10}$	0
cuGRe	$-3.395 \cdot 10^{-11}$	$-3.395 \cdot 10^{-11}$	0	$3.329 \cdot 10^{-10}$	$3.329 \cdot 10^{-10}$	0
cuHIm	$-1.724 \cdot 10^{-33}$	$-1.724 \cdot 10^{-33}$	$4.699 \cdot 10^{-5}$	$6.752 \cdot 10^{-23}$	$6.752 \cdot 10^{-23}$	0
cuHRe	$7.107 \cdot 10^{-21}$	$7.107 \cdot 10^{-21}$	0	$6.752 \cdot 10^{-23}$	$6.752 \cdot 10^{-23}$	0
cuWIm	$-3.912 \cdot 10^{-24}$	$-3.911 \cdot 10^{-24}$	0.0002756	$3.58 \cdot 10^{-11}$	$3.58 \cdot 10^{-11}$	0
cuWRe	$3.218 \cdot 10^{-10}$	$3.218 \cdot 10^{-10}$	0	$4.097 \cdot 10^{-11}$	$4.097 \cdot 10^{-11}$	0
cud1	0.5705	0.5705	0	0.8481	0.8481	0
cud8	-8.306	-8.306	0	0.1927	0.1927	0
sm	0	0	0	383.8	383.8	0

## 1.83 $u\bar{u} \rightarrow \nu_e \bar{\nu}_e$

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$2.178 \cdot 10^{-5}$	$2.178 \cdot 10^{-5}$	0	$1.487 \cdot 10^{-6}$	$1.487 \cdot 10^{-6}$	0	
cHWB	0.0001167	0.0001167	0	$3.978 \cdot 10^{-6}$	$3.978 \cdot 10^{-6}$	0	
cHl1	-0.0001743	-0.0001743	0	$5.284 \cdot 10^{-6}$	$5.284 \cdot 10^{-6}$	0	
cH13	-0.0001621	-0.0001621	0	$4.913 \cdot 10^{-6}$	$4.913 \cdot 10^{-6}$	0	
cHq1	-0.0002368	-0.0002368	0	$1.021 \cdot 10^{-5}$	$1.021 \cdot 10^{-5}$	0	
сНqЗ	0.0002175	0.0002175	0	$9.38 \cdot 10^{-6}$	$9.38 \cdot 10^{-6}$	0	
cHu	$2.654 \cdot 10^{-5}$	$2.654 \cdot 10^{-5}$	0	$2.707 \cdot 10^{-6}$	$2.707 \cdot 10^{-6}$	0	
cll1	0.0001621	0.0001621	0	$4.913 \cdot 10^{-6}$	$4.913 \cdot 10^{-6}$	0	

clq1	0.02824	0.02824	0	0.1453	0.1453	0
clq3	0.02594	0.02594	0	0.1334	0.1334	0
clu	-0.003165	-0.003165	0	0.0385	0.0385	0
cuBIm	$3.923 \cdot 10^{-28}$	$3.923 \cdot 10^{-28}$	0	$8.676 \cdot 10^{-14}$	$8.676 \cdot 10^{-14}$	0
cuBRe	$1.101 \cdot 10^{-13}$	$1.101 \cdot 10^{-13}$	0	$8.676 \cdot 10^{-14}$	$8.676 \cdot 10^{-14}$	0
cuWIm	$-6.959 \cdot 10^{-29}$	$-6.959 \cdot 10^{-29}$	0	$3.134 \cdot 10^{-13}$	$3.134 \cdot 10^{-13}$	0
cuWRe	$-2.056 \cdot 10^{-13}$	$-2.056 \cdot 10^{-13}$	0	$3.026 \cdot 10^{-13}$	$3.026 \cdot 10^{-13}$	0
sm	0	0	0	0.001438	0.001438	0

#### 1.84 $u\bar{u} \rightarrow u\bar{u}$

		interfere	nce		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	-4.848	-4.848	0	0.3061	0.3061	0		
cHWB	-11.8	-11.8	0	1.548	1.548	0		
cHbox	$-9.191 \cdot 10^{-10}$	$-9.191 \cdot 10^{-10}$	0	$1.227 \cdot 10^{-22}$	$1.227 \cdot 10^{-22}$	0		
cH13	0.05843	0.05843	0	0.0008762	0.0008762	0		
cHq1	-3.675	-3.675	0	0.294	0.294	0		
cHq3	-0.0345	-0.0345	0	0.0006047	0.0006047	0		
cHu	-1.071	-1.071	0	0.1883	0.1883	0		
cll1	-0.02921	-0.02921	0	0.0002191	0.0002191	0		
cqq1	-3.013	-3.013	0	4.847	4.847	0		
cqq11	-3.013	-3.013	$6.638 \cdot 10^{-8}$	4.847	4.847	$1.444 \cdot 10^{-7}$		
cqq3	-3.013	-3.013	0	4.847	4.847	0		
cqq31	-3.013	-3.013	$-3.319 \cdot 10^{-8}$	4.847	4.847	$-6.189 \cdot 10^{-8}$		
cqu1	-7.091	-7.091	0	2	2	0		
cqu8	-95.76	-95.76	0	0.4445	0.4445	0		
cuBIm	$-1.27 \cdot 10^{-25}$	$-1.271 \cdot 10^{-25}$	-0.0003533	$3.055 \cdot 10^{-10}$	$3.055 \cdot 10^{-10}$	0		
cuBRe	$1.595 \cdot 10^{-9}$	$1.595 \cdot 10^{-9}$	0	$3.055 \cdot 10^{-10}$	$3.055 \cdot 10^{-10}$	0		

cuGIm	$-1.423 \cdot 10^{-25}$	$-1.424 \cdot 10^{-25}$	$-1.475 \cdot 10^{-5}$	$3.493 \cdot 10^{-9}$	$3.493 \cdot 10^{-9}$	0
cuGRe	$-1.765 \cdot 10^{-9}$	$-1.765 \cdot 10^{-9}$	0	$3.493 \cdot 10^{-9}$	$3.493 \cdot 10^{-9}$	0
$\mathtt{cuHIm}$	$-1.392 \cdot 10^{-26}$	$-1.392 \cdot 10^{-26}$	0	$6.825 \cdot 10^{-23}$	$6.825 \cdot 10^{-23}$	0
cuHRe	$9.191 \cdot 10^{-10}$	$9.191 \cdot 10^{-10}$	0	$1.227 \cdot 10^{-22}$	$1.227 \cdot 10^{-22}$	0
cuWIm	$-3.989 \cdot 10^{-26}$	$-3.989 \cdot 10^{-26}$	$-4.395 \cdot 10^{-5}$	$2.119 \cdot 10^{-11}$	$2.119 \cdot 10^{-11}$	0
cuWRe	$1.832 \cdot 10^{-9}$	$1.832 \cdot 10^{-9}$	0	$3.195 \cdot 10^{-10}$	$3.195 \cdot 10^{-10}$	0
cuu	-202.2	-202.2	0	10.38	10.38	0
cuu1	-202.2	-202.2	0	10.38	10.38	$-9.638 \cdot 10^{-8}$
sm	0	0	0	$1.025 \cdot 10^4$	$1.025 \cdot 10^4$	0

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

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	-0.0444	-0.0444	0	0.04441	0.04441	0
cHBtil	$3.08 \cdot 10^{-16}$	$3.08 \cdot 10^{-16}$	0	0.04441	0.04441	0
cHDD	0.1169	0.1169	0	0.001775	0.001775	0
cHW	-0.4044	-0.4044	0	1.435	1.435	0
cHWB	0.2299	0.2299	0	0.1634	0.1634	0
cHWBtil	$-6.229 \cdot 10^{-16}$	$-6.302 \cdot 10^{-16}$	-0.01175	0.1619	0.1619	0
cHWtil	$-3.473 \cdot 10^{-15}$	$-3.473 \cdot 10^{-15}$	0	1.434	1.434	0
cHbox	7.378	7.378	0	0.4473	0.4473	0
cH13	-7.863	-7.863	0	0.4767	0.4767	0
cW	-0.02809	-0.02809	0	16.08	16.08	0
cWtil	$-2.77 \cdot 10^{-13}$	$-2.765 \cdot 10^{-13}$	0.001804	16.08	16.08	0
cll1	3.932	3.932	0	0.1192	0.1192	0
sm	0	0	0	32.35	32.35	0

#### 1.86 $zz \rightarrow zz$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНВ	0.00174	0.00174	0	0.06958	0.06958	0		
cHBtil	$2.387 \cdot 10^{-19}$	$2.387 \cdot 10^{-19}$	0	0.06946	0.06946	0		
cHDD	0.004931	0.004931	0	$7.473 \cdot 10^{-5}$	$7.473 \cdot 10^{-5}$	0		
cHW	0.006078	0.006078	0	0.8064	0.8064	0		
cHWB	0.003248	0.003248	0	0.2426	0.2426	0		
cHWBtil	$4.355 \cdot 10^{-19}$	$4.355 \cdot 10^{-19}$	0	0.2422	0.2422	0		
cHWtil	$8.109 \cdot 10^{-19}$	$8.109 \cdot 10^{-19}$	0	0.8447	0.8447	0		
cHbox	0.01972	0.01972	0	0.001196	0.001196	0		
cH13	-0.01979	-0.01979	0	0.0012	0.0012	0		
cll1	0.009894	0.009894	0	0.0002999	0.0002999	0		
sm	0	0	0	0.08134	0.08134	0		

# 2 By parameter point

### 2.1 cG

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$gg \to gg$	$-9.951 \cdot 10^{-10}$	$-9.951 \cdot 10^{-10}$	$-5.286 \cdot 10^{-6}$	90.12	90.12	0	
$gg \to ggg$	0.01358	0.01358	0	0.02785	0.02785	0	
$gg \to t\bar{t}$	-0.04108	-0.04108	0	2.138	2.138	0	
$gg \to u\bar{u}$	$-4.868 \cdot 10^{-13}$	$-4.868 \cdot 10^{-13}$	0	2.099	2.099	0	

### 2.2 cGtil

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$gg \to gg$	$-2.873 \cdot 10^{-15}$	$-2.624 \cdot 10^{-15}$	0.08663	90.12	90.12	0
$gg \to ggg$	0.01171	0.01171	0	0.02785	0.02785	0
$gg \to t\bar{t}$	$8.015 \cdot 10^{-17}$	$8.015 \cdot 10^{-17}$	0	2.138	2.138	0
$gg \to u\bar{u}$	$4.532 \cdot 10^{-28}$	$4.532 \cdot 10^{-28}$	0	2.099	2.099	0

## 2.3 cH

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to HH$	-1.343	-1.343	0	2.134	2.134	0
$HH \to HHH$	$8.742 \cdot 10^{-6}$	$8.742 \cdot 10^{-6}$	0	$4.461 \cdot 10^{-5}$	$4.461 \cdot 10^{-5}$	0
$HH  o H  au^+  au^-$	$-2.065 \cdot 10^{-8}$	$-2.065 \cdot 10^{-8}$	0	$3.798 \cdot 10^{-8}$	$3.798 \cdot 10^{-8}$	0
$HH  o Hbar{b}$	$-5.616 \cdot 10^{-8}$	$-5.616 \cdot 10^{-8}$	0	$9.272 \cdot 10^{-8}$	$9.272 \cdot 10^{-8}$	0
$HH \to H s \bar{s}$	$-2.276 \cdot 10^{-11}$	$-2.276 \cdot 10^{-11}$	0	$3.678 \cdot 10^{-11}$	$3.678 \cdot 10^{-11}$	0
$HH  o Htar{t}$	$1.627 \cdot 10^{-6}$	$1.627 \cdot 10^{-6}$	0	$1.467 \cdot 10^{-5}$	$1.467 \cdot 10^{-5}$	0
$HH \to Hu\bar{u}$	$-2.525 \cdot 10^{-15}$	$-2.525 \cdot 10^{-15}$	0	$4.766 \cdot 10^{-15}$	$4.766 \cdot 10^{-15}$	0
$HH \rightarrow Hzz$	$1.932 \cdot 10^{-5}$	$1.932 \cdot 10^{-5}$	0	$1.418 \cdot 10^{-5}$	$1.418 \cdot 10^{-5}$	0
$HH  o W^+W^-$	0.2689	0.2689	0	0.1331	0.1331	0
$HH \to W^+W^-\gamma$	$8.509 \cdot 10^{-7}$	$8.509 \cdot 10^{-7}$	0	$2.79 \cdot 10^{-7}$	$2.79 \cdot 10^{-7}$	0
$HH  o W^+ \bar t b$	$7.629 \cdot 10^{-6}$	$7.629 \cdot 10^{-6}$	0	$7.46 \cdot 10^{-7}$	$7.46 \cdot 10^{-7}$	0
$HH \to W^+ e^- \bar{\nu}_e$	$-1.823 \cdot 10^{-8}$	$-1.823 \cdot 10^{-8}$	0	$1.988 \cdot 10^{-8}$	$1.988 \cdot 10^{-8}$	0
$HH \to W^- u \bar{d}$	$2.339 \cdot 10^{-9}$	$2.339 \cdot 10^{-9}$	0	$1.694 \cdot 10^{-9}$	$1.694 \cdot 10^{-9}$	0
$HH  o z \bar{b} b$	$5.115 \cdot 10^{-8}$	$5.115 \cdot 10^{-8}$	0	$1.879 \cdot 10^{-9}$	$1.879 \cdot 10^{-9}$	0
$HH \to z \nu_e \bar{\nu}_e$	$3.589 \cdot 10^{-9}$	$3.589 \cdot 10^{-9}$	0	$8.427 \cdot 10^{-10}$	$8.427 \cdot 10^{-10}$	0
$HH \to zc\bar{c}$	$8.366 \cdot 10^{-10}$	$8.366 \cdot 10^{-10}$	0	$4.198 \cdot 10^{-11}$	$4.198 \cdot 10^{-11}$	0
$HH \to z d\bar{d}$	$6.537 \cdot 10^{-9}$	$6.537 \cdot 10^{-9}$	0	$7.24 \cdot 10^{-10}$	$7.24 \cdot 10^{-10}$	0
$HH \to ze^+e^-$	$2.501 \cdot 10^{-8}$	$2.501 \cdot 10^{-8}$	0	$6.911 \cdot 10^{-9}$	$6.911 \cdot 10^{-9}$	0

$HH \to z t \bar{t}$	$-3.055 \cdot 10^{-7}$	$-3.055 \cdot 10^{-7}$	0	$2.499 \cdot 10^{-7}$	$2.499 \cdot 10^{-7}$	0
$HH \rightarrow zz$	1.11	1.11	0	0.06606	0.06606	0
$W^+W^- \to Hb\bar{b}$	$-9.479 \cdot 10^{-11}$	$-9.479 \cdot 10^{-11}$	0	$6.823 \cdot 10^{-11}$	$6.823 \cdot 10^{-11}$	0
$W^+W^- \to H c \bar c$	$5.886 \cdot 10^{-10}$	$5.886 \cdot 10^{-10}$	0	$5.444 \cdot 10^{-10}$	$5.444 \cdot 10^{-10}$	0
$W^+W^- \to H d\bar{d}$	$8.751 \cdot 10^{-15}$	$8.751 \cdot 10^{-15}$	0	$1.259 \cdot 10^{-15}$	$1.259 \cdot 10^{-15}$	0
$W^+W^-  o H t ar t$	$7.486 \cdot 10^{-7}$	$7.486 \cdot 10^{-7}$	0	$7.55 \cdot 10^{-8}$	$7.55 \cdot 10^{-8}$	0

## 2.4 cHB

		interfere		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \rightarrow Hzz$	$1.416 \cdot 10^{-6}$	$1.416 \cdot 10^{-6}$	0	$2.504 \cdot 10^{-7}$	$2.504 \cdot 10^{-7}$	0
$HH  o W^+W^-\gamma$	$-5.079 \cdot 10^{-7}$	$-5.079 \cdot 10^{-7}$	0	$2.428 \cdot 10^{-6}$	$2.428 \cdot 10^{-6}$	0
HH  o z ar b b	$3.496 \cdot 10^{-8}$	$3.496 \cdot 10^{-8}$	0	$3.089 \cdot 10^{-8}$	$3.089 \cdot 10^{-8}$	0
$HH \to z \nu_e \bar{\nu}_e$	$1.58 \cdot 10^{-7}$	$1.58 \cdot 10^{-7}$	0	$1.255 \cdot 10^{-8}$	$1.255 \cdot 10^{-8}$	0
$HH \to z c \bar{c}$	$2.5 \cdot 10^{-8}$	$2.5 \cdot 10^{-8}$	0	$1.035 \cdot 10^{-7}$	$1.035 \cdot 10^{-7}$	0
$HH \to z d\bar{d}$	$9.906 \cdot 10^{-7}$	$9.906 \cdot 10^{-7}$	0	$2.181 \cdot 10^{-6}$	$2.181 \cdot 10^{-6}$	0
$HH \rightarrow ze^+e^-$	$3.135 \cdot 10^{-8}$	$3.135 \cdot 10^{-8}$	0	$9.655 \cdot 10^{-8}$	$9.655 \cdot 10^{-8}$	0
$HH  o zt\bar{t}$	$-1.247 \cdot 10^{-5}$	$-1.247 \cdot 10^{-5}$	0	$1.576 \cdot 10^{-6}$	$1.576 \cdot 10^{-6}$	0
$HH \rightarrow zz$	0.01409	0.01409	0	0.2007	0.2007	0
$HW^+ \to \gamma t \bar{b}$	$-2.499 \cdot 10^{-7}$	$-2.499 \cdot 10^{-7}$	0	$3.054 \cdot 10^{-8}$	$3.054 \cdot 10^{-8}$	0
$HW^+  o \gamma u \bar{d}$	$-4.701 \cdot 10^{-8}$	$-4.701 \cdot 10^{-8}$	0	$3.907 \cdot 10^{-8}$	$3.907 \cdot 10^{-8}$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-4.968 \cdot 10^{-10}$	$-4.968 \cdot 10^{-10}$	0	$1.714 \cdot 10^{-8}$	$1.714 \cdot 10^{-8}$	0
$H\gamma \to b\bar{b}$	$-3.003 \cdot 10^{-7}$	$-3.003 \cdot 10^{-7}$	0	0.005169	0.005169	0
$H\gamma \to c\bar{c}$	$-1.084 \cdot 10^{-5}$	$-1.084 \cdot 10^{-5}$	0	0.02822	0.02822	0
$H\gamma \to d\bar{d}$	$-1.448 \cdot 10^{-10}$	$-1.448 \cdot 10^{-10}$	0	0.009537	0.009537	0
$H\gamma \to e^+e^-$	$-4.326 \cdot 10^{-13}$	$-4.326 \cdot 10^{-13}$	0	0.02049	0.02049	0
$H\gamma \to t\bar{t}$	-0.01031	-0.01031	0	0.0175	0.0175	0
$Hz \to \mu^+\mu^-$	0.0002634	0.0002634	0	0.003112	0.003112	0

$Hz  o  u_{ au} \bar{ u}_{ au}$	0.0007435	0.0007435	0	0.000604	0.000604	0
$Hz  o b\bar{b}$	0.0008717	0.0008717	0	0.001025	0.001025	0
$Hz \to s\bar{s}$	0.0008024	0.0008024	0	0.0009337	0.0009337	0
$Hz \to t\bar{t}$	-0.01222	-0.01222	0	0.004162	0.004162	0
$Hz \to u\bar{u}$	0.0005739	0.0005739	0	0.005244	0.005244	0
$W^+W^-  o Hbar b$	$-2.973 \cdot 10^{-8}$	$-2.973 \cdot 10^{-8}$	0	$2.037 \cdot 10^{-10}$	$2.037 \cdot 10^{-10}$	0
$W^+W^- \to H c \bar c$	$4.469 \cdot 10^{-9}$	$4.469 \cdot 10^{-9}$	0	$5.401 \cdot 10^{-10}$	$5.401 \cdot 10^{-10}$	0
$W^+W^-  o H d \bar d$	$-4.655 \cdot 10^{-9}$	$-4.655 \cdot 10^{-9}$	0	$1.031 \cdot 10^{-10}$	$1.031 \cdot 10^{-10}$	0
$W^+W^-  o H t \bar t$	$3.096 \cdot 10^{-8}$	$3.096 \cdot 10^{-8}$	0	$5.895 \cdot 10^{-10}$	$5.895 \cdot 10^{-10}$	0
$W^+W^-  o \gamma\gamma$	-0.03596	-0.03596	0	0.2771	0.2771	0
$W^+W^- \to \gamma\gamma\gamma$	$-2.003 \cdot 10^{-8}$	$-2.003 \cdot 10^{-8}$	0	$5.205 \cdot 10^{-7}$	$5.205 \cdot 10^{-7}$	0
$\gamma W^+ \to z W^+$	-0.0003833	-0.0003833	0	0.0001955	0.0001955	0
$b\bar{b} \to \gamma \gamma$	$-3.888 \cdot 10^{-7}$	$-3.888 \cdot 10^{-7}$	0	$7.26 \cdot 10^{-6}$	$7.26 \cdot 10^{-6}$	0
$zz \to W^+W^-$	-0.0444	-0.0444	0	0.04441	0.04441	0
$zz \to zz$	0.00174	0.00174	0	0.06958	0.06958	0

## 2.5 cHBtil

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \rightarrow Hzz$	$1.639 \cdot 10^{-7}$	$1.639 \cdot 10^{-7}$	0	$1.473 \cdot 10^{-7}$	$1.473 \cdot 10^{-7}$	0		
$HH  o W^+W^-\gamma$	$5.454 \cdot 10^{-7}$	$5.454 \cdot 10^{-7}$	0	$2.428 \cdot 10^{-6}$	$2.428 \cdot 10^{-6}$	0		
$HH \to z\bar{b}b$	$-5.543 \cdot 10^{-9}$	$-5.543 \cdot 10^{-9}$	0	$1.503 \cdot 10^{-8}$	$1.503 \cdot 10^{-8}$	0		
$HH \to z \nu_e \bar{\nu}_e$	$-1.894 \cdot 10^{-10}$	$-1.894 \cdot 10^{-10}$	0	$1.288 \cdot 10^{-9}$	$1.288 \cdot 10^{-9}$	0		
$HH \to zc\bar{c}$	$1.519 \cdot 10^{-8}$	$1.519 \cdot 10^{-8}$	0	$3.638 \cdot 10^{-8}$	$3.638 \cdot 10^{-8}$	0		
$HH \to z d\bar{d}$	$1.376 \cdot 10^{-6}$	$1.376 \cdot 10^{-6}$	0	$2.112 \cdot 10^{-6}$	$2.112 \cdot 10^{-6}$	0		
$HH \rightarrow ze^+e^-$	$6.131 \cdot 10^{-9}$	$6.131 \cdot 10^{-9}$	0	$3.581 \cdot 10^{-8}$	$3.581 \cdot 10^{-8}$	0		
$HH  o zt \bar t$	$1.542 \cdot 10^{-7}$	$1.542 \cdot 10^{-7}$	0	$1.202 \cdot 10^{-6}$	$1.202 \cdot 10^{-6}$	0		
$HH \rightarrow zz$	$2.486 \cdot 10^{-17}$	$2.486 \cdot 10^{-17}$	0	0.2	0.2	0		

$HW^+ \to \gamma t \bar{b}$	$-1.729 \cdot 10^{-7}$	$-1.729 \cdot 10^{-7}$	0	$3.054 \cdot 10^{-8}$	$3.054 \cdot 10^{-8}$	0
$HW^+ \rightarrow \gamma u \bar{d}$	$1.568 \cdot 10^{-9}$	$1.568 \cdot 10^{-9}$	0	$3.907 \cdot 10^{-8}$	$3.907 \cdot 10^{-8}$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-1.876 \cdot 10^{-9}$	$-1.876 \cdot 10^{-9}$	0	$1.714 \cdot 10^{-8}$	$1.714 \cdot 10^{-8}$	0
$H\gamma  o bar{b}$	$-8.344 \cdot 10^{-10}$	$-8.344 \cdot 10^{-10}$	0	0.005169	0.005169	0
$H\gamma \rightarrow c\bar{c}$	$-0.544 \cdot 10$ $-1.769 \cdot 10^{-9}$	$-3.544 \cdot 10$ $-1.769 \cdot 10^{-9}$	0	0.02822	0.003103 $0.02822$	0
$H\gamma \to cc$ $H\gamma \to d\bar{d}$	$1.042 \cdot 10^{-13}$	$1.042 \cdot 10^{-13}$	0	0.02822 $0.009537$	0.02822 $0.009537$	0
$H\gamma \to aa$ $H\gamma \to e^+e^-$	$-5.144 \cdot 10^{-17}$	$-5.144 \cdot 10^{-17}$	0	0.02049	0.02049	0
•	$-3.144 \cdot 10$ $4.024 \cdot 10^{-6}$	$-3.144 \cdot 10$ $4.024 \cdot 10^{-6}$	0	0.02049 $0.0175$	0.02049 $0.0175$	0
$H\gamma \rightarrow t\bar{t}$						
$Hz \rightarrow \mu^+\mu^-$	$1.751 \cdot 10^{-7}$	$1.751 \cdot 10^{-7}$	0	0.003112	0.003112	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0	0	0	0.000604	0.000604	0
$Hz \to bb$	$1.565 \cdot 10^{-7}$	$1.565 \cdot 10^{-7}$	0	0.001025	0.001025	0
$Hz \to s\bar{s}$	$3.676 \cdot 10^{-8}$	$3.676 \cdot 10^{-8}$	0	0.0009337	0.0009337	0
$Hz \to t\bar{t}$	$-4.212 \cdot 10^{-7}$	$-4.212 \cdot 10^{-7}$	0	0.004162	0.004162	0
$Hz \to u\bar{u}$	$-8.029 \cdot 10^{-7}$	$-8.029 \cdot 10^{-7}$	0	0.005244	0.005244	0
$W^+W^- \to Hb\bar{b}$	$-7.77 \cdot 10^{-10}$	$-7.77 \cdot 10^{-10}$	0	$1.715 \cdot 10^{-11}$	$1.715 \cdot 10^{-11}$	0
$W^+W^-  o Hc\bar{c}$	$-2.989 \cdot 10^{-11}$	$-2.989 \cdot 10^{-11}$	0	$9.755 \cdot 10^{-14}$	$9.755 \cdot 10^{-14}$	0
$W^+W^-  o H d \bar d$	$2.256 \cdot 10^{-10}$	$2.256 \cdot 10^{-10}$	0	$8.01 \cdot 10^{-13}$	$8.01 \cdot 10^{-13}$	0
$W^+W^-  o H t \bar t$	$6.181 \cdot 10^{-9}$	$6.181 \cdot 10^{-9}$	0	$1.017 \cdot 10^{-10}$	$1.017 \cdot 10^{-10}$	0
$W^+W^-  o \gamma\gamma$	$-3.897 \cdot 10^{-17}$	$-3.897 \cdot 10^{-17}$	0	0.2771	0.2771	0
$W^+W^- \to \gamma\gamma\gamma$	$-6.36 \cdot 10^{-10}$	$-6.36 \cdot 10^{-10}$	0	$5.205 \cdot 10^{-7}$	$5.205 \cdot 10^{-7}$	0
$\gamma W^+ \to z W^+$	$-1.63 \cdot 10^{-17}$	$-1.476 \cdot 10^{-17}$	0.09421	0.0001955	0.0001955	0
$b\bar{b} \to \gamma \gamma$	$-3.071 \cdot 10^{-24}$	$-3.071 \cdot 10^{-24}$	0	$7.26 \cdot 10^{-6}$	$7.26 \cdot 10^{-6}$	0
$zz \to W^+W^-$	$3.08 \cdot 10^{-16}$	$3.08 \cdot 10^{-16}$	0	0.04441	0.04441	0
$zz \to zz$	$2.387 \cdot 10^{-19}$	$2.387 \cdot 10^{-19}$	0	0.06946	0.06946	0

# 2.6 cHDD

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

$HH \rightarrow HH$	-0.1002	-0.1002	0	0.01403	0.01403	0
$HH \rightarrow HHH$	$1.424 \cdot 10^{-7}$	$1.424 \cdot 10^{-7}$	0	$5.68 \cdot 10^{-7}$	$5.68 \cdot 10^{-7}$	0
$HH \to H\tau^+\tau^-$	$-9.413 \cdot 10^{-11}$	$-9.413 \cdot 10^{-11}$	0	$2.722 \cdot 10^{-11}$	$2.722 \cdot 10^{-11}$	0
$HH  o Hb\bar{b}$	$-5.143 \cdot 10^{-9}$	$-5.143 \cdot 10^{-9}$	0	$9.067 \cdot 10^{-10}$	$9.067 \cdot 10^{-10}$	0
$HH \to Hs\bar{s}$	$-1.898 \cdot 10^{-10}$	$-1.898 \cdot 10^{-10}$	0	$2.641 \cdot 10^{-11}$	$2.641 \cdot 10^{-11}$	0
$HH \to Ht\bar{t}$	$1.32 \cdot 10^{-5}$	$1.32 \cdot 10^{-5}$	0	$1.517 \cdot 10^{-6}$	$1.517 \cdot 10^{-6}$	0
$HH \to Hu\bar{u}$	$-7.047 \cdot 10^{-16}$	$-7.047 \cdot 10^{-16}$	0	$1.556 \cdot 10^{-16}$	$1.556 \cdot 10^{-16}$	0
$HH \rightarrow Hzz$	$1.782 \cdot 10^{-6}$	$1.782 \cdot 10^{-6}$	0	$8.414 \cdot 10^{-7}$	$8.414 \cdot 10^{-7}$	0
$HH \to W^+W^-$	3.624	3.624	0	0.1152	0.1152	0
$HH  o W^+W^-\gamma$	$-2.456 \cdot 10^{-7}$	$-2.456 \cdot 10^{-7}$	0	$1.004 \cdot 10^{-7}$	$1.004 \cdot 10^{-7}$	0
$HH \to W^+ \bar{t} b$	$3.728 \cdot 10^{-6}$	$3.728 \cdot 10^{-6}$	0	$1.277 \cdot 10^{-6}$	$1.277 \cdot 10^{-6}$	0
$HH  o W^+ e^- \bar{\nu}_e$	$-5.479 \cdot 10^{-9}$	$-5.479 \cdot 10^{-9}$	0	$3.748 \cdot 10^{-10}$	$3.748 \cdot 10^{-10}$	0
$HH \to W^- u \bar{d}$	$-4.654 \cdot 10^{-9}$	$-4.654 \cdot 10^{-9}$	0	$2.18 \cdot 10^{-9}$	$2.18 \cdot 10^{-9}$	0
$HH  o z \bar{b} b$	$1.88 \cdot 10^{-8}$	$1.88 \cdot 10^{-8}$	0	$2.545 \cdot 10^{-9}$	$2.545 \cdot 10^{-9}$	0
$HH \to z \nu_e \bar{\nu}_e$	$2.438 \cdot 10^{-8}$	$2.438 \cdot 10^{-8}$	0	$1.646 \cdot 10^{-10}$	$1.646 \cdot 10^{-10}$	0
$HH \to zc\bar{c}$	$1.864 \cdot 10^{-8}$	$1.864 \cdot 10^{-8}$	0	$2.211 \cdot 10^{-9}$	$2.211 \cdot 10^{-9}$	0
$HH \to z d\bar{d}$	$-3.029 \cdot 10^{-6}$	$-3.029 \cdot 10^{-6}$	0	$2.127 \cdot 10^{-6}$	$2.127 \cdot 10^{-6}$	0
$HH \rightarrow ze^+e^-$	$2.73 \cdot 10^{-9}$	$2.73 \cdot 10^{-9}$	0	$1.388 \cdot 10^{-9}$	$1.388 \cdot 10^{-9}$	0
$HH \to zt\bar{t}$	$-3.978 \cdot 10^{-5}$	$-3.978 \cdot 10^{-5}$	0	$8.867 \cdot 10^{-6}$	$8.867 \cdot 10^{-6}$	0
$HH \rightarrow zz$	-0.6035	-0.6035	0	0.4349	0.4349	0
$HW^+  o \gamma t \bar{b}$	$-1.025 \cdot 10^{-5}$	$-1.025 \cdot 10^{-5}$	0	$3.486 \cdot 10^{-7}$	$3.486 \cdot 10^{-7}$	0
$HW^+ \to \gamma u \bar{d}$	$-6.788 \cdot 10^{-9}$	$-6.788 \cdot 10^{-9}$	0	$2.308 \cdot 10^{-10}$	$2.308 \cdot 10^{-10}$	0
$HW^+  o u \bar d$	-0.0003965	-0.0003965	0	$3.005 \cdot 10^{-6}$	$3.005 \cdot 10^{-6}$	0
$HW^-  o \bar{t}b$	-0.02405	-0.02405	0	0.0001823	0.0001823	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-9.133 \cdot 10^{-10}$	$-9.133 \cdot 10^{-10}$	0	$3.105 \cdot 10^{-11}$	$3.105 \cdot 10^{-11}$	0
$HW^- \to \mu^- \bar{\nu}_{\mu}$	-0.0002012	-0.0002012	0	$1.525 \cdot 10^{-6}$	$1.525 \cdot 10^{-6}$	0
$H\gamma  o b ar{b}$	$-1.062 \cdot 10^{-5}$	$-1.062 \cdot 10^{-5}$	0	$3.61 \cdot 10^{-7}$	$3.61 \cdot 10^{-7}$	0
$H\gamma \to c\bar{c}$	$-1.342 \cdot 10^{-5}$	$-1.342 \cdot 10^{-5}$	0	$4.563 \cdot 10^{-7}$	$4.563 \cdot 10^{-7}$	0
$H\gamma \to d\bar{d}$	$-3.431 \cdot 10^{-10}$	$-3.431 \cdot 10^{-10}$	0	$1.167 \cdot 10^{-11}$	$1.167 \cdot 10^{-11}$	0

$H\gamma \to e^+e^-$	$-7.689 \cdot 10^{-13}$	$-7.689 \cdot 10^{-13}$	0	$2.615 \cdot 10^{-14}$	$2.615 \cdot 10^{-14}$	0
$H\gamma \to t\bar{t}$	-0.05445	-0.05445	0	0.001852	0.001852	0
$Hz  o \mu^+\mu^-$	$5.926 \cdot 10^{-5}$	$5.926 \cdot 10^{-5}$	0	$2.572 \cdot 10^{-5}$	$2.572 \cdot 10^{-5}$	0
$Hz  ightarrow \overline{ u_{ au}} \overline{ u_{ au}}$	$3.071 \cdot 10^{-18}$	$3.071 \cdot 10^{-18}$	0	$4.287 \cdot 10^{-34}$	$4.287 \cdot 10^{-34}$	0
$Hz  o b \dot{\bar{b}}$	0.0004001	0.0004001	0	$1.757 \cdot 10^{-5}$	$1.757 \cdot 10^{-5}$	0
$Hz  o s\bar{s}$	0.000434	0.000434	0	$9.702 \cdot 10^{-6}$	$9.702 \cdot 10^{-6}$	0
$Hz \to t\bar{t}$	0.01432	0.01432	0	0.01763	0.01763	0
$Hz \to u\bar{u}$	0.0001841	0.0001841	0	$1.425 \cdot 10^{-5}$	$1.425 \cdot 10^{-5}$	0
$W^+W^- \to Hb\bar{b}$	$-3.142 \cdot 10^{-7}$	$-3.142 \cdot 10^{-7}$	0	$4.299 \cdot 10^{-9}$	$4.299 \cdot 10^{-9}$	0
$W^+W^- \to H c \bar c$	$-2.325 \cdot 10^{-8}$	$-2.325 \cdot 10^{-8}$	0	$5.45 \cdot 10^{-10}$	$5.45 \cdot 10^{-10}$	0
$W^+W^- \to H d\bar{d}$	$-2.128 \cdot 10^{-8}$	$-2.128 \cdot 10^{-8}$	0	$5.002 \cdot 10^{-10}$	$5.002 \cdot 10^{-10}$	0
$W^+W^-  o H t \bar t$	$-1.545 \cdot 10^{-5}$	$-1.545 \cdot 10^{-5}$	0	$9.352 \cdot 10^{-7}$	$9.352 \cdot 10^{-7}$	0
$W^+W^- \to W^+W^-$	5.444	5.444	0	0.09039	0.09039	0
$W^+W^- \to \gamma\gamma$	-0.3065	-0.3065	0	0.0162	0.0162	0
$W^+W^- \to \gamma\gamma\gamma$	$-1.468 \cdot 10^{-6}$	$-1.468 \cdot 10^{-6}$	0	$1.164 \cdot 10^{-7}$	$1.164 \cdot 10^{-7}$	0
$\gamma W^+ \to z W^+$	-0.008249	-0.008249	0	0.0001555	0.0001555	0
$\mu^+\mu^- \to \tau^+\tau^-$	-0.001464	-0.001464	0	$9.397 \cdot 10^{-5}$	$9.397 \cdot 10^{-5}$	0
$ u_{\tau}\bar{\nu}_{\tau} \to \nu_{\tau}\bar{\nu}_{\tau} $	-0.02401	-0.02401	0	0.0003639	0.0003639	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	-0.0005216	-0.0005216	0	$7.905 \cdot 10^{-6}$	$7.905 \cdot 10^{-6}$	0
$b\bar{b}  o \gamma \gamma$	$-1.575 \cdot 10^{-5}$	$-1.575 \cdot 10^{-5}$	0	$8.323 \cdot 10^{-7}$	$8.323 \cdot 10^{-7}$	0
$b\bar{b}  o \mu^+\mu^-$	$-7.174 \cdot 10^{-5}$	$-7.174 \cdot 10^{-5}$	0	$4.886 \cdot 10^{-6}$	$4.886 \cdot 10^{-6}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$-2.856 \cdot 10^{-5}$	$-2.856 \cdot 10^{-5}$	0	$1.601 \cdot 10^{-6}$	$1.601 \cdot 10^{-6}$	0
$b\bar{b}  o b\bar{b}$	0.0251	0.0251	0	0.0001773	0.0001773	0
$b\bar{b}  o d\bar{d}$	$-8.936 \cdot 10^{-5}$	$-8.936 \cdot 10^{-5}$	0	$2.214 \cdot 10^{-6}$	$2.214 \cdot 10^{-6}$	0
b ar b  o t ar t	0.0003085	0.0003085	0	$6.598 \cdot 10^{-6}$	$6.598 \cdot 10^{-6}$	0
$b\bar{b} \to u\bar{u}$	$-8.479 \cdot 10^{-5}$	$-8.479 \cdot 10^{-5}$	0	$1.168 \cdot 10^{-5}$	$1.168 \cdot 10^{-5}$	0
$c\bar{c} \to \mu^+ \mu^-$	-0.0006911	-0.0006911	0	$4.071 \cdot 10^{-5}$	$4.071\cdot10^{-5}$	0
$d\bar{d} \to c\bar{c}$	$-4.743 \cdot 10^{-5}$	$-4.743 \cdot 10^{-5}$	0	$5.864 \cdot 10^{-6}$	$5.864 \cdot 10^{-6}$	0
$d\bar{d} \to e^+e^-$	$-6.974 \cdot 10^{-5}$	$-6.974 \cdot 10^{-5}$	0	$4.758 \cdot 10^{-6}$	$4.758 \cdot 10^{-6}$	0

$e^+\nu_\mu \to e^+\nu_\mu$	-0.002526	-0.002526	0	0.0001995	0.0001995	0
$e^+\nu_e \to e^+\nu_e$	-0.002651	-0.002651	0	0.0003306	0.0003306	0
$e^+\tau^- \to e^+\tau^-$	-1.393	-1.393	0	0.08112	0.08112	0
$e^+e^- \to \mu^+\mu^-$	-0.003391	-0.003391	0	0.0001929	0.0001929	0
$e^+e^- \rightarrow e^+e^-$	-0.006403	-0.006403	0	0.0004305	0.0004305	0
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$-2.839 \cdot 10^{-5}$	$-2.839 \cdot 10^{-5}$	0	$1.498 \cdot 10^{-6}$	$1.498 \cdot 10^{-6}$	0
$s\bar{s} \to s\bar{s}$	-0.3639	-0.3639	0	0.01744	0.01744	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$4.605 \cdot 10^{-5}$	$4.605 \cdot 10^{-5}$	0	$1.395 \cdot 10^{-6}$	$1.395 \cdot 10^{-6}$	0
$t\bar{t} \to \tau^+ \tau^-$	-0.0002072	-0.0002072	0	$1.229 \cdot 10^{-5}$	$1.229 \cdot 10^{-5}$	0
$t\bar{t} \to c\bar{c}$	-0.0008455	-0.0008455	0	$5.101 \cdot 10^{-5}$	$5.101 \cdot 10^{-5}$	0
$t\bar{t} \to d\bar{d}$	$-6.2 \cdot 10^{-5}$	$-6.2 \cdot 10^{-5}$	0	$9.765 \cdot 10^{-6}$	$9.765 \cdot 10^{-6}$	0
$t\bar{t} \to s\bar{s}$	$-3.511 \cdot 10^{-5}$	$-3.511 \cdot 10^{-5}$	0	$4.987 \cdot 10^{-6}$	$4.987 \cdot 10^{-6}$	0
$t\bar{t} \to t\bar{t}$	-95.39	-95.39	0	4.904	4.904	0
$u\bar{d} \to u\bar{d}$	-0.0378	-0.0378	0	0.002961	0.002961	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$2.178 \cdot 10^{-5}$	$2.178 \cdot 10^{-5}$	0	$1.487 \cdot 10^{-6}$	$1.487 \cdot 10^{-6}$	0
$u\bar{u} \to u\bar{u}$	-4.848	-4.848	0	0.3061	0.3061	0
$zz  o W^+W^-$	0.1169	0.1169	0	0.001775	0.001775	0
$zz \to zz$	0.004931	0.004931	0	$7.473 \cdot 10^{-5}$	$7.473 \cdot 10^{-5}$	0

## 2.7 cHG

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
gg  o t ar t	-0.04627	-0.04627	0	0.04069	0.04069	0		
$aa \rightarrow u\bar{u}$	$-8.365 \cdot 10^{-12}$	$-8.365 \cdot 10^{-12}$	0	$7.223 \cdot 10^{-12}$	$7.223 \cdot 10^{-12}$	0		

## 2.8 cHGtil

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$gg \to gg$	$-2.657 \cdot 10^{-15}$	$-2.657 \cdot 10^{-15}$	0	$1.576 \cdot 10^{-32}$	$1.576 \cdot 10^{-32}$	0
gg  o ggg	$-2.905 \cdot 10^{-13}$	$-2.905 \cdot 10^{-13}$	0	$6.726 \cdot 10^{-26}$	$6.726 \cdot 10^{-26}$	0
gg  o t ar t	$2.08 \cdot 10^{-18}$	$2.08 \cdot 10^{-18}$	0	0.04069	0.04069	0
$qq \rightarrow u\bar{u}$	$2.144 \cdot 10^{-28}$	$2.144 \cdot 10^{-28}$	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  o Hzz	$5.953 \cdot 10^{-6}$	$5.953 \cdot 10^{-6}$	0	$5.234 \cdot 10^{-6}$	$5.234 \cdot 10^{-6}$	0	
$HH  o W^+W^-$	0.02023	0.02023	0	8.252	8.252	0	
$HH \to W^+W^-\gamma$	$1.565 \cdot 10^{-6}$	$1.565 \cdot 10^{-6}$	0	$5.758 \cdot 10^{-5}$	$5.758 \cdot 10^{-5}$	0	
$HH  o W^+ \bar t b$	$1.574 \cdot 10^{-7}$	$1.574 \cdot 10^{-7}$	0	$1.673 \cdot 10^{-6}$	$1.673 \cdot 10^{-6}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$-1.231 \cdot 10^{-6}$	$-1.231 \cdot 10^{-6}$	0	$1.155 \cdot 10^{-5}$	$1.155 \cdot 10^{-5}$	0	
$HH \to W^- u \bar{d}$	$1.003 \cdot 10^{-6}$	$1.003 \cdot 10^{-6}$	0	$3.549 \cdot 10^{-6}$	$3.549 \cdot 10^{-6}$	0	
$HH \to z\bar{b}b$	$9.67 \cdot 10^{-7}$	$9.67 \cdot 10^{-7}$	0	$2.539 \cdot 10^{-6}$	$2.539 \cdot 10^{-6}$	0	
$HH \to z \nu_e \bar{\nu}_e$	$3.6 \cdot 10^{-7}$	$3.6 \cdot 10^{-7}$	0	$2.975 \cdot 10^{-6}$	$2.975 \cdot 10^{-6}$	0	
$HH \to zc\bar{c}$	$1.361 \cdot 10^{-7}$	$1.361 \cdot 10^{-7}$	0	$4.771 \cdot 10^{-7}$	$4.771 \cdot 10^{-7}$	0	
$HH \to z d\bar{d}$	$-1.494 \cdot 10^{-7}$	$-1.494 \cdot 10^{-7}$	0	$5.477 \cdot 10^{-6}$	$5.477 \cdot 10^{-6}$	0	
$HH \rightarrow ze^+e^-$	$3.486 \cdot 10^{-7}$	$3.486 \cdot 10^{-7}$	0	$3.318 \cdot 10^{-6}$	$3.318 \cdot 10^{-6}$	0	
$HH \to z t \bar{t}$	$-2.597 \cdot 10^{-5}$	$-2.597 \cdot 10^{-5}$	0	$4.142 \cdot 10^{-6}$	$4.142 \cdot 10^{-6}$	0	
$HH \rightarrow zz$	0.1651	0.1651	0	3.064	3.064	0	
$HW^+  o \gamma t \bar{b}$	$-1.557 \cdot 10^{-6}$	$-1.557 \cdot 10^{-6}$	0	$1.223 \cdot 10^{-6}$	$1.223 \cdot 10^{-6}$	0	
$HW^+ \to \gamma u \bar{d}$	$8.287 \cdot 10^{-9}$	$8.287 \cdot 10^{-9}$	0	$4.83 \cdot 10^{-8}$	$4.83 \cdot 10^{-8}$	0	
$HW^+  o u \bar d$	0.01618	0.01618	0	0.07589	0.07589	0	
$HW^- \to \bar{t}b$	-0.04071	-0.04071	0	0.05277	0.05277	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$1.132 \cdot 10^{-8}$	$1.132 \cdot 10^{-8}$	0	$4.874 \cdot 10^{-8}$	$4.874 \cdot 10^{-8}$	0	
$HW^- \to \mu^- \bar{\nu}_{\mu}$	0.00542	0.00542	0	0.02542	0.02542	0	

$H\gamma  o bar{b}$	$-6.029 \cdot 10^{-7}$	$-6.029 \cdot 10^{-7}$	0	0.009142	0.009142	0
$H\gamma \to c\bar{c}$	$-9.531 \cdot 10^{-7}$	$-9.531 \cdot 10^{-7}$	0	0.01118	0.01118	0
$H\gamma \to d\bar{d}$	$-7.677 \cdot 10^{-12}$	$-7.677 \cdot 10^{-12}$	0	0.01153	0.01153	0
$H\gamma \to e^+e^-$	$-4.547 \cdot 10^{-14}$	$-4.547 \cdot 10^{-14}$	0	0.003449	0.003449	0
$H\gamma  o t\bar{t}$	-0.02162	-0.02162	0	0.01085	0.01085	0
$Hz \to \mu^+\mu^-$	0.002572	0.002572	0	0.01306	0.01306	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.00241	0.00241	0	0.006827	0.006827	0
$Hz \to b\bar{b}$	0.008272	0.008272	0	0.02768	0.02768	0
$Hz \to s\bar{s}$	0.006618	0.006618	0	0.02199	0.02199	0
$Hz \to t\bar{t}$	-0.04606	-0.04606	0	0.02648	0.02648	0
$Hz \to u\bar{u}$	0.00894	0.00894	0	0.03591	0.03591	0
$W^+W^-  o Hbar{b}$	$-8.18 \cdot 10^{-8}$	$-8.18 \cdot 10^{-8}$	0	$9.976 \cdot 10^{-8}$	$9.976 \cdot 10^{-8}$	0
$W^+W^- \to Hc\bar{c}$	$-2.118 \cdot 10^{-6}$	$-2.118 \cdot 10^{-6}$	0	$1.991 \cdot 10^{-6}$	$1.991 \cdot 10^{-6}$	0
$W^+W^- \to H d\bar{d}$	$-8.148 \cdot 10^{-7}$	$-8.148 \cdot 10^{-7}$	0	$1.827 \cdot 10^{-6}$	$1.827 \cdot 10^{-6}$	0
$W^+W^- \to H t \bar t$	$4.442 \cdot 10^{-6}$	$4.442 \cdot 10^{-6}$	0	$1.395 \cdot 10^{-5}$	$1.395 \cdot 10^{-5}$	0
$W^+W^- \to W^+W^-$	0.205	0.205	0	2.186	2.186	0
$W^+W^-  o \gamma\gamma$	-0.01301	-0.01301	0	0.02279	0.02279	0
$W^+W^- \to \gamma\gamma\gamma$	$-1.624 \cdot 10^{-8}$	$-1.624 \cdot 10^{-8}$	0	$4.865 \cdot 10^{-8}$	$4.865 \cdot 10^{-8}$	0
$\gamma W^+  o z W^+$	0.03089	0.03089	0	0.0266	0.0266	0
$b\bar{b}  o \gamma \gamma$	$-1.307 \cdot 10^{-7}$	$-1.307 \cdot 10^{-7}$	0	$5.97 \cdot 10^{-7}$	$5.97 \cdot 10^{-7}$	0
$zz \to W^+W^-$	-0.4044	-0.4044	0	1.435	1.435	0
$zz \to zz$	0.006078	0.006078	0	0.8064	0.8064	0

# 2.10 cHWB

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$HH \rightarrow Hzz$	$2.644 \cdot 10^{-6}$	$2.644 \cdot 10^{-6}$	0	$8.731 \cdot 10^{-7}$	$8.731 \cdot 10^{-7}$	0	
$HH \to W^+W^-\gamma$	$-1.977 \cdot 10^{-7}$	$-1.977 \cdot 10^{-7}$	0	$3.99 \cdot 10^{-5}$	$3.99 \cdot 10^{-5}$	0	

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$HH \rightarrow zbb$	$1.275 \cdot 10^{-7}$	$1.275 \cdot 10^{-7}$	0		$1.045 \cdot 10^{-7}$	0
$HH \to z \nu_e \bar{\nu}_e$	$2.95 \cdot 10^{-7}$	$2.95 \cdot 10^{-7}$	0	$4.376 \cdot 10^{-8}$	$4.376 \cdot 10^{-8}$	0
$HH \to zc\bar{c}$	$1.599 \cdot 10^{-7}$	$1.599 \cdot 10^{-7}$	0	$9.844 \cdot 10^{-8}$	$9.844 \cdot 10^{-8}$	0
$HH  o zd\bar{d}$	$2.813 \cdot 10^{-6}$	$2.813 \cdot 10^{-6}$	0	$8.709 \cdot 10^{-6}$	$8.709 \cdot 10^{-6}$	0
$HH \rightarrow ze^+e^-$	$8.156 \cdot 10^{-8}$	$8.156 \cdot 10^{-8}$	0	$5.755 \cdot 10^{-8}$	$5.755 \cdot 10^{-8}$	0
$HH  o zt\bar{t}$	$-2.324 \cdot 10^{-5}$	$-2.324 \cdot 10^{-5}$	0	$2.394 \cdot 10^{-6}$	$2.394 \cdot 10^{-6}$	0
$HH \rightarrow zz$	0.02632	0.02632	0	0.6997	0.6997	0
$HW^+  o \gamma t \bar{b}$	$-1.151 \cdot 10^{-5}$	$-1.151 \cdot 10^{-5}$	0	$2.435 \cdot 10^{-6}$	$2.435 \cdot 10^{-6}$	0
$HW^+ \to \gamma u \bar{d}$	$1.179 \cdot 10^{-7}$	$1.179 \cdot 10^{-7}$	0	$2.75 \cdot 10^{-7}$	$2.75 \cdot 10^{-7}$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-2.911 \cdot 10^{-9}$	$-2.911 \cdot 10^{-9}$	0	$3.037 \cdot 10^{-8}$	$3.037 \cdot 10^{-8}$	0
$H\gamma \to b\bar{b}$	$-1.673 \cdot 10^{-5}$	$-1.673 \cdot 10^{-5}$	0	0.006925	0.006925	0
$H\gamma \to c\bar{c}$	$-1.333 \cdot 10^{-5}$	$-1.333 \cdot 10^{-5}$	0	0.01762	0.01762	0
$H\gamma \to d\bar{d}$	$-1.171 \cdot 10^{-10}$	$-1.171 \cdot 10^{-10}$	0	0.01277	0.01277	0
$H\gamma \to e^+e^-$	$-1.029 \cdot 10^{-12}$	$-1.029 \cdot 10^{-12}$	0	0.0071	0.0071	0
$H\gamma \to t\bar{t}$	-0.08208	-0.08208	0	0.01527	0.01527	0
$Hz \to \mu^+\mu^-$	0.0007119	0.0007119	0	0.002141	0.002141	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.001388	0.001388	0	0.002106	0.002106	0
$Hz  o b\bar{b}$	0.003048	0.003048	0	0.003635	0.003635	0
$Hz \to s\bar{s}$	0.002865	0.002865	0	0.003312	0.003312	0
$Hz \to t\bar{t}$	-0.01043	-0.01043	0	0.004907	0.004907	0
$Hz \to u\bar{u}$	0.003007	0.003007	0	0.005386	0.005386	0
$W^+W^- \to H b \bar b$	$-1.714 \cdot 10^{-7}$	$-1.714 \cdot 10^{-7}$	0	$1.936 \cdot 10^{-8}$	$1.936 \cdot 10^{-8}$	0
$W^+W^-  o Hc\bar{c}$	$9.452 \cdot 10^{-9}$	$9.452 \cdot 10^{-9}$	0	$2.623 \cdot 10^{-8}$	$2.623 \cdot 10^{-8}$	0
$W^+W^- \to H d\bar{d}$	$-3.264 \cdot 10^{-8}$	$-3.264 \cdot 10^{-8}$	0	$1.053 \cdot 10^{-8}$	$1.053 \cdot 10^{-8}$	0
$W^+W^-  o H t \bar t$	$8.088 \cdot 10^{-6}$	$8.088 \cdot 10^{-6}$	0	$3.971 \cdot 10^{-7}$	$3.971 \cdot 10^{-7}$	0
$W^+W^- \rightarrow W^+W^-$	0.6789	0.6789	0	0.04473	0.04473	0
$W^+W^- \to \gamma\gamma$	-0.3809	-0.3809	0	0.1386	0.1386	0
$W^+W^- \to \gamma\gamma\gamma$	$-2.413 \cdot 10^{-6}$	$-2.413 \cdot 10^{-6}$	0	$6.187 \cdot 10^{-7}$	$6.187 \cdot 10^{-7}$	0
$\gamma W^+ \to z W^+$	0.1197	0.1197	0	1.022	1.022	0
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$\mu^+\mu^- \to \tau^+\tau^-$	-0.003422	-0.003422	0	0.0005012	0.0005012	0
$b\bar{b}  o \gamma\gamma$	$-3.352 \cdot 10^{-5}$	$-3.352 \cdot 10^{-5}$	0	$5.854 \cdot 10^{-6}$	$5.854 \cdot 10^{-6}$	0
$b\bar{b} \to \mu^+ \mu^-$	$-5.84 \cdot 10^{-5}$	$-5.84 \cdot 10^{-5}$	0	$1.657 \cdot 10^{-5}$	$1.657 \cdot 10^{-5}$	0
$b\bar{b}  o \nu_e \bar{\nu}_e$	$-1.003 \cdot 10^{-5}$	$-1.003 \cdot 10^{-5}$	0	$1.177 \cdot 10^{-6}$	$1.177 \cdot 10^{-6}$	0
b ar b  o b ar b	0.02876	0.02876	0	0.0004259	0.0004259	0
$b\bar{b} \to d\bar{d}$	0.0001544	0.0001544	0	$6.999 \cdot 10^{-6}$	$6.999 \cdot 10^{-6}$	0
b ar b  o t ar t	-0.0001491	-0.0001491	0	$1.887 \cdot 10^{-5}$	$1.887 \cdot 10^{-5}$	0
$b\bar{b} \to u\bar{u}$	-0.0001385	-0.0001385	0	$3.233 \cdot 10^{-5}$	$3.233 \cdot 10^{-5}$	0
$c\bar{c} \to \mu^+ \mu^-$	-0.001501	-0.001501	0	0.0001261	0.0001261	0
$d\bar{d} \to c\bar{c}$	$-6.315 \cdot 10^{-5}$	$-6.315 \cdot 10^{-5}$	0	$1.696 \cdot 10^{-5}$	$1.696 \cdot 10^{-5}$	0
$d\bar{d} \to e^+e^-$	$-5.699 \cdot 10^{-5}$	$-5.699 \cdot 10^{-5}$	0	$1.612 \cdot 10^{-5}$	$1.612 \cdot 10^{-5}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	-0.00186	-0.00186	0	0.0001547	0.0001547	0
$e^+\nu_e \to e^+\nu_e$	-0.0006372	-0.0006372	0	0.0002749	0.0002749	0
$e^+\tau^- \to e^+\tau^-$	-3.033	-3.033	0	0.3565	0.3565	0
$e^+e^- \to \mu^+\mu^-$	-0.006918	-0.006918	0	0.0006436	0.0006436	0
$e^+e^- \rightarrow e^+e^-$	-0.01583	-0.01583	0	0.00263	0.00263	0
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	$-6.215 \cdot 10^{-6}$	$-6.215 \cdot 10^{-6}$	0	$1.124 \cdot 10^{-6}$	$1.124 \cdot 10^{-6}$	0
$s\bar{s} \to s\bar{s}$	0.01418	0.01418	0	0.07002	0.07002	0
$t \bar t  o  u_\mu ar u_\mu$	0.0001588	0.0001588	0	$4.978 \cdot 10^{-6}$	$4.978 \cdot 10^{-6}$	0
$t\bar{t} \to \tau^+ \tau^-$	-0.000513	-0.000513	0	$7.018 \cdot 10^{-5}$	$7.018 \cdot 10^{-5}$	0
$t\bar{t} \to c\bar{c}$	-0.001915	-0.001915	0	0.000154	0.000154	0
$t\bar{t}  o d\bar{d}$	-0.0001297	-0.0001297	0	$2.785 \cdot 10^{-5}$	$2.785 \cdot 10^{-5}$	0
$t\bar{t} \to s\bar{s}$	$-6.298 \cdot 10^{-5}$	$-6.298 \cdot 10^{-5}$	0	$1.579 \cdot 10^{-5}$	$1.579 \cdot 10^{-5}$	0
$t\bar{t} \to t\bar{t}$	-234.4	-234.4	0	23.17	23.17	0
$u\bar{d} \to u\bar{d}$	-0.05828	-0.05828	0	0.01067	0.01067	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.0001167	0.0001167	0	$3.978 \cdot 10^{-6}$	$3.978 \cdot 10^{-6}$	0
$u\bar{u} \to u\bar{u}$	-11.8	-11.8	0	1.548	1.548	0
$zz \to W^+W^-$	0.2299	0.2299	0	0.1634	0.1634	0
zz  o zz	0.003248	0.003248	0	0.2426	0.2426	0

#### 2.11 cHWBtil

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to Hzz$	$3.06 \cdot 10^{-7}$	$3.06 \cdot 10^{-7}$	0	$5.136 \cdot 10^{-7}$	$5.136 \cdot 10^{-7}$	0	
$HH \to W^+W^-\gamma$	$-8.154 \cdot 10^{-7}$	$-8.154 \cdot 10^{-7}$	0	$3.988 \cdot 10^{-5}$		0	
$HH  o z \bar{b} b$	$-1.766 \cdot 10^{-8}$	$-1.766 \cdot 10^{-8}$	0	$4.906 \cdot 10^{-8}$	$4.906 \cdot 10^{-8}$	0	
$HH \to z \nu_e \bar{\nu}_e$	$-3.536 \cdot 10^{-10}$	$-3.536 \cdot 10^{-10}$	0	$4.492 \cdot 10^{-9}$	$4.492 \cdot 10^{-9}$	0	
$HH \to zc\bar{c}$	$9.161 \cdot 10^{-8}$	$9.161 \cdot 10^{-8}$	0	$3.377 \cdot 10^{-8}$	$3.377 \cdot 10^{-8}$	0	
$HH \to z d\bar{d}$	$3.487 \cdot 10^{-6}$	$3.487 \cdot 10^{-6}$	0	$8.398 \cdot 10^{-6}$	$8.398 \cdot 10^{-6}$	0	
$HH \rightarrow z e^+ e^-$	$1.557\cdot10^{-8}$	$1.557 \cdot 10^{-8}$	0	$2.379 \cdot 10^{-8}$	$2.379 \cdot 10^{-8}$	0	
$HH \to z t \bar{t}$	$9.647 \cdot 10^{-7}$	$9.647 \cdot 10^{-7}$	0	$1.667 \cdot 10^{-6}$	$1.667 \cdot 10^{-6}$	0	
$HH \rightarrow zz$	$4.64 \cdot 10^{-17}$	$4.64 \cdot 10^{-17}$	0	0.6976	0.6976	0	
$HW^+ \to \gamma t \bar{b}$	$-5.417 \cdot 10^{-7}$	$-5.417 \cdot 10^{-7}$	0	$2.098 \cdot 10^{-6}$	$2.098 \cdot 10^{-6}$	0	
$HW^+  o \gamma u \bar{d}$	$-1.586 \cdot 10^{-8}$	$-1.586 \cdot 10^{-8}$	0	$2.89 \cdot 10^{-7}$	$2.89 \cdot 10^{-7}$	0	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-1.161 \cdot 10^{-8}$	$-1.161 \cdot 10^{-8}$	0	$3.012 \cdot 10^{-8}$	$3.012 \cdot 10^{-8}$	0	
$H\gamma  o b\bar{b}$	$-5.557 \cdot 10^{-10}$	$-5.557 \cdot 10^{-10}$	0	0.006924	0.006924	0	
$H\gamma \to c\bar{c}$	$-1.178 \cdot 10^{-9}$	$-1.178 \cdot 10^{-9}$	0	0.01762	0.01762	0	
$H\gamma \to d\bar{d}$	$6.94 \cdot 10^{-14}$	$6.94 \cdot 10^{-14}$	0	0.01277	0.01277	0	
$H\gamma \to e^+e^-$	$-3.426 \cdot 10^{-17}$	$-3.426 \cdot 10^{-17}$	0	0.0071	0.0071	0	
$H\gamma \to t\bar{t}$	$2.68 \cdot 10^{-6}$	$2.68 \cdot 10^{-6}$	0	0.01111	0.01111	0	
$Hz \to \mu^+\mu^-$	$1.166 \cdot 10^{-7}$	$1.166 \cdot 10^{-7}$	0	0.002184	0.002184	0	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$9.035 \cdot 10^{-20}$	$9.035 \cdot 10^{-20}$	0	0.002106	0.002106	0	
$Hz  o b\bar{b}$	$1.03 \cdot 10^{-7}$	$1.03 \cdot 10^{-7}$	0	0.0036	0.0036	0	
$Hz \to s\bar{s}$	$2.448 \cdot 10^{-8}$	$2.448 \cdot 10^{-8}$	0	0.003279	0.003279	0	
$Hz \to t\bar{t}$	$-9.508 \cdot 10^{-7}$	$-9.508 \cdot 10^{-7}$	0	0.003818	0.003818	0	
$Hz \to u\bar{u}$	$-5.347 \cdot 10^{-7}$	$-5.347 \cdot 10^{-7}$	0	0.005441	0.005441	0	
$W^+W^-  o Hb\bar{b}$	$-1.868 \cdot 10^{-8}$	$-1.868 \cdot 10^{-8}$	0	$1.945 \cdot 10^{-8}$	$1.945 \cdot 10^{-8}$	0	
$W^+W^- \to H c\bar{c}$	$9.352 \cdot 10^{-10}$	$9.352 \cdot 10^{-10}$	0	$2.424 \cdot 10^{-8}$	$2.424 \cdot 10^{-8}$	0	
$W^+W^-  o Hd\bar{d}$	$1.674 \cdot 10^{-9}$	$1.674 \cdot 10^{-9}$	0	$9.675 \cdot 10^{-9}$	$9.675 \cdot 10^{-9}$	0	

$W^+W^- \to H t \bar t$	$1.147 \cdot 10^{-7}$	$1.147 \cdot 10^{-7}$	0	$2.827 \cdot 10^{-7}$	$2.827 \cdot 10^{-7}$	0
$W^+W^- \to W^+W^-$	$6.199 \cdot 10^{-15}$	$6.256 \cdot 10^{-15}$	-0.009252	0.02938	0.02938	0
$W^+W^- \to \gamma\gamma$	$-2.247 \cdot 10^{-17}$	$-2.336 \cdot 10^{-17}$	-0.03928	0.1193	0.1193	0
$W^+W^-  o \gamma\gamma\gamma$	$1.649 \cdot 10^{-9}$	$1.649 \cdot 10^{-9}$	0	$3.187 \cdot 10^{-7}$	$3.187 \cdot 10^{-7}$	0
$\gamma W^+ \to z W^+$	$6.073 \cdot 10^{-16}$	$6.036 \cdot 10^{-16}$	0.006166	1.034	1.034	0
$b\bar{b}  o \gamma \gamma$	$1.645 \cdot 10^{-24}$	$1.645 \cdot 10^{-24}$	0	$2.082 \cdot 10^{-6}$	$2.082 \cdot 10^{-6}$	0
$zz \to W^+W^-$	$-6.229 \cdot 10^{-16}$	$-6.302 \cdot 10^{-16}$	-0.01175	0.1619	0.1619	0
$zz \rightarrow zz$	$4.355 \cdot 10^{-19}$	$4.355 \cdot 10^{-19}$	0	0.2422	0.2422	0

## 2.12 cHWtil

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \rightarrow Hzz$	$5.715 \cdot 10^{-7}$	$5.715 \cdot 10^{-7}$	0	$1.791 \cdot 10^{-6}$	$1.791 \cdot 10^{-6}$	0	
$HH \to W^+W^-$	$-8.191 \cdot 10^{-15}$	$-8.191 \cdot 10^{-15}$	0	12.29	12.29	0	
$HH \to W^+W^-\gamma$	$7.896 \cdot 10^{-7}$	$7.896 \cdot 10^{-7}$	0	$7.908 \cdot 10^{-5}$	$7.908 \cdot 10^{-5}$	0	
$HH \to W^+ \bar{t} b$	$1.966 \cdot 10^{-7}$	$1.966 \cdot 10^{-7}$	0	$1.194 \cdot 10^{-6}$	$1.194 \cdot 10^{-6}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$3.254 \cdot 10^{-7}$	$3.254 \cdot 10^{-7}$	0	$5.032 \cdot 10^{-7}$	$5.032 \cdot 10^{-7}$	0	
$HH \to W^- u \bar{d}$	$-1.179 \cdot 10^{-6}$	$-1.179 \cdot 10^{-6}$	0	$3.458 \cdot 10^{-6}$	$3.458 \cdot 10^{-6}$	0	
$HH \to z\bar{b}b$	$-4.664 \cdot 10^{-8}$	$-4.664 \cdot 10^{-8}$	0	$3.195 \cdot 10^{-7}$	$3.195 \cdot 10^{-7}$	0	
$HH \to z \nu_e \bar{\nu}_e$	$-6.603 \cdot 10^{-10}$	$-6.603 \cdot 10^{-10}$	0	$1.567 \cdot 10^{-8}$	$1.567 \cdot 10^{-8}$	0	
$HH \to zc\bar{c}$	$2.892 \cdot 10^{-7}$	$2.892 \cdot 10^{-7}$	0	$2.14 \cdot 10^{-7}$	$2.14 \cdot 10^{-7}$	0	
$HH \to z d\bar{d}$	$8.225 \cdot 10^{-6}$	$8.225 \cdot 10^{-6}$	0	$4.738 \cdot 10^{-5}$	$4.738 \cdot 10^{-5}$	0	
$HH \rightarrow ze^+e^-$	$3.675 \cdot 10^{-8}$	$3.675 \cdot 10^{-8}$	0	$8.173 \cdot 10^{-8}$	$8.173 \cdot 10^{-8}$	0	
$HH \to zt\bar{t}$	$3.065 \cdot 10^{-6}$	$3.065 \cdot 10^{-6}$	0	$8.471 \cdot 10^{-6}$	$8.471 \cdot 10^{-6}$	0	
$HH \rightarrow zz$	$8.652 \cdot 10^{-17}$	$8.652 \cdot 10^{-17}$	0	2.433	2.433	0	
$HW^+  o \gamma t \bar{b}$	$4.93 \cdot 10^{-6}$	$4.93 \cdot 10^{-6}$	0	$2.834 \cdot 10^{-6}$	$2.834 \cdot 10^{-6}$	0	
$HW^+ \to \gamma u \bar{d}$	$3.361 \cdot 10^{-9}$	$3.361 \cdot 10^{-9}$	0	$9.937 \cdot 10^{-7}$	$9.937 \cdot 10^{-7}$	0	
$HW^+ \to u\bar{d}$	$-1.599 \cdot 10^{-14}$	$-1.599 \cdot 10^{-14}$	0	0.07697	0.07697	0	

$HW^-  o \bar{t}b$	$-2.098 \cdot 10^{-5}$	$-2.098 \cdot 10^{-5}$	0	0.05349	0.05349	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$-7.94 \cdot 10^{-10}$	$-7.94 \cdot 10^{-10}$	0	$2.788 \cdot 10^{-8}$	$2.788 \cdot 10^{-8}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$	$1.7 \cdot 10^{-12}$	$1.7 \cdot 10^{-12}$	0	0.02034	0.02034	0
$H\gamma \to b\bar{b}$	$8.344 \cdot 10^{-10}$	$8.344 \cdot 10^{-10}$	0	0.00933	0.00933	0
$H\gamma \to c\bar{c}$	$1.769 \cdot 10^{-9}$	$1.769 \cdot 10^{-9}$	0	0.0151	0.0151	0
$H\gamma \to d\bar{d}$	$-1.042 \cdot 10^{-13}$	$-1.042 \cdot 10^{-13}$	0	0.01721	0.01721	0
$H\gamma \to e^+e^-$	$5.144 \cdot 10^{-17}$	$5.144 \cdot 10^{-17}$	0	0.004131	0.004131	0
$H\gamma  o t\bar{t}$	$-4.024 \cdot 10^{-6}$	$-4.024 \cdot 10^{-6}$	0	0.00887	0.00887	0
$Hz \to \mu^+\mu^-$	$-1.751 \cdot 10^{-7}$	$-1.751 \cdot 10^{-7}$	0	0.007631	0.007631	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.084 \cdot 10^{-19}$	$1.084 \cdot 10^{-19}$	0	0.007345	0.007345	0
$Hz \to b\bar{b}$	$-1.61 \cdot 10^{-7}$	$-1.61 \cdot 10^{-7}$	0	0.0225	0.0225	0
$Hz \to s\bar{s}$	$-3.676 \cdot 10^{-8}$	$-3.676 \cdot 10^{-8}$	0	0.02049	0.02049	0
$Hz \to t\bar{t}$	$-2.082 \cdot 10^{-6}$	$-2.082 \cdot 10^{-6}$	0	0.02588	0.02588	0
$Hz \to u\bar{u}$	$8.029 \cdot 10^{-7}$	$8.029 \cdot 10^{-7}$	0	0.03411	0.03411	0
$W^+W^- \to Hb\bar{b}$	$-1.295 \cdot 10^{-7}$	$-1.295 \cdot 10^{-7}$	0	$1.015 \cdot 10^{-7}$	$1.015 \cdot 10^{-7}$	0
$W^+W^- \to Hc\bar{c}$	$9.427 \cdot 10^{-10}$	$9.427 \cdot 10^{-10}$	0	$2.688 \cdot 10^{-10}$	$2.688 \cdot 10^{-10}$	0
$W^+W^- \to H d\bar{d}$	$3.119 \cdot 10^{-9}$	$3.119 \cdot 10^{-9}$	0	$5.286 \cdot 10^{-10}$	$5.286 \cdot 10^{-10}$	0
$W^+W^- \to H t \bar t$	$1.207 \cdot 10^{-6}$	$1.207 \cdot 10^{-6}$	0	$1.857 \cdot 10^{-5}$	$1.857 \cdot 10^{-5}$	0
$W^+W^- \rightarrow W^+W^-$	$4.995 \cdot 10^{-15}$	$5.028 \cdot 10^{-15}$	-0.006659	1.855	1.855	0
$W^+W^- \to \gamma\gamma$	$-1.352 \cdot 10^{-17}$	$-1.352 \cdot 10^{-17}$	0	0.02279	0.02279	0
$W^+W^- \to \gamma\gamma\gamma$	$-1.824 \cdot 10^{-10}$	$-1.824 \cdot 10^{-10}$	0	$4.28 \cdot 10^{-8}$	$4.28\cdot10^{-8}$	0
$\gamma W^+ \to z W^+$	$2.94 \cdot 10^{-17}$	$2.783 \cdot 10^{-17}$	0.05315	0.0001955	0.0001955	0
$b\bar{b} \to \gamma \gamma$	$-8.807 \cdot 10^{-25}$	$-8.807 \cdot 10^{-25}$	0	$5.97 \cdot 10^{-7}$	$5.97\cdot10^{-7}$	0
$zz \to W^+W^-$	$-3.473 \cdot 10^{-15}$	$-3.473 \cdot 10^{-15}$	0	1.434	1.434	0
$zz \to zz$	$8.109 \cdot 10^{-19}$	$8.109 \cdot 10^{-19}$	0	0.8447	0.8447	0

#### 2.13 cHbox

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to HH$	0.4007	0.4007	0	0.2244	0.2244	0
$HH \rightarrow HHH$	$-5.698 \cdot 10^{-7}$	$-5.698 \cdot 10^{-7}$	0	$9.088 \cdot 10^{-6}$	$9.088 \cdot 10^{-6}$	0
$HH \to H \tau^+ \tau^-$	$3.765 \cdot 10^{-10}$	$3.765 \cdot 10^{-10}$	0	$4.355 \cdot 10^{-10}$	$4.355 \cdot 10^{-10}$	0
$HH \to Hb\bar{b}$	$2.057 \cdot 10^{-8}$	$2.057 \cdot 10^{-8}$	0	$1.451 \cdot 10^{-8}$	$1.451 \cdot 10^{-8}$	0
$HH \to Hs\bar{s}$	$7.593 \cdot 10^{-10}$	$7.593 \cdot 10^{-10}$	0	$4.226 \cdot 10^{-10}$	$4.226 \cdot 10^{-10}$	0
$HH \to Ht\bar{t}$	$-5.28 \cdot 10^{-5}$	$-5.28 \cdot 10^{-5}$	0	$2.427 \cdot 10^{-5}$	$2.427 \cdot 10^{-5}$	0
$HH \to Hu\bar{u}$	$2.819 \cdot 10^{-15}$	$2.819 \cdot 10^{-15}$	0	$2.49 \cdot 10^{-15}$	$2.49 \cdot 10^{-15}$	0
$HH \rightarrow Hzz$	$-5.099 \cdot 10^{-6}$	$-5.099 \cdot 10^{-6}$	0	$4.304 \cdot 10^{-6}$	$4.304 \cdot 10^{-6}$	0
$HH  o W^+W^-$	-14.5	-14.5	0	1.843	1.843	0
$HH  o W^+W^-\gamma$	$7.534 \cdot 10^{-7}$	$7.534 \cdot 10^{-7}$	0	$1.423 \cdot 10^{-6}$	$1.423 \cdot 10^{-6}$	0
$HH  o W^+ \bar t b$	$-1.491 \cdot 10^{-5}$	$-1.491 \cdot 10^{-5}$	0	$2.043 \cdot 10^{-5}$	$2.043 \cdot 10^{-5}$	0
$HH \to W^+ e^- \bar{\nu}_e$	$2.191 \cdot 10^{-8}$	$2.191 \cdot 10^{-8}$	0	$5.996 \cdot 10^{-9}$	$5.996 \cdot 10^{-9}$	0
$HH \to W^- u \bar{d}$	$1.862 \cdot 10^{-8}$	$1.862 \cdot 10^{-8}$	0	$3.487 \cdot 10^{-8}$	$3.487 \cdot 10^{-8}$	0
$HH  o z \bar{b} b$	$9.249 \cdot 10^{-8}$	$9.249 \cdot 10^{-8}$	0	$1.952 \cdot 10^{-8}$	$1.952 \cdot 10^{-8}$	0
$HH \to z \nu_e \bar{\nu}_e$	$2.864 \cdot 10^{-7}$	$2.864 \cdot 10^{-7}$	0	$1.582 \cdot 10^{-8}$	$1.582 \cdot 10^{-8}$	0
$HH \to zc\bar{c}$	$6.991 \cdot 10^{-8}$	$6.991 \cdot 10^{-8}$	0	$8.093 \cdot 10^{-9}$	$8.093 \cdot 10^{-9}$	0
$HH \to z d\bar{d}$	$-6.022 \cdot 10^{-6}$	$-6.022 \cdot 10^{-6}$	0	$8.998 \cdot 10^{-6}$	$8.998 \cdot 10^{-6}$	0
$HH \rightarrow ze^+e^-$	$2.25\cdot 10^{-8}$	$2.25\cdot 10^{-8}$	0	$2.38 \cdot 10^{-9}$	$2.38 \cdot 10^{-9}$	0
$HH \to z t \bar{t}$	$-1.142 \cdot 10^{-5}$	$-1.142 \cdot 10^{-5}$	0	$6.239 \cdot 10^{-5}$	$6.239 \cdot 10^{-5}$	0
$HH \rightarrow zz$	-1.233	-1.233	0	1.843	1.843	0
$HW^+ \to \gamma t \bar{b}$	$9.138 \cdot 10^{-6}$	$9.138 \cdot 10^{-6}$	0	$2.77 \cdot 10^{-7}$	$2.77 \cdot 10^{-7}$	0
$HW^+ \to \gamma u \bar{d}$	$6.051 \cdot 10^{-9}$	$6.051 \cdot 10^{-9}$	0	$1.834 \cdot 10^{-10}$	$1.834 \cdot 10^{-10}$	0
$HW^+ \to u\bar{d}$	0.001586	0.001586	0	$4.808 \cdot 10^{-5}$	$4.808 \cdot 10^{-5}$	0
$HW^- \to \bar{t}b$	0.0962	0.0962	0	0.002916	0.002916	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$8.141 \cdot 10^{-10}$	$8.141 \cdot 10^{-10}$	0	$2.468 \cdot 10^{-11}$		0
$HW^- \to \mu^- \bar{\nu}_{\mu}$	0.0008048	0.0008048	0	$2.44 \cdot 10^{-5}$	$2.44 \cdot 10^{-5}$	0
$H\gamma  o bar{b}$	$9.464 \cdot 10^{-6}$	$9.464 \cdot 10^{-6}$	0	$2.869 \cdot 10^{-7}$	$2.869 \cdot 10^{-7}$	0
$H\gamma \to c\bar{c}$	$1.196 \cdot 10^{-5}$	$1.196 \cdot 10^{-5}$	0	$3.626 \cdot 10^{-7}$	$3.626 \cdot 10^{-7}$	0

_	10	10		10	10	
$H\gamma \to dd$	$3.059 \cdot 10^{-10}$	$3.059 \cdot 10^{-10}$	0	$9.271 \cdot 10^{-12}$	$9.271 \cdot 10^{-12}$	0
$H\gamma \to e^+e^-$	$6.855 \cdot 10^{-13}$	$6.855 \cdot 10^{-13}$	0	$2.078 \cdot 10^{-14}$	$2.078 \cdot 10^{-14}$	0
$H\gamma \to t\bar{t}$	0.04854	0.04854	0	0.001471	0.001471	0
$Hz \rightarrow \mu^{+}\mu^{-}$	0.0003553	0.0003553	0	$1.077 \cdot 10^{-5}$	$1.077 \cdot 10^{-5}$	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.00074	0.00074	0	$2.243 \cdot 10^{-5}$	$2.243 \cdot 10^{-5}$	0
$Hz \to b\bar{b}$	0.001608	0.001608	0	$4.875 \cdot 10^{-5}$	$4.875 \cdot 10^{-5}$	0
$Hz \to s\bar{s}$	0.001781	0.001781	0	$5.398 \cdot 10^{-5}$	$5.398 \cdot 10^{-5}$	0
$Hz \to t\bar{t}$	0.2201	0.2201	0	0.006671	0.006671	0
$Hz \to u\bar{u}$	0.00051	0.00051	0	$1.546 \cdot 10^{-5}$	$1.546 \cdot 10^{-5}$	0
$W^+W^- \to H b \bar b$	$7.813 \cdot 10^{-7}$	$7.813 \cdot 10^{-7}$	0	$2.548 \cdot 10^{-8}$	$2.548 \cdot 10^{-8}$	0
$W^+W^- \to Hc\bar{c}$	$3.79 \cdot 10^{-8}$	$3.79 \cdot 10^{-8}$	0	$1.203 \cdot 10^{-9}$	$1.203 \cdot 10^{-9}$	0
$W^+W^- \to H d\bar{d}$	$2.893 \cdot 10^{-8}$	$2.893 \cdot 10^{-8}$	0	$8.769 \cdot 10^{-10}$	$8.769 \cdot 10^{-10}$	0
$W^+W^- \to H t \bar t$	$1.642 \cdot 10^{-5}$	$1.642 \cdot 10^{-5}$	0	$8.056 \cdot 10^{-6}$	$8.056 \cdot 10^{-6}$	0
$W^+W^- \to W^+W^-$	11.31	11.31	0	0.3668	0.3668	0
$\mu^+\mu^- \to \tau^+\tau^-$	$2.38 \cdot 10^{-12}$	$2.38 \cdot 10^{-12}$	0	$1.455 \cdot 10^{-13}$	$1.455 \cdot 10^{-13}$	0
$b\bar{b} \to \mu^+\mu^-$	$4.394 \cdot 10^{-12}$	$4.394 \cdot 10^{-12}$	0	$2.684 \cdot 10^{-13}$	$2.684 \cdot 10^{-13}$	0
b ar b  o b ar b	-0.0003286	-0.0003286	0	$2.628 \cdot 10^{-9}$	$2.628 \cdot 10^{-9}$	0
$b\bar{b}  o d\bar{d}$	$2.604 \cdot 10^{-14}$	$2.604 \cdot 10^{-14}$	0	$1.573 \cdot 10^{-15}$	$1.573 \cdot 10^{-15}$	0
b ar b  o t ar t	$2.04 \cdot 10^{-5}$	$2.04 \cdot 10^{-5}$	0	$1.896 \cdot 10^{-6}$	$1.896 \cdot 10^{-6}$	0
$b\bar{b} \to u\bar{u}$	$5.517 \cdot 10^{-15}$	$5.517 \cdot 10^{-15}$	0	$3.365 \cdot 10^{-16}$	$3.365 \cdot 10^{-16}$	0
$c\bar{c} \to \mu^+ \mu^-$	$4.026 \cdot 10^{-13}$	$4.026 \cdot 10^{-13}$	0	$2.478 \cdot 10^{-14}$	$2.478 \cdot 10^{-14}$	0
$d\bar{d} \to c\bar{c}$	$2.391 \cdot 10^{-15}$	$2.391 \cdot 10^{-15}$	0	$1.452 \cdot 10^{-16}$	$1.452 \cdot 10^{-16}$	0
$d\bar{d} \to e^+e^-$	$1.283 \cdot 10^{-22}$	$1.283 \cdot 10^{-22}$	0	$7.836 \cdot 10^{-24}$	$7.836 \cdot 10^{-24}$	0
$e^+\tau^- \to e^+\tau^-$	$4.541 \cdot 10^{-16}$	$4.541 \cdot 10^{-16}$	0	$2.19 \cdot 10^{-18}$	$2.19 \cdot 10^{-18}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	$2.012 \cdot 10^{-19}$	$2.012 \cdot 10^{-19}$	0	$1.203 \cdot 10^{-20}$	$1.203 \cdot 10^{-20}$	0
$e^+e^- \rightarrow e^+e^-$	$-1.439 \cdot 10^{-13}$	$-1.439 \cdot 10^{-13}$	0	$8.112 \cdot 10^{-25}$	$8.112 \cdot 10^{-25}$	0
$s\bar{s} \to s\bar{s}$	$-1.801 \cdot 10^{-6}$	$-1.801 \cdot 10^{-6}$	0	$4.153 \cdot 10^{-16}$	$4.153 \cdot 10^{-16}$	0
$t\bar{t} \to \tau^+ \tau^-$	$2.022 \cdot 10^{-6}$	$2.022 \cdot 10^{-6}$	0	$1.221 \cdot 10^{-7}$	$1.221 \cdot 10^{-7}$	0
$t\bar{t} \to c\bar{c}$	$3.118 \cdot 10^{-6}$	$3.118\cdot10^{-6}$	0	$1.87\cdot 10^{-7}$	$1.87\cdot 10^{-7}$	0

$t\bar{t}  o d\bar{d}$	$4.152 \cdot 10^{-11}$ $4.152 \cdot 10^{-11}$	0	$2.529 \cdot 10^{-12}$ $2.529 \cdot 10^{-12}$	0
$tt \rightarrow aa$		U	$2.529 \cdot 10^{-1}$ $2.529 \cdot 10^{-1}$	0
$t \bar t  o s \bar s$	$1.655 \cdot 10^{-8}$ $1.655 \cdot 10^{-8}$	0	$1.003 \cdot 10^{-9}$ $1.003 \cdot 10^{-9}$	0
$t\bar{t} \to t\bar{t}$	-4.175 $-4.175$	0	$0.1087 \qquad 0.1087$	0
$u\bar{d} \to u\bar{d}$	$-1.421 \cdot 10^{-20}  -1.421 \cdot 10^{-20}$	0	$2.701 \cdot 10^{-22}$ $2.701 \cdot 10^{-22}$	0
$u\bar{u} \to u\bar{u}$	$-9.191 \cdot 10^{-10}  -9.191 \cdot 10^{-10}$	0	$1.227 \cdot 10^{-22}$ $1.227 \cdot 10^{-22}$	0
$zz  o W^+W^-$	7.378 $7.378$	0	$0.4473 \qquad 0.4473$	0
$zz \rightarrow zz$	$0.01972 \qquad 0.01972$	0	$0.001196 \qquad 0.001196$	0

#### 2.14 cHd

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
HH  o z ar b b	$-6.788 \cdot 10^{-7}$	$-6.788 \cdot 10^{-7}$	0	$1.006 \cdot 10^{-5}$	$1.006 \cdot 10^{-5}$	0		
$HH  o zd\bar{d}$	$-2.968 \cdot 10^{-7}$	$-2.968 \cdot 10^{-7}$	0	$2.616 \cdot 10^{-7}$	$2.616 \cdot 10^{-7}$	0		
$Hz  o b ar{b}$	-0.0374	-0.0374	0	0.948	0.948	0		
$Hz \to s\bar{s}$	-0.04259	-0.04259	0	1.045	1.045	0		
$W^+W^- \to Hb\bar{b}$	$-4.389 \cdot 10^{-8}$	$-4.389 \cdot 10^{-8}$	0	$3.9 \cdot 10^{-7}$	$3.9 \cdot 10^{-7}$	0		
$W^+W^-  o H d \bar d$	$-2.966 \cdot 10^{-8}$	$-2.966 \cdot 10^{-8}$	0	$5.052 \cdot 10^{-7}$	$5.052 \cdot 10^{-7}$	0		
$b\bar{b} \to \mu^+ \mu^-$	$5.871 \cdot 10^{-5}$	$5.871 \cdot 10^{-5}$	0	$6.743 \cdot 10^{-6}$	$6.743 \cdot 10^{-6}$	0		
$b\bar{b}  o  u_e \bar{ u}_e$	$-6.917 \cdot 10^{-5}$	$-6.917 \cdot 10^{-5}$	0	$1.411 \cdot 10^{-5}$	$1.411 \cdot 10^{-5}$	0		
$b\bar{b}  o b\bar{b}$	0.02297	0.02297	0	0.004475	0.004475	0		
$b\bar{b}  o d\bar{d}$	$-5.057 \cdot 10^{-5}$	$-5.057 \cdot 10^{-5}$	0	$9.408 \cdot 10^{-6}$	$9.408 \cdot 10^{-6}$	0		
$b\bar{b}  o t\bar{t}$	$-4.457 \cdot 10^{-5}$	$-4.457 \cdot 10^{-5}$	0	$6.935 \cdot 10^{-6}$	$6.935 \cdot 10^{-6}$	0		
$b\bar{b} \to u\bar{u}$	-0.0001124	-0.0001124	0	$5.436 \cdot 10^{-6}$	$5.436 \cdot 10^{-6}$	0		
$d\bar{d} \to c\bar{c}$	$-3.843 \cdot 10^{-5}$	$-3.843 \cdot 10^{-5}$	0	$7.6 \cdot 10^{-6}$	$7.6 \cdot 10^{-6}$	0		
$d\bar{d} \rightarrow e^+e^-$	$5.69 \cdot 10^{-5}$	$5.69 \cdot 10^{-5}$	0	$6.555 \cdot 10^{-6}$	$6.555 \cdot 10^{-6}$	0		
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$-6.425 \cdot 10^{-5}$	$-6.425 \cdot 10^{-5}$	0	$1.311 \cdot 10^{-5}$	$1.311 \cdot 10^{-5}$	0		
$s\bar{s} \to s\bar{s}$	0.1842	0.1842	0	0.2369	0.2369	0		
$t\bar{t}  o d\bar{d}$	$-7.811 \cdot 10^{-5}$	$-7.811 \cdot 10^{-5}$	0	$4.846 \cdot 10^{-6}$	$4.846 \cdot 10^{-6}$	0		

$t\bar{t} \to s\bar{s}$	$-3.41 \cdot 10^{-6}$	$-3.41 \cdot 10^{-6}$	0	$1.04 \cdot 10^{-5}$	$1.04 \cdot 10^{-5}$	0
$u\bar{d} \to u\bar{d}$	-0.003053	-0.003053	0	0.006642	0.006642	0

## **2.15** cHe

		interfer	rence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to ze^+e^-$	$-1.71 \cdot 10^{-7}$	$-1.71 \cdot 10^{-7}$	0	$1.395 \cdot 10^{-7}$	$1.395 \cdot 10^{-7}$	0	
$Hz \to \mu^+\mu^-$	-0.005487	-0.005487	0	0.04488	0.04488	0	
$\mu^+\mu^- \to \tau^+\tau^-$	0.001029	0.001029	0	$3.953 \cdot 10^{-5}$	$3.953 \cdot 10^{-5}$	0	
$b\bar{b} \to \mu^+ \mu^-$	$-5.29 \cdot 10^{-5}$	$-5.29 \cdot 10^{-5}$	0	$8.629 \cdot 10^{-6}$	$8.629 \cdot 10^{-6}$	0	
$c\bar{c} \to \mu^+ \mu^-$	$-2.479 \cdot 10^{-5}$	$-2.479 \cdot 10^{-5}$	0	$2.982 \cdot 10^{-6}$	$2.982 \cdot 10^{-6}$	0	
$d\bar{d} \to e^+e^-$	$-4.242 \cdot 10^{-5}$	$-4.242 \cdot 10^{-5}$	0	$6.486 \cdot 10^{-6}$	$6.486 \cdot 10^{-6}$	0	
$e^+\nu_\mu \to e^+\nu_\mu$	-0.005268	-0.005268	0	0.0003583	0.0003583	0	
$e^+\nu_e \to e^+\nu_e$	-0.002942	-0.002942	0	0.0002001	0.0002001	0	
$e^+\tau^- \to e^+\tau^-$	0.002414	0.002414	0	0.0001541	0.0001541	0	
$e^+e^-  o \mu^+\mu^-$	-0.001375	-0.001375	0	$4.323 \cdot 10^{-5}$	$4.323 \cdot 10^{-5}$	0	
$e^+e^- \rightarrow e^+e^-$	0.002303	0.002303	0	$8.653 \cdot 10^{-5}$	$8.653 \cdot 10^{-5}$	0	
$t\bar{t} \to \tau^+ \tau^-$	$5.546 \cdot 10^{-5}$	$5.546 \cdot 10^{-5}$	0	$7.713 \cdot 10^{-6}$	$7.713 \cdot 10^{-6}$	0	

# 2.16 cHl1

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z \nu_e \bar{\nu}_e$	$-1.554 \cdot 10^{-5}$	$-1.554 \cdot 10^{-5}$	0	$4.591 \cdot 10^{-5}$	$4.591 \cdot 10^{-5}$	0		
$HH \rightarrow ze^+e^-$	$1.121 \cdot 10^{-6}$	$1.121 \cdot 10^{-6}$	0	$4.209 \cdot 10^{-6}$	$4.209 \cdot 10^{-6}$	0		
$Hz \to \mu^+\mu^-$	0.04682	0.04682	0	0.3079	0.3079	0		
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	-0.08899	-0.08899	0	0.3244	0.3244	0		
$\mu^+\mu^- \to \tau^+\tau^-$	-0.0001816	-0.0001816	0	$2.163 \cdot 10^{-5}$	$2.163 \cdot 10^{-5}$	0		

$\nu_{ au} \bar{\nu}_{ au}  ightarrow \nu_{ au} \bar{\nu}_{ au}$	$-0.09604 \qquad -0.09604$	0	$0.005823 \qquad 0.005823$	0
$ u_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$	$-0.002086 \qquad -0.002086$	0	$0.0001265 \qquad 0.0001265$	0
$b\bar{b} \rightarrow \mu^+ \mu^-$	$-1.527 \cdot 10^{-5}  -1.527 \cdot 10^{-5}$	0	$5.021 \cdot 10^{-7}$ $5.021 \cdot 10^{-7}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$-3.839 \cdot 10^{-5}  -3.839 \cdot 10^{-5}$	0	$1.164 \cdot 10^{-6}$ $1.164 \cdot 10^{-6}$	0
$c\bar{c} \to \mu^+ \mu^-$	0.000448 $0.000448$	0	$1.126 \cdot 10^{-5}$ $1.126 \cdot 10^{-5}$	0
$d\bar{d} \rightarrow e^+e^-$	$-1.431 \cdot 10^{-5}  -1.431 \cdot 10^{-5}$	0	$5.071 \cdot 10^{-7}$ $5.071 \cdot 10^{-7}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	-0.0009962  -0.0009962	0	$4.438 \cdot 10^{-5}  4.438 \cdot 10^{-5}$	0
$e^+\nu_e \to e^+\nu_e$	-0.0003412  -0.0003412	0	$7.883 \cdot 10^{-5}$ $7.883 \cdot 10^{-5}$	0
$e^+\tau^- \to e^+\tau^-$	$0.2184 \qquad \qquad 0.2184$	0	0.017   0.017	0
$e^+e^-  o \mu^+\mu^-$	$0.001582 \qquad 0.001582$	0	$5.592 \cdot 10^{-5}$ $5.592 \cdot 10^{-5}$	0
$e^+e^- \rightarrow e^+e^-$	-0.002566 $-0.002566$	0	$8.456 \cdot 10^{-5}$ $8.456 \cdot 10^{-5}$	0
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$-4.517 \cdot 10^{-5}  -4.517 \cdot 10^{-5}$	0	$1.369 \cdot 10^{-6}$ $1.369 \cdot 10^{-6}$	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0002044  -0.0002044	0	$6.197 \cdot 10^{-6}$ $6.197 \cdot 10^{-6}$	0
$t\bar{t} \to \tau^+ \tau^-$	$4.103 \cdot 10^{-5}$ $4.103 \cdot 10^{-5}$	0	$2.327 \cdot 10^{-6}$ $2.327 \cdot 10^{-6}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.0001743  -0.0001743	0	$5.284 \cdot 10^{-6}$ $5.284 \cdot 10^{-6}$	0

## 2.17 cHl3

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
HH  o HH	-0.05126	-0.05126	0	0.003108	0.003108	0		
HH  o HHH	$-1.558 \cdot 10^{-7}$	$-1.558 \cdot 10^{-7}$	0	$1.417 \cdot 10^{-8}$	$1.417 \cdot 10^{-8}$	0		
$HH \to H  au^+  au^-$	$-1.021 \cdot 10^{-9}$	$-1.021 \cdot 10^{-9}$	0	$9.283 \cdot 10^{-11}$	$9.283 \cdot 10^{-11}$	0		
$HH  o Hbar{b}$	$-3.093 \cdot 10^{-9}$	$-3.093 \cdot 10^{-9}$	0	$2.813 \cdot 10^{-10}$	$2.813 \cdot 10^{-10}$	0		
$HH \to Hs\bar{s}$	$-1.281 \cdot 10^{-12}$	$-1.281 \cdot 10^{-12}$	0	$1.164 \cdot 10^{-13}$	$1.164 \cdot 10^{-13}$	0		
$HH \to H t \bar t$	$-5.856 \cdot 10^{-8}$	$-5.856 \cdot 10^{-8}$	0	$5.325 \cdot 10^{-9}$	$5.325 \cdot 10^{-9}$	0		
$HH \to Hu\bar{u}$	$-1.217 \cdot 10^{-16}$	$-1.217 \cdot 10^{-16}$	0	$1.106 \cdot 10^{-17}$	$1.106 \cdot 10^{-17}$	0		
$HH \rightarrow Hzz$	$-3.043 \cdot 10^{-6}$	$-3.043 \cdot 10^{-6}$	0	$2.768 \cdot 10^{-7}$	$2.768 \cdot 10^{-7}$	0		
$HH \to W^+W^-$	-0.05567	-0.05567	0	0.003375	0.003375	0		

$HH \to W^+W^-\gamma$	$-2.808 \cdot 10^{-6}$	$-2.808 \cdot 10^{-6}$	0	$2.553 \cdot 10^{-7}$	$2.553 \cdot 10^{-7}$	0
$HH  o W^+ \bar t b$	$-1.637 \cdot 10^{-5}$	$-1.637 \cdot 10^{-5}$	0	$1.489 \cdot 10^{-6}$	$1.489 \cdot 10^{-6}$	0
$HH \to W^+ e^- \bar{\nu}_e$	$2.106 \cdot 10^{-7}$	$2.106 \cdot 10^{-7}$	0	$6.589 \cdot 10^{-8}$	$6.589 \cdot 10^{-8}$	0
$HH \to W^- u \bar{d}$	$-1.02 \cdot 10^{-7}$	$-1.02 \cdot 10^{-7}$	0	$9.278 \cdot 10^{-9}$	$9.278 \cdot 10^{-9}$	0
$HH \to z\bar{b}b$	$-4.47 \cdot 10^{-7}$	$-4.47 \cdot 10^{-7}$	0	$4.065 \cdot 10^{-8}$	$4.065 \cdot 10^{-8}$	0
$HH \to z \nu_e \bar{\nu}_e$	$3.983 \cdot 10^{-7}$	$3.983 \cdot 10^{-7}$	0	$1.906 \cdot 10^{-7}$	$1.906 \cdot 10^{-7}$	0
$HH  o zc\bar{c}$	$-1.377 \cdot 10^{-7}$	$-1.377 \cdot 10^{-7}$	0	$1.253 \cdot 10^{-8}$	$1.253 \cdot 10^{-8}$	0
$HH \to z d\bar{d}$	$-2.82 \cdot 10^{-8}$	$-2.82 \cdot 10^{-8}$	0	$2.564 \cdot 10^{-9}$	$2.564 \cdot 10^{-9}$	0
$HH \rightarrow ze^+e^-$	$1.647 \cdot 10^{-7}$	$1.647 \cdot 10^{-7}$	0	$1.056 \cdot 10^{-7}$	$1.056 \cdot 10^{-7}$	0
$HH  o zt\bar{t}$	$-5.036 \cdot 10^{-5}$	$-5.036 \cdot 10^{-5}$	0	$4.579 \cdot 10^{-6}$	$4.579 \cdot 10^{-6}$	0
$HH \rightarrow zz$	-1.152	-1.152	0	0.06982	0.06982	0
$HW^+  o \gamma t \bar{b}$	$-2.983 \cdot 10^{-7}$	$-2.983 \cdot 10^{-7}$	0	$2.713 \cdot 10^{-8}$	$2.713 \cdot 10^{-8}$	0
$HW^+ \to \gamma u \bar{d}$	$-9.049 \cdot 10^{-10}$	$-9.049 \cdot 10^{-10}$	0	$8.229 \cdot 10^{-11}$	$8.229 \cdot 10^{-11}$	0
$HW^+ \to u\bar{d}$	-0.003284	-0.003284	0	0.0001991	0.0001991	0
$HW^- \to \bar{t}b$	-0.1171	-0.1171	0	0.007099	0.007099	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$7.371 \cdot 10^{-8}$	$7.371 \cdot 10^{-8}$	0	$1.849 \cdot 10^{-7}$	$1.849 \cdot 10^{-7}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$	0.0826	0.0826	0	0.3825	0.3825	0
$H\gamma  o b\bar{b}$	$-1.85 \cdot 10^{-5}$	$-1.85 \cdot 10^{-5}$	0	$1.122 \cdot 10^{-6}$	$1.122 \cdot 10^{-6}$	0
$H\gamma \to c\bar{c}$	$-9.072 \cdot 10^{-6}$	$-9.072 \cdot 10^{-6}$	0	$5.5 \cdot 10^{-7}$	$5.5\cdot 10^{-7}$	0
$H\gamma \to d\bar{d}$	$-3.228 \cdot 10^{-11}$	$-3.228 \cdot 10^{-11}$	0	$1.957 \cdot 10^{-12}$	$1.957 \cdot 10^{-12}$	0
$H\gamma \to e^+e^-$	$-9.757 \cdot 10^{-13}$	$-9.757 \cdot 10^{-13}$	0	$5.915 \cdot 10^{-14}$	$5.915 \cdot 10^{-14}$	0
$H\gamma \to t\bar{t}$	-0.1273	-0.1273	0	0.00772	0.00772	0
$Hz \to \mu^+\mu^-$	0.006719	0.006719	0	0.04405	0.04405	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.09423	0.09423	0	0.3378	0.3378	0
$Hz \to b\bar{b}$	-0.00239	-0.00239	0	0.0001449	0.0001449	0
$Hz \to s\bar{s}$	-0.003315	-0.003315	0	0.000201	0.000201	0
$Hz \to t\bar{t}$	-0.4538	-0.4538	0	0.02751	0.02751	0
$Hz \to u\bar{u}$	-0.0007892	-0.0007892	0	$4.784 \cdot 10^{-5}$	$4.784 \cdot 10^{-5}$	0
$W^+W^- \to H b \bar b$	$-1.821 \cdot 10^{-6}$	$-1.821 \cdot 10^{-6}$	0	$1.656 \cdot 10^{-7}$	$1.656 \cdot 10^{-7}$	0

$W^+W^- \to Hc\bar{c}$	$-1.576 \cdot 10^{-5}$	$-1.576 \cdot 10^{-5}$	0	$1.433 \cdot 10^{-6}$	$1.433 \cdot 10^{-6}$	0
$W^+W^- \to H d\bar{d}$	$-4.101 \cdot 10^{-6}$	$-4.101 \cdot 10^{-6}$	0	$3.73 \cdot 10^{-7}$	$3.73 \cdot 10^{-7}$	0
$W^+W^- \to H t \bar t$	$-3.604 \cdot 10^{-5}$	$-3.604 \cdot 10^{-5}$	0	$3.277 \cdot 10^{-6}$	$3.277 \cdot 10^{-6}$	0
$W^+W^-  o W^+W^-$	-6.457	-6.457	0	0.3914	0.3914	0
$W^+W^- \to \gamma\gamma$	-0.0257	-0.0257	0	0.001558	0.001558	0
$W^+W^-  o \gamma\gamma\gamma$	$-6.309 \cdot 10^{-7}$	$-6.309 \cdot 10^{-7}$	0	$5.737 \cdot 10^{-8}$	$5.737 \cdot 10^{-8}$	0
$\bar{b}t \to \bar{d}u$	-0.004357	-0.004357	0	0.0002641	0.0002641	0
$\gamma W^+ \to z W^+$	-0.06495	-0.06495	0	0.003937	0.003937	0
$\mu^+\mu^- \to \tau^+\tau^-$	-0.00248	-0.00248	0	0.000226	0.000226	0
$\nu_{ au} \bar{\nu}_{ au}  o \nu_{ au} \bar{\nu}_{ au}$	$-9.448 \cdot 10^{-19}$	$-9.448 \cdot 10^{-19}$	0	$1.204 \cdot 10^{-35}$	$1.204 \cdot 10^{-35}$	0
$ u_e \bar{ u}_e  ightarrow  u_\mu \bar{ u}_\mu$	$1.518 \cdot 10^{-19}$	$1.518 \cdot 10^{-19}$	0	$9.404 \cdot 10^{-37}$	$9.404 \cdot 10^{-37}$	0
$b\bar{b}  o \gamma \gamma$	$-2.427 \cdot 10^{-5}$	$-2.427 \cdot 10^{-5}$	0	$1.471 \cdot 10^{-6}$	$1.471 \cdot 10^{-6}$	0
$b\bar{b} \to \mu^+ \mu^-$	$-7.922 \cdot 10^{-5}$	$-7.922 \cdot 10^{-5}$	0	$4.662 \cdot 10^{-6}$	$4.662 \cdot 10^{-6}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$-4.759 \cdot 10^{-5}$	$-4.759 \cdot 10^{-5}$	0	$1.443 \cdot 10^{-6}$	$1.443 \cdot 10^{-6}$	0
$b\bar{b}  o b\bar{b}$	0.06438	0.06438	0	0.001346	0.001346	0
$b\bar{b}  o d\bar{d}$	-0.0002804	-0.0002804	0	$1.7 \cdot 10^{-5}$	$1.7 \cdot 10^{-5}$	0
$b\bar{b}  o t\bar{t}$	-2.906	-2.906	0	0.2107	0.2107	0
$b\bar{b} \to u\bar{u}$	$-5.703 \cdot 10^{-5}$	$-5.703 \cdot 10^{-5}$	0	$3.458 \cdot 10^{-6}$	$3.458 \cdot 10^{-6}$	0
$b\bar{t} \to e^-\bar{\nu}_e$	-0.0001106	-0.0001106	0	$3.351 \cdot 10^{-6}$	$3.351 \cdot 10^{-6}$	0
$c\bar{c} \to \mu^+ \mu^-$	-0.0004054	-0.0004054	0	$2.091 \cdot 10^{-5}$	$2.091 \cdot 10^{-5}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	-0.0004568	-0.0004568	0	$1.385 \cdot 10^{-5}$	$1.385 \cdot 10^{-5}$	0
$d\bar{d} \to c\bar{c}$	$-5.664 \cdot 10^{-5}$	$-5.664 \cdot 10^{-5}$	0	$3.434 \cdot 10^{-6}$	$3.434 \cdot 10^{-6}$	0
$d\bar{d} \to e^+e^-$	$-9.657 \cdot 10^{-5}$	$-9.657 \cdot 10^{-5}$	0	$4.8 \cdot 10^{-6}$	$4.8 \cdot 10^{-6}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	-0.001403	-0.001403	0	$9.423 \cdot 10^{-5}$	$9.423 \cdot 10^{-5}$	0
$e^+\nu_e \to \mu^+\nu_\mu$	$5.961 \cdot 10^{-19}$	$5.961 \cdot 10^{-19}$	0	$6.771 \cdot 10^{-36}$	$6.771 \cdot 10^{-36}$	0
$e^+\nu_e \to e^+\nu_e$	-0.0005447	-0.0005447	0	$4.678 \cdot 10^{-5}$	$4.678 \cdot 10^{-5}$	0
$e^+\tau^- \to e^+\tau^-$	-0.01138	-0.01138	0	0.0008985	0.0008985	0
$e^+e^- \rightarrow \mu^+\mu^-$	-0.004358	-0.004358	0	0.0002134	0.0002134	0
$e^+e^- \rightarrow e^+e^-$	-0.00557	-0.00557	0	0.0005059	0.0005059	0

$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	-0.00043	-0.00043	0	$1.303 \cdot 10^{-5}$	$1.303 \cdot 10^{-5}$	0
$s\bar{s} \to s\bar{s}$	0.04244	0.04244	0	0.0006374	0.0006374	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0001133	-0.0001133	0	$3.433 \cdot 10^{-6}$	$3.433 \cdot 10^{-6}$	0
$t\bar{t} \to \tau^+ \tau^-$	-0.0002433	-0.0002433	0	$1.8 \cdot 10^{-5}$	$1.8 \cdot 10^{-5}$	0
$t\bar{t} \to c\bar{c}$	-0.0005156	-0.0005156	0	$3.126 \cdot 10^{-5}$	$3.126 \cdot 10^{-5}$	0
$t\bar{t}  o d\bar{d}$	-0.0001796	-0.0001796	0	$1.089 \cdot 10^{-5}$	$1.089 \cdot 10^{-5}$	0
$t\bar{t} \to s\bar{s}$	-0.0002301	-0.0002301	0	$1.395 \cdot 10^{-5}$	$1.395 \cdot 10^{-5}$	0
$t\bar{t} \to t\bar{t}$	0.09322	0.09322	0	0.01414	0.01414	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-2.465 \cdot 10^{-5}$	$-2.465 \cdot 10^{-5}$	0	$7.471 \cdot 10^{-7}$	$7.471 \cdot 10^{-7}$	0
$u\bar{d} \to c\bar{s}$	-0.003992	-0.003992	0	0.000242	0.000242	0
$u\bar{d} \to u\bar{d}$	-0.006713	-0.006713	0	0.02269	0.02269	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.0001621	-0.0001621	0	$4.913 \cdot 10^{-6}$	$4.913 \cdot 10^{-6}$	0
$u\bar{u} \to u\bar{u}$	0.05843	0.05843	0	0.0008762	0.0008762	0
$zz \to W^+W^-$	-7.863	-7.863	0	0.4767	0.4767	0
$zz \to zz$	-0.01979	-0.01979	0	0.0012	0.0012	0

# 2.18 cHq1

		interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to z\bar{b}b$	$4.057\cdot10^{-6}$	$4.057 \cdot 10^{-6}$	0	$1.006 \cdot 10^{-5}$	$1.006 \cdot 10^{-5}$	0	
$HH \to zc\bar{c}$	$-3.701 \cdot 10^{-6}$	$-3.701 \cdot 10^{-6}$	0	$1.143 \cdot 10^{-5}$	$1.143 \cdot 10^{-5}$	0	
$HH \to z d\bar{d}$	$1.712 \cdot 10^{-6}$	$1.712 \cdot 10^{-6}$	0	$2.632 \cdot 10^{-7}$	$2.632 \cdot 10^{-7}$	0	
$HH \to zt\bar{t}$	0.0001143	0.0001143	0	0.0001044	0.0001044	0	
$Hz \to b\bar{b}$	0.2202	0.2202	0	0.948	0.948	0	
$Hz \to s\bar{s}$	0.2441	0.2441	0	1.045	1.045	0	
$Hz \to t\bar{t}$	2.083	2.083	0	1.475	1.475	0	
$Hz \to u\bar{u}$	-0.07404	-0.07404	0	0.384	0.384	0	
$W^+W^- \to H b \bar b$	$2.869 \cdot 10^{-6}$	$2.869 \cdot 10^{-6}$	0	$3.909 \cdot 10^{-7}$	$3.909 \cdot 10^{-7}$	0	

$W^+W^- \to H c \bar c$	$-6.691 \cdot 10^{-7}$	$-6.691 \cdot 10^{-7}$	0	$6.524 \cdot 10^{-7}$	$6.524 \cdot 10^{-7}$	0
$W^+W^-  o H d \bar d$	$3.695 \cdot 10^{-7}$	$3.695 \cdot 10^{-7}$	0	$5.059 \cdot 10^{-7}$	$5.059 \cdot 10^{-7}$	0
$W^+W^-  o H t \bar t$	$-9.67 \cdot 10^{-6}$	$-9.67 \cdot 10^{-6}$	0	$9.57 \cdot 10^{-7}$	$9.57 \cdot 10^{-7}$	0
$b\bar{b} \to \mu^+ \mu^-$	$4.885 \cdot 10^{-5}$	$4.885 \cdot 10^{-5}$	0	$4.365 \cdot 10^{-6}$	$4.365 \cdot 10^{-6}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$3.302 \cdot 10^{-5}$	$3.302 \cdot 10^{-5}$	0	$1.176 \cdot 10^{-6}$	$1.176 \cdot 10^{-6}$	0
$b\bar{b}  o b\bar{b}$	-0.09315	-0.09315	0	0.005922	0.005922	0
$b\bar{b} \to d\bar{d}$	0.001836	0.001836	0	0.0001183	0.0001183	0
$b\bar{b} \to t\bar{t}$	-0.0006909	-0.0006909	0	$1.879 \cdot 10^{-6}$	$1.879 \cdot 10^{-6}$	0
$b\bar{b} \to u\bar{u}$	-0.000215	-0.000215	0	$1.352 \cdot 10^{-6}$	$1.352 \cdot 10^{-6}$	0
$c\bar{c} \to \mu^+ \mu^-$	-0.0003533	-0.0003533	0	$7.005 \cdot 10^{-6}$	$7.005 \cdot 10^{-6}$	0
$d\bar{d} \to c\bar{c}$	$-8.313 \cdot 10^{-5}$	$-8.313 \cdot 10^{-5}$	0	$1.759 \cdot 10^{-6}$	$1.759 \cdot 10^{-6}$	0
$d\bar{d} \to e^+e^-$	$4.779 \cdot 10^{-5}$	$4.779 \cdot 10^{-5}$	0	$4.247 \cdot 10^{-6}$	$4.247 \cdot 10^{-6}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$4.185 \cdot 10^{-5}$	$4.185 \cdot 10^{-5}$	0	$1.49 \cdot 10^{-6}$	$1.49 \cdot 10^{-6}$	0
$s\bar{s} \to s\bar{s}$	4.815	4.815	0	0.4369	0.4369	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0002895	-0.0002895	0	$1.278 \cdot 10^{-5}$	$1.278 \cdot 10^{-5}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-3.244 \cdot 10^{-5}$	$-3.244 \cdot 10^{-5}$	0	$3.034 \cdot 10^{-6}$	$3.034 \cdot 10^{-6}$	0
$t\bar{t} \to c\bar{c}$	-0.002353	-0.002353	0	0.0001246	0.0001246	0
$t\bar{t} \to d\bar{d}$	-0.0001808	-0.0001808	0	$1.574 \cdot 10^{-6}$	$1.574 \cdot 10^{-6}$	0
$t\bar{t} \to s\bar{s}$	$-5.327 \cdot 10^{-5}$	$-5.327 \cdot 10^{-5}$	0	$2.747 \cdot 10^{-6}$	$2.747 \cdot 10^{-6}$	0
$t\bar{t} \to t\bar{t}$	-24.01	-24.01	0	2.405	2.405	0
$u\bar{d} \to u\bar{d}$	-0.02707	-0.02707	0	0.001508	0.001508	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.0002368	-0.0002368	0	$1.021 \cdot 10^{-5}$	$1.021 \cdot 10^{-5}$	0
$u\bar{u} \to u\bar{u}$	-3.675	-3.675	0	0.294	0.294	0

## 2.19 cHq3

$HH \to W^- u \bar{d}$	$1.937 \cdot 10^{-6}$	$1.937 \cdot 10^{-6}$	0	$3.345 \cdot 10^{-6}$	$3.345 \cdot 10^{-6}$	0
$HH  o z \bar{b} b$	$6.931 \cdot 10^{-6}$	$6.931 \cdot 10^{-6}$	0	$1.012 \cdot 10^{-5}$	$1.012 \cdot 10^{-5}$	0
$HH \to z c \bar c$	$5.07 \cdot 10^{-6}$	$5.07 \cdot 10^{-6}$	0	$2 \cdot 10^{-5}$	$2\cdot 10^{-5}$	0
$HH \to z d\bar{d}$	$3.589 \cdot 10^{-7}$	$3.589 \cdot 10^{-7}$	0	$4.28 \cdot 10^{-7}$	$4.28 \cdot 10^{-7}$	0
HH  o zt ar t	$-7.334 \cdot 10^{-5}$	$-7.334 \cdot 10^{-5}$	0	$6.661 \cdot 10^{-5}$	$6.661 \cdot 10^{-5}$	0
$HW^+  o \gamma t \bar{b}$	$-1.214 \cdot 10^{-7}$	$-1.214 \cdot 10^{-7}$	0	$1.961 \cdot 10^{-7}$	$1.961 \cdot 10^{-7}$	0
$HW^+  o \gamma u \bar{d}$	$4.566 \cdot 10^{-8}$	$4.566 \cdot 10^{-8}$	0	$2.302 \cdot 10^{-7}$	$2.302 \cdot 10^{-7}$	0
$HW^+  o u ar{d}$	0.2541	0.2541	0	1.192	1.192	0
$HW^-  o \bar{t}b$	-1.429	-1.429	0	1.956	1.956	0
$Hz  o b\bar{b}$	0.1619	0.1619	0	0.6983	0.6983	0
$Hz \to s\bar{s}$	0.2272	0.2272	0	0.9728	0.9728	0
$Hz \to t\bar{t}$	-2.084	-2.084	0	1.438	1.438	0
$Hz \to u\bar{u}$	0.05728	0.05728	0	0.2971	0.2971	0
$W^+W^-  o Hb\bar{b}$	$-4.627 \cdot 10^{-6}$	$-4.627 \cdot 10^{-6}$	0	$1.327 \cdot 10^{-6}$	$1.327 \cdot 10^{-6}$	0
$W^+W^- \to H c \bar c$	$8.664 \cdot 10^{-6}$	$8.664 \cdot 10^{-6}$	0	$1.461 \cdot 10^{-6}$	$1.461 \cdot 10^{-6}$	0
$W^+W^-  o H d \bar d$	$-2.991 \cdot 10^{-6}$	$-2.991 \cdot 10^{-6}$	0	$1.526 \cdot 10^{-6}$	$1.526 \cdot 10^{-6}$	0
$W^+W^-  o H t \bar t$	$-1.261 \cdot 10^{-6}$	$-1.261 \cdot 10^{-6}$	0	$1.167 \cdot 10^{-5}$	$1.167\cdot10^{-5}$	0
$\bar{b}t \to \bar{d}u$	0.004357	0.004357	0	0.0002641	0.0002641	0
$b\bar{b}  o \mu^+\mu^-$	$5.132 \cdot 10^{-5}$	$5.132 \cdot 10^{-5}$	0	$2.955 \cdot 10^{-6}$	$2.955 \cdot 10^{-6}$	0
$b\bar{b} \to \nu_e \bar{\nu}_e$	$4.496 \cdot 10^{-5}$	$4.496 \cdot 10^{-5}$	0	$1.601 \cdot 10^{-6}$	$1.601 \cdot 10^{-6}$	0
$b\bar{b}  o b\bar{b}$	-0.0582	-0.0582	0	0.001509	0.001509	0
$b\bar{b} \to d\bar{d}$	0.0002986	0.0002986	0	$1.966 \cdot 10^{-5}$	$1.966 \cdot 10^{-5}$	0
$b\bar{b} \to t\bar{t}$	2.906	2.906	0	0.2108	0.2108	0
$b\bar{b} \to u\bar{u}$	$5.229 \cdot 10^{-5}$	$5.229 \cdot 10^{-5}$	0	$7.431 \cdot 10^{-6}$	$7.431 \cdot 10^{-6}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	0.0001106	0.0001106	0	$3.351 \cdot 10^{-6}$	$3.351 \cdot 10^{-6}$	0
$c\bar{c} \to \mu^+ \mu^-$	$9.914 \cdot 10^{-5}$	$9.914 \cdot 10^{-5}$	0	$3.116 \cdot 10^{-6}$	$3.116 \cdot 10^{-6}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0.0004568	0.0004568	0	$1.385 \cdot 10^{-5}$	$1.385 \cdot 10^{-5}$	0
$d\bar{d} \to c\bar{c}$	$5.188 \cdot 10^{-5}$	$5.188 \cdot 10^{-5}$	0	$7.451 \cdot 10^{-6}$	$7.451 \cdot 10^{-6}$	0
$d\bar{d} \to e^+e^-$	$6.428 \cdot 10^{-5}$	$6.428 \cdot 10^{-5}$	0	$2.828 \cdot 10^{-6}$	$2.828 \cdot 10^{-6}$	0

$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.0005047	0.0005047	0	$1.797 \cdot 10^{-5}$	$1.797 \cdot 10^{-5}$	0
$s\bar{s} \to s\bar{s}$	-0.03891	-0.03891	0	0.0007186	0.0007186	0
$t\bar{t} \to \nu_{\mu}\bar{\nu}_{\mu}$	0.0001433	0.0001433	0	$6.477 \cdot 10^{-6}$	$6.477 \cdot 10^{-6}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-2.008 \cdot 10^{-5}$	$-2.008 \cdot 10^{-5}$	0	$3.504 \cdot 10^{-6}$	$3.504 \cdot 10^{-6}$	0
$t\bar{t} \to c\bar{c}$	0.0002347	0.0002347	0	$2.075 \cdot 10^{-5}$	$2.075 \cdot 10^{-5}$	0
$t\bar{t} \to d\bar{d}$	0.0001613	0.0001613	0	$1.274 \cdot 10^{-5}$	$1.274 \cdot 10^{-5}$	0
$t\bar{t} \to s\bar{s}$	0.0002103	0.0002103	0	$1.555 \cdot 10^{-5}$	$1.555 \cdot 10^{-5}$	0
$t\bar{t} \to t\bar{t}$	-0.04311	-0.04311	0	0.008564	0.008564	0
$u\bar{d} \to \mu^+ \nu_\mu$	$2.465 \cdot 10^{-5}$	$2.465 \cdot 10^{-5}$	0	$7.471 \cdot 10^{-7}$	$7.471 \cdot 10^{-7}$	0
$u\bar{d} \to c\bar{s}$	0.003992	0.003992	0	0.000242	0.000242	0
$u\bar{d} \to u\bar{d}$	-0.01526	-0.01526	0	0.0223	0.0223	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.0002175	0.0002175	0	$9.38 \cdot 10^{-6}$	$9.38 \cdot 10^{-6}$	0
$u\bar{u} \to u\bar{u}$	-0.0345	-0.0345	0	0.0006047	0.0006047	0

## 2.20 cHu

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to zc\bar{c}$	$1.563 \cdot 10^{-6}$	$1.563 \cdot 10^{-6}$	0	$1.143 \cdot 10^{-5}$	$1.143 \cdot 10^{-5}$	0		
$HH \to z t \bar{t}$	-0.000123	-0.000123	0	0.0001043	0.0001043	0		
$Hz \to t\bar{t}$	-2.243	-2.243	0	1.475	1.475	0		
$Hz \to u\bar{u}$	0.0313	0.0313	0	0.384	0.384	0		
$W^+W^-  o H c \bar c$	$6.976 \cdot 10^{-8}$	$6.976 \cdot 10^{-8}$	0	$6.523 \cdot 10^{-7}$	$6.523 \cdot 10^{-7}$	0		
$W^+W^-  o Ht\bar{t}$	$1.214 \cdot 10^{-5}$	$1.214 \cdot 10^{-5}$	0	$9.608 \cdot 10^{-7}$	$9.608 \cdot 10^{-7}$	0		
$b\bar{b}  o t\bar{t}$	-0.0009991	-0.0009991	0	$8.256 \cdot 10^{-6}$	$8.256 \cdot 10^{-6}$	0		
$b\bar{b} \to u\bar{u}$	$5.8 \cdot 10^{-5}$	$5.8 \cdot 10^{-5}$	0	$1.681 \cdot 10^{-6}$	$1.681 \cdot 10^{-6}$	0		
$c\bar{c} \to \mu^+ \mu^-$	0.0001979	0.0001979	0	$4.53 \cdot 10^{-6}$	$4.53 \cdot 10^{-6}$	0		
$d\bar{d} \to c\bar{c}$	$5.54 \cdot 10^{-5}$	$5.54 \cdot 10^{-5}$	0	$8.343 \cdot 10^{-6}$	$8.343 \cdot 10^{-6}$	0		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$3.288 \cdot 10^{-6}$	$3.288 \cdot 10^{-6}$	0	$1.99 \cdot 10^{-6}$	$1.99 \cdot 10^{-6}$	0		
$t\bar{t} \rightarrow \tau^+ \tau^-$	$-2.985 \cdot 10^{-5}$	$-2.985 \cdot 10^{-5}$	0	$3.705 \cdot 10^{-6}$	$3.705 \cdot 10^{-6}$	0		

$t\bar{t} \to c\bar{c}$	0.0004398	0.0004398	0	$2.139 \cdot 10^{-5}$	$2.139 \cdot 10^{-5}$	0
$t\bar{t} \to d\bar{d}$	$1.044 \cdot 10^{-5}$	$1.044 \cdot 10^{-5}$	0	$3.367 \cdot 10^{-6}$	$3.367 \cdot 10^{-6}$	0
$t\bar{t} \to s\bar{s}$	$2.871 \cdot 10^{-5}$	$2.871 \cdot 10^{-5}$	0	$1.466 \cdot 10^{-5}$	$1.466 \cdot 10^{-5}$	0
$t\bar{t}  o t\bar{t}$	-32.96	-32.96	0	1.537	1.537	0
$u\bar{d} \to u\bar{d}$	0.03702	0.03702	0	0.008662	0.008662	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$2.654 \cdot 10^{-5}$	$2.654 \cdot 10^{-5}$	0	$2.707 \cdot 10^{-6}$	$2.707 \cdot 10^{-6}$	0
$u\bar{u} \to u\bar{u}$	-1.071	-1.071	0	0.1883	0.1883	0

#### 2.21 cHudIm

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^+ \bar{t} b$	$1.047 \cdot 10^{-9}$	$1.047 \cdot 10^{-9}$	$3.343 \cdot 10^{-5}$	$1.642 \cdot 10^{-8}$	$1.642 \cdot 10^{-8}$	$6.688 \cdot 10^{-5}$		
$HH \to W^- u \bar{d}$	$-1.74 \cdot 10^{-25}$	$-1.74 \cdot 10^{-25}$	0	$9.261 \cdot 10^{-26}$	$9.261 \cdot 10^{-26}$	0		
$HW^+ \to \gamma t \bar{b}$	$2.724 \cdot 10^{-11}$	$2.724 \cdot 10^{-11}$	$3.345 \cdot 10^{-5}$	$2.783 \cdot 10^{-11}$	$2.783 \cdot 10^{-11}$	$6.691 \cdot 10^{-5}$		
$HW^+ \to \gamma u \bar{d}$	$8.657 \cdot 10^{-27}$	$8.657 \cdot 10^{-27}$	0	$6.378 \cdot 10^{-27}$	$6.378 \cdot 10^{-27}$	0		
$HW^+ \to u\bar{d}$	$3.762 \cdot 10^{-23}$	$3.762 \cdot 10^{-23}$	0	$3.3 \cdot 10^{-20}$	$3.3 \cdot 10^{-20}$	0		
$HW^-  o \bar{t}b$	$-1.881 \cdot 10^{-7}$	$-1.881 \cdot 10^{-7}$	$3.344 \cdot 10^{-5}$	0.0002775	0.0002775	$6.691 \cdot 10^{-5}$		
$W^+W^- \to H b \bar b$	$4.206 \cdot 10^{-10}$	$4.206 \cdot 10^{-10}$	$3.345 \cdot 10^{-5}$	$2.428 \cdot 10^{-10}$	$2.428 \cdot 10^{-10}$	$6.687 \cdot 10^{-5}$		
$W^+W^-  o Hc\bar{c}$	$-7.85 \cdot 10^{-18}$	$-7.85 \cdot 10^{-18}$	0	$4.96 \cdot 10^{-24}$	$4.96 \cdot 10^{-24}$	0		
$W^+W^- \to H d\bar{d}$	$-8.01 \cdot 10^{-25}$	$-8.01 \cdot 10^{-25}$	0	$3.294 \cdot 10^{-35}$	$3.294 \cdot 10^{-35}$	0		
$W^+W^-  o H t \bar t$	$1.081 \cdot 10^{-9}$	$1.081 \cdot 10^{-9}$	$3.349 \cdot 10^{-5}$	$7.031 \cdot 10^{-13}$	$7.031 \cdot 10^{-13}$	$6.69 \cdot 10^{-5}$		
$\bar{b}t \to \bar{d}u$	$-2.018 \cdot 10^{-23}$	$-5.017 \cdot 10^{-24}$	0.7514	$3.654 \cdot 10^{-9}$	$3.654 \cdot 10^{-9}$	$6.691 \cdot 10^{-5}$		
$b\bar{b} \to t\bar{t}$	$-8.054 \cdot 10^{-22}$	$-1.204 \cdot 10^{-21}$	-0.4949	$1.607 \cdot 10^{-5}$	$1.607 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$		
$b\bar{t} \to e^- \bar{\nu}_e$	$-1.342 \cdot 10^{-23}$	$-8.698 \cdot 10^{-24}$	0.3521	$4.756 \cdot 10^{-9}$	$4.756 \cdot 10^{-9}$	$6.69 \cdot 10^{-5}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$1.567 \cdot 10^{-31}$	$1.567 \cdot 10^{-31}$	0	$5.45 \cdot 10^{-17}$	$5.45 \cdot 10^{-17}$	0		
$u\bar{d} \to \mu^+ \nu_\mu$	$-4.732 \cdot 10^{-40}$	$-4.732 \cdot 10^{-40}$	0	$1.223 \cdot 10^{-24}$	$1.223 \cdot 10^{-24}$	0		
$u\bar{d} \to c\bar{s}$	$-2.739 \cdot 10^{-32}$	$-2.739 \cdot 10^{-32}$	0	$1.038 \cdot 10^{-16}$	$1.038 \cdot 10^{-16}$	0		
$u\bar{d} \to u\bar{d}$	$4\cdot 10^{-36}$	$4 \cdot 10^{-36}$	$-2.998 \cdot 10^{-5}$	$5.857 \cdot 10^{-26}$	$5.857 \cdot 10^{-26}$	0		

## 2.22 cHudRe

		nce		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to W^+ \bar{t} b$	$-3.087 \cdot 10^{-8}$	$-3.087 \cdot 10^{-8}$	$3.343 \cdot 10^{-5}$	$4.983 \cdot 10^{-9}$	$4.983 \cdot 10^{-9}$	$6.689 \cdot 10^{-5}$	
$HH \to W^- u \bar{d}$	$-4.295 \cdot 10^{-24}$	$-4.295 \cdot 10^{-24}$	0	$2.781 \cdot 10^{-25}$	$2.781 \cdot 10^{-25}$	0	
$HW^+  o \gamma t \bar{b}$	$-1.179 \cdot 10^{-8}$	$-1.179 \cdot 10^{-8}$	$3.35 \cdot 10^{-5}$	$2.519 \cdot 10^{-10}$	$2.519 \cdot 10^{-10}$	$6.689 \cdot 10^{-5}$	
$HW^+ \to \gamma u \bar{d}$	$-4.785 \cdot 10^{-24}$	$-4.785 \cdot 10^{-24}$	0	$1.063 \cdot 10^{-25}$	$1.063 \cdot 10^{-25}$	0	
$HW^+ \to u\bar{d}$	$-2.346 \cdot 10^{-19}$	$-2.346 \cdot 10^{-19}$	0	$3.188 \cdot 10^{-20}$	$3.188 \cdot 10^{-20}$	0	
$HW^- \to \bar{t}b$	-0.001116	-0.001116	$3.35 \cdot 10^{-5}$	0.0002661	0.0002661	$6.692 \cdot 10^{-5}$	
$W^+W^-  o Hbar b$	$-7.859 \cdot 10^{-10}$	$-7.858 \cdot 10^{-10}$	$3.345 \cdot 10^{-5}$	$1.752 \cdot 10^{-10}$	$1.752 \cdot 10^{-10}$	$6.691 \cdot 10^{-5}$	
$W^+W^- \to H c \bar{c}$	$-3.96 \cdot 10^{-18}$	$-3.96 \cdot 10^{-18}$	0	$9.051 \cdot 10^{-25}$	$9.051 \cdot 10^{-25}$	0	
$W^+W^-  o H d \bar d$	$-1.372 \cdot 10^{-26}$	$-1.372 \cdot 10^{-26}$	0	$3.839 \cdot 10^{-36}$	$3.839 \cdot 10^{-36}$	0	
$W^+W^- \to H t \bar t$	$-1.771 \cdot 10^{-8}$	$-1.771 \cdot 10^{-8}$	$3.342 \cdot 10^{-5}$	$1.826 \cdot 10^{-12}$	$1.825 \cdot 10^{-12}$	$6.694 \cdot 10^{-5}$	
$\bar{b}t \to \bar{d}u$	$-4.802 \cdot 10^{-8}$	$-4.802 \cdot 10^{-8}$	$3.344 \cdot 10^{-5}$	$4.744 \cdot 10^{-9}$	$4.744 \cdot 10^{-9}$	$6.69 \cdot 10^{-5}$	
$b\bar{b} \to t\bar{t}$	$1.494 \cdot 10^{-5}$	$1.494 \cdot 10^{-5}$	$3.341 \cdot 10^{-5}$	$7.045 \cdot 10^{-7}$	$7.044 \cdot 10^{-7}$	$6.691 \cdot 10^{-5}$	
$b\bar{t} \to e^- \bar{\nu}_e$	$-1.601 \cdot 10^{-8}$	$-1.601 \cdot 10^{-8}$	$3.342 \cdot 10^{-5}$	$3.125 \cdot 10^{-10}$	$3.125 \cdot 10^{-10}$	$6.69 \cdot 10^{-5}$	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-4.122 \cdot 10^{-16}$	$-4.122 \cdot 10^{-16}$	0	$2.081 \cdot 10^{-17}$	$2.081 \cdot 10^{-17}$	0	
$u\bar{d} \to \mu^+ \nu_\mu$	$-3.123 \cdot 10^{-24}$	$-3.123 \cdot 10^{-24}$	0	$9.246 \cdot 10^{-25}$	$9.246 \cdot 10^{-25}$	0	
$u\bar{d} \to c\bar{s}$	$-1.285 \cdot 10^{-15}$	$-1.285 \cdot 10^{-15}$	0	$3.543 \cdot 10^{-16}$	$3.543 \cdot 10^{-16}$	0	
$u\bar{d} \to u\bar{d}$	$-1.263 \cdot 10^{-19}$	$-1.263 \cdot 10^{-19}$	0	$4.429 \cdot 10^{-26}$	$4.429 \cdot 10^{-26}$	0	

## 2.23 cW

		interfer	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o W^+W^-\gamma$	$-4.121 \cdot 10^{-6}$	$-4.121 \cdot 10^{-6}$	0	$3.396 \cdot 10^{-6}$	$3.396 \cdot 10^{-6}$	0	
$HW^+ \to \gamma t \bar{b}$	$4.146 \cdot 10^{-7}$	$4.146 \cdot 10^{-7}$	0	$1.134 \cdot 10^{-6}$	$1.134 \cdot 10^{-6}$	0	
$HW^+ \rightarrow \gamma u \bar{d}$	$3.981 \cdot 10^{-9}$	$3.981 \cdot 10^{-9}$	0	$4.691 \cdot 10^{-9}$	$4.691 \cdot 10^{-9}$	0	

$HW^- \to \gamma e^- \bar{\nu}_e$	$6.63 \cdot 10^{-9}$	$6.63 \cdot 10^{-9}$	0	$9.342 \cdot 10^{-9}$	$9.342 \cdot 10^{-9}$	0
$W^+W^-  o Hb\bar{b}$	$-6.173 \cdot 10^{-7}$	$-6.173 \cdot 10^{-7}$	0	$9.196 \cdot 10^{-7}$	$9.196 \cdot 10^{-7}$	0
$W^+W^- \to Hc\bar{c}$	$-6.215 \cdot 10^{-6}$	$-6.215 \cdot 10^{-6}$	0	$1.109 \cdot 10^{-5}$	$1.109 \cdot 10^{-5}$	0
$W^+W^-  o H d\bar{d}$	$-4.414 \cdot 10^{-6}$	$-4.414 \cdot 10^{-6}$	0	$3.966 \cdot 10^{-6}$	$3.966 \cdot 10^{-6}$	0
$W^+W^- \to H t \bar t$	$-4.344 \cdot 10^{-7}$	$-4.344 \cdot 10^{-7}$	0	$6.49 \cdot 10^{-6}$	$6.49 \cdot 10^{-6}$	0
$W^+W^-  o W^+W^-$	0.1102	0.1102	0	7.826	7.826	0
$W^+W^- \to \gamma\gamma$	0.0006865	0.0006865	0	0.6621	0.6621	0
$W^+W^-  o \gamma\gamma\gamma$	$2.025 \cdot 10^{-7}$	$2.025 \cdot 10^{-7}$	0	$5.51 \cdot 10^{-6}$	$5.51 \cdot 10^{-6}$	0
$\gamma W^+ \to z W^+$	0.007252	0.007252	0	0.8048	0.8048	0
$zz \to W^+W^-$	-0.02809	-0.02809	0	16.08	16.08	0

## 2.24 cWtil

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH  o W^+W^-\gamma$	$-7.579 \cdot 10^{-6}$	$-7.579 \cdot 10^{-6}$	0	$3.396 \cdot 10^{-6}$	$3.396 \cdot 10^{-6}$	0
$HW^+ \to \gamma t \bar{b}$	$1.304 \cdot 10^{-7}$	$1.304 \cdot 10^{-7}$	0	$1.134 \cdot 10^{-6}$	$1.134 \cdot 10^{-6}$	0
$HW^+ \to \gamma u \bar{d}$	$1.162 \cdot 10^{-9}$	$1.162 \cdot 10^{-9}$	0	$4.691 \cdot 10^{-9}$	$4.691 \cdot 10^{-9}$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$6.962 \cdot 10^{-10}$	$6.962 \cdot 10^{-10}$	0	$9.342 \cdot 10^{-9}$	$9.342 \cdot 10^{-9}$	0
$W^+W^- \to Hb\bar{b}$	$-4.329 \cdot 10^{-7}$	$-4.329 \cdot 10^{-7}$	0	$9.209 \cdot 10^{-7}$	$9.209 \cdot 10^{-7}$	0
$W^+W^- \to Hc\bar{c}$	$-9.605 \cdot 10^{-6}$	$-9.605 \cdot 10^{-6}$	0	$1.11 \cdot 10^{-5}$	$1.11 \cdot 10^{-5}$	0
$W^+W^- \to H d\bar{d}$	$4.852 \cdot 10^{-6}$	$4.852 \cdot 10^{-6}$	0	$3.972 \cdot 10^{-6}$	$3.972 \cdot 10^{-6}$	0
$W^+W^- \to H t \bar t$	$4.705 \cdot 10^{-6}$	$4.705 \cdot 10^{-6}$	0	$6.491 \cdot 10^{-6}$	$6.491 \cdot 10^{-6}$	0
$W^+W^- \to W^+W^-$	$-1.051 \cdot 10^{-13}$	$1.939 \cdot 10^{-14}$	1.185	7.827	7.827	0
$W^+W^- \to \gamma\gamma$	$3.699 \cdot 10^{-18}$	$3.7 \cdot 10^{-18}$	-0.0003053	0.6621	0.6621	0
$W^+W^- \to \gamma\gamma\gamma$	$-2.181 \cdot 10^{-7}$	$-2.181 \cdot 10^{-7}$	0	$5.509 \cdot 10^{-6}$	$5.509 \cdot 10^{-6}$	0
$\gamma W^+ \to z W^+$	$2.817 \cdot 10^{-14}$	$1.877 \cdot 10^{-14}$	0.3339	0.805	0.805	0
$zz  o W^+W^-$	$-2.77 \cdot 10^{-13}$	$-2.765 \cdot 10^{-13}$	0.001804	16.08	16.08	0

## 2.25 cdBIm

		interfere	nce		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z\bar{b}b$	$-6.786 \cdot 10^{-11}$	$-6.786 \cdot 10^{-11}$	$3.336 \cdot 10^{-5}$	$4.087 \cdot 10^{-10}$	$4.087 \cdot 10^{-10}$	$6.675 \cdot 10^{-5}$		
$HH \to z d\bar{d}$	$1.733 \cdot 10^{-15}$	$1.733 \cdot 10^{-15}$	0	$4.993 \cdot 10^{-16}$	$4.993 \cdot 10^{-16}$	0		
$HW^+  o \gamma t \bar{b}$	$7.753 \cdot 10^{-9}$	$7.753 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$3.131 \cdot 10^{-9}$	$3.131 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$		
$HW^+ \to \gamma u \bar{d}$	$2.234 \cdot 10^{-17}$	$2.234 \cdot 10^{-17}$	0	$1.794 \cdot 10^{-16}$	$1.794 \cdot 10^{-16}$	0		
$H\gamma  o b\bar{b}$	$-7.14 \cdot 10^{-21}$	$-7.14 \cdot 10^{-21}$	$3.333 \cdot 10^{-5}$	0.001257	0.001257	$6.672 \cdot 10^{-5}$		
$H\gamma \to d\bar{d}$	$5.369 \cdot 10^{-28}$	$5.369 \cdot 10^{-28}$	0	$6.061 \cdot 10^{-11}$	$6.061 \cdot 10^{-11}$	0		
$Hz \to b\bar{b}$	$-2.863 \cdot 10^{-8}$	$-2.863 \cdot 10^{-8}$	$3.336 \cdot 10^{-5}$	0.0002384	0.0002384	$6.672 \cdot 10^{-5}$		
$Hz \to s\bar{s}$	$-3.308 \cdot 10^{-12}$	$-3.308 \cdot 10^{-12}$	0	$1.308 \cdot 10^{-7}$	$1.308 \cdot 10^{-7}$	0		
$W^+W^-  o Hb\bar b$	$1.625 \cdot 10^{-13}$	$1.625 \cdot 10^{-13}$	$3.335 \cdot 10^{-5}$	$1.921 \cdot 10^{-12}$	$1.921 \cdot 10^{-12}$	$6.675 \cdot 10^{-5}$		
$W^+W^- \to H d\bar{d}$	$1.778 \cdot 10^{-18}$	$1.778 \cdot 10^{-18}$	0	$4.522 \cdot 10^{-18}$	$4.522 \cdot 10^{-18}$	0		
$b\bar{b} \to \gamma \gamma$	$-4.643 \cdot 10^{-24}$	$9.577 \cdot 10^{-25}$	1.206	$1.147 \cdot 10^{-6}$	$1.147 \cdot 10^{-6}$	$6.67 \cdot 10^{-5}$		
$b\bar{b} \to \mu^+ \mu^-$	$-4.976 \cdot 10^{-25}$	$-4.969 \cdot 10^{-25}$	0.001443	$2.249 \cdot 10^{-7}$	$2.248 \cdot 10^{-7}$	$6.671 \cdot 10^{-5}$		
$b\bar{b} \to \nu_e \bar{\nu}_e$	$5.323 \cdot 10^{-23}$	$5.323 \cdot 10^{-23}$	0	$2.517 \cdot 10^{-7}$	$2.517 \cdot 10^{-7}$	$6.671 \cdot 10^{-5}$		
$b\bar{b}  o b\bar{b}$	$-3.971 \cdot 10^{-20}$	$-4.18 \cdot 10^{-20}$	-0.05264	$2.933 \cdot 10^{-5}$	$2.933 \cdot 10^{-5}$	$6.675 \cdot 10^{-5}$		
$b\bar{b} \to d\bar{d}$	$-2.236 \cdot 10^{-22}$	$-2.236 \cdot 10^{-22}$	$8.972 \cdot 10^{-5}$	$4.364 \cdot 10^{-7}$	$4.364 \cdot 10^{-7}$	$6.672 \cdot 10^{-5}$		
$b\bar{b} \to t\bar{t}$	$-1.175 \cdot 10^{-22}$	$2.971 \cdot 10^{-22}$	3.528	$1.827 \cdot 10^{-6}$	$1.827 \cdot 10^{-6}$	$6.671 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$5.272 \cdot 10^{-22}$	$5.272 \cdot 10^{-22}$	$2.179 \cdot 10^{-5}$	$6.441 \cdot 10^{-7}$	$6.44 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$1.262 \cdot 10^{-27}$	$1.262 \cdot 10^{-27}$	$4.358 \cdot 10^{-6}$	$2.401 \cdot 10^{-12}$	$2.401 \cdot 10^{-12}$	0		
$d\bar{d} \rightarrow e^+e^-$	$-5.595 \cdot 10^{-27}$	$-5.595 \cdot 10^{-27}$	0	$3.955 \cdot 10^{-13}$	$3.955 \cdot 10^{-13}$	0		
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-1.892 \cdot 10^{-25}$	$-1.892 \cdot 10^{-25}$	0	$1.352 \cdot 10^{-10}$	$1.352 \cdot 10^{-10}$	0		
$s\bar{s} \to s\bar{s}$	$1.894 \cdot 10^{-22}$	$1.847 \cdot 10^{-22}$	0.02511	$1.214 \cdot 10^{-7}$	$1.214 \cdot 10^{-7}$	0		
$t\bar{t} \to d\bar{d}$	$-2.787 \cdot 10^{-27}$	$-2.787 \cdot 10^{-27}$	0	$1.68 \cdot 10^{-12}$	$1.68 \cdot 10^{-12}$	0		
$t\bar{t} \to s\bar{s}$	$1.857 \cdot 10^{-23}$	$1.856 \cdot 10^{-23}$	0.0006446	$1.028 \cdot 10^{-9}$	$1.028 \cdot 10^{-9}$	0		
$u\bar{d} \to u\bar{d}$	$-6.522 \cdot 10^{-24}$	$-6.522 \cdot 10^{-24}$	$1.733 \cdot 10^{-6}$	$1.344 \cdot 10^{-10}$	$1.344 \cdot 10^{-10}$	0		

## 2.26 cdBRe

	interference			square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2  \\ \verb mod1 $
$HH \to z\bar{b}b$	$5.771 \cdot 10^{-10}$	$5.771 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$1.607 \cdot 10^{-9}$ $1.607 \cdot 10^{-9}$ $6.676 \cdot 10^{-5}$
$HH \to z d\bar{d}$	$4.86 \cdot 10^{-16}$	$4.86 \cdot 10^{-16}$	0	$1.756 \cdot 10^{-16}  1.756 \cdot 10^{-16} \qquad 0$
$HW^+  o \gamma t \bar{b}$	$6.877 \cdot 10^{-10}$	$6.877 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$7.041 \cdot 10^{-9}$ $7.04 \cdot 10^{-9}$ $6.674 \cdot 10^{-5}$
$HW^+ \to \gamma u \bar{d}$	$2.236 \cdot 10^{-16}$	$2.236 \cdot 10^{-16}$	0	$2.727 \cdot 10^{-16}  2.727 \cdot 10^{-16}  0$
$H\gamma  o b\bar{b}$	$-4.576 \cdot 10^{-8}$	$-4.576 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	$0.001286 \qquad 0.001286 \qquad 6.671 \cdot 10^{-5}$
$H\gamma \to d\bar{d}$	$-9.744 \cdot 10^{-20}$	$-9.744 \cdot 10^{-20}$	0	$1.149 \cdot 10^{-9}$ $1.149 \cdot 10^{-9}$ 0
$Hz \to b\bar{b}$	$-1.678 \cdot 10^{-5}$	$-1.678 \cdot 10^{-5}$	$3.338 \cdot 10^{-5}$	$0.0001721 \qquad 0.0001721 \qquad 6.677 \cdot 10^{-5}$
$Hz \to s\bar{s}$	$-8.321 \cdot 10^{-9}$	$-8.321 \cdot 10^{-9}$	0	$1.213 \cdot 10^{-7}$ $1.213 \cdot 10^{-7}$ 0
$W^+W^-  o Hb\bar{b}$	$1.653 \cdot 10^{-10}$	$1.653 \cdot 10^{-10}$	$3.339 \cdot 10^{-5}$	$3.222 \cdot 10^{-12}  3.222 \cdot 10^{-12}  6.672 \cdot 10^{-5}$
$W^+W^- \to H d\bar{d}$	$1.704 \cdot 10^{-16}$	$1.704 \cdot 10^{-16}$	0	$3.396 \cdot 10^{-18}  3.396 \cdot 10^{-18} \qquad 0$
$b\bar{b} \to \gamma \gamma$	$2.091 \cdot 10^{-7}$	$2.091 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$1.147 \cdot 10^{-6}$ $1.147 \cdot 10^{-6}$ $6.67 \cdot 10^{-5}$
$b\bar{b} \to \mu^+ \mu^-$	$2.953 \cdot 10^{-7}$	$2.953 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$1.465 \cdot 10^{-6}$ $1.465 \cdot 10^{-6}$ $6.674 \cdot 10^{-5}$
$b\bar{b} \to \nu_e \bar{\nu}_e$	$-1.281 \cdot 10^{-7}$	$-1.281 \cdot 10^{-7}$	$3.333 \cdot 10^{-5}$	$2.796 \cdot 10^{-7}$ $2.796 \cdot 10^{-7}$ $6.673 \cdot 10^{-5}$
$b\bar{b}  o b\bar{b}$	$-1.993 \cdot 10^{-5}$	$-1.993 \cdot 10^{-5}$	$3.336 \cdot 10^{-5}$	$1.665 \cdot 10^{-5}$ $1.665 \cdot 10^{-5}$ $6.677 \cdot 10^{-5}$
$b\bar{b} \to d\bar{d}$	$-2.477 \cdot 10^{-7}$	$-2.477 \cdot 10^{-7}$	$3.334 \cdot 10^{-5}$	$5.027 \cdot 10^{-7}$ $5.027 \cdot 10^{-7}$ $6.674 \cdot 10^{-5}$
$b\bar{b} \to t\bar{t}$	$6.437 \cdot 10^{-6}$	$6.437 \cdot 10^{-6}$	$3.337 \cdot 10^{-5}$	$5.35 \cdot 10^{-7}$ $5.349 \cdot 10^{-7}$ $6.673 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-3.238 \cdot 10^{-7}$	$-3.238 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$2.789 \cdot 10^{-7}$ $2.788 \cdot 10^{-7}$ $6.674 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$-4.175 \cdot 10^{-13}$	$-4.175 \cdot 10^{-13}$	0	$2.982 \cdot 10^{-13}  2.982 \cdot 10^{-13}  0$
$d\bar{d} \to e^+e^-$	$5.651 \cdot 10^{-13}$	$5.651 \cdot 10^{-13}$	0	$2.109 \cdot 10^{-12}  2.109 \cdot 10^{-12}  0$
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-4.089 \cdot 10^{-10}$	$-4.089 \cdot 10^{-10}$	0	$7.808 \cdot 10^{-11}  7.808 \cdot 10^{-11} \qquad 0$
$s\bar{s} \to s\bar{s}$	$-3.936 \cdot 10^{-9}$	$-3.936 \cdot 10^{-9}$	0	$6.152 \cdot 10^{-9}$ $6.152 \cdot 10^{-9}$ 0
$t\bar{t} \to d\bar{d}$	$7.268 \cdot 10^{-12}$	$7.268 \cdot 10^{-12}$	0	$1.835 \cdot 10^{-12}  1.835 \cdot 10^{-12} \qquad 0$
$t\bar{t} \to s\bar{s}$	$2.55 \cdot 10^{-9}$	$2.55 \cdot 10^{-9}$	0	$8.037 \cdot 10^{-10}  8.037 \cdot 10^{-10} \qquad 0$
$u\bar{d} \to u\bar{d}$	$-3.062 \cdot 10^{-11}$	$-3.062 \cdot 10^{-11}$	0	$1.157 \cdot 10^{-10}  1.157 \cdot 10^{-10} \qquad 0$

## 2.27 cdGIm

		interfere	ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$b\bar{b}  o b\bar{b}$	$3.149 \cdot 10^{-20}$	$6.879 \cdot 10^{-20}$	-1.185	0.0004867	0.0004866	$6.674 \cdot 10^{-5}$		
$b\bar{b} \to d\bar{d}$	$-8.346 \cdot 10^{-27}$	$-8.402 \cdot 10^{-27}$	-0.006731	$1.926 \cdot 10^{-5}$	$1.926 \cdot 10^{-5}$	$6.675 \cdot 10^{-5}$		
$b\bar{b} \to t\bar{t}$	$4.967 \cdot 10^{-21}$	$3.042 \cdot 10^{-21}$	0.3876	$6.827 \cdot 10^{-6}$	$6.827 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$-7.143 \cdot 10^{-32}$	$3.59 \cdot 10^{-28}$	5027	$3.172 \cdot 10^{-6}$	$3.172 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$1.385 \cdot 10^{-32}$	$1.385 \cdot 10^{-32}$	0	$3.396 \cdot 10^{-12}$	$3.396 \cdot 10^{-12}$	0		
$s\bar{s} \to s\bar{s}$	$-1.285 \cdot 10^{-23}$	$-1.285 \cdot 10^{-23}$	0	$1.636 \cdot 10^{-7}$	$1.636 \cdot 10^{-7}$	0		
$t\bar{t} \to d\bar{d}$	$-5.902 \cdot 10^{-27}$	$-5.902 \cdot 10^{-27}$	0	$2.182 \cdot 10^{-11}$	$2.182 \cdot 10^{-11}$	0		
$t\bar{t} \to s\bar{s}$	$1.11 \cdot 10^{-25}$	$1.11 \cdot 10^{-25}$	0	$9.517 \cdot 10^{-9}$	$9.517 \cdot 10^{-9}$	0		
$u\bar{d} \to u\bar{d}$	$-1.15 \cdot 10^{-26}$	$-1.15 \cdot 10^{-26}$	0	$1.338 \cdot 10^{-9}$	$1.338 \cdot 10^{-9}$	0		

## 2.28 cdGRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o b\bar{b}$	-0.0005807	-0.0005807	$3.337 \cdot 10^{-5}$	0.0004867	0.0004867	$6.673 \cdot 10^{-5}$		
$b\bar{b} \to d\bar{d}$	-0.000112	-0.000112	$3.338 \cdot 10^{-5}$	$1.927 \cdot 10^{-5}$	$1.927 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$		
$b\bar{b} \to t\bar{t}$	0.0001677	0.0001677	$3.339 \cdot 10^{-5}$	$6.831 \cdot 10^{-6}$	$6.83 \cdot 10^{-6}$	$6.674 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	-0.000112	-0.000112	$3.338 \cdot 10^{-5}$	$3.176 \cdot 10^{-6}$	$3.175 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-1.398 \cdot 10^{-10}$	$-1.398 \cdot 10^{-10}$	0	$3.396 \cdot 10^{-12}$	$3.396 \cdot 10^{-12}$	0		
$s\bar{s} \to s\bar{s}$	$-2.473 \cdot 10^{-7}$	$-2.473 \cdot 10^{-7}$	0	$1.636 \cdot 10^{-7}$	$1.636 \cdot 10^{-7}$	0		
$t\bar{t} \to d\bar{d}$	$-1.567 \cdot 10^{-10}$	$-1.567 \cdot 10^{-10}$	0	$2.182 \cdot 10^{-11}$	$2.182 \cdot 10^{-11}$	0		
$t\bar{t} \to s\bar{s}$	$-6.213 \cdot 10^{-8}$	$-6.213 \cdot 10^{-8}$	0	$9.517 \cdot 10^{-9}$	$9.517 \cdot 10^{-9}$	0		
$u\bar{d} \to u\bar{d}$	$-1.585 \cdot 10^{-10}$	$-1.585 \cdot 10^{-10}$	0	$1.338 \cdot 10^{-9}$	$1.338 \cdot 10^{-9}$	0		

## 2.29 cdHIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o Hbar{b}$	$-4.272 \cdot 10^{-14}$	$-4.272 \cdot 10^{-14}$	$3.338 \cdot 10^{-5}$	$1.825 \cdot 10^{-9}$	$1.825 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$		
$HH \to Hs\bar{s}$	$-1.972 \cdot 10^{-19}$	$-1.972 \cdot 10^{-19}$	0	$7.499 \cdot 10^{-13}$	$7.499 \cdot 10^{-13}$	0		
$HH \to W^+ \bar{t} b$	$-1.743 \cdot 10^{-9}$	$-1.743 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$1.717 \cdot 10^{-9}$	$1.717 \cdot 10^{-9}$	$6.67\cdot10^{-5}$		
$HH \to W^- u \bar{d}$	$1.945 \cdot 10^{-15}$	$1.945 \cdot 10^{-15}$	0	$2.892 \cdot 10^{-15}$	$2.892 \cdot 10^{-15}$	0		
$HH  o z \bar b b$	$-1.952 \cdot 10^{-10}$	$-1.952 \cdot 10^{-10}$	$3.335 \cdot 10^{-5}$	$3.179 \cdot 10^{-9}$	$3.179 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$		
$HH \to z d\bar{d}$	$3.064 \cdot 10^{-15}$	$3.064 \cdot 10^{-15}$	0	$5.358 \cdot 10^{-16}$	$5.358 \cdot 10^{-16}$	0		
$HW^+  o \gamma t \bar{b}$	$-5.324 \cdot 10^{-9}$	$-5.323 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$3.822 \cdot 10^{-10}$	$3.821 \cdot 10^{-10}$	$6.673 \cdot 10^{-5}$		
$HW^+ \to \gamma u \bar{d}$	$1.468 \cdot 10^{-17}$	$1.468 \cdot 10^{-17}$	0	$4.991 \cdot 10^{-16}$	$4.991 \cdot 10^{-16}$	0		
$HW^+  o u \bar d$	$-2.412 \cdot 10^{-13}$	$-2.412 \cdot 10^{-13}$	0	$4.372 \cdot 10^{-11}$	$4.372 \cdot 10^{-11}$	0		
$HW^- \to \bar{t}b$	$1.896 \cdot 10^{-7}$	$1.896 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$3.716 \cdot 10^{-5}$	$3.716 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$		
$H\gamma  o b\bar{b}$	$-4.235 \cdot 10^{-22}$	$8.47 \cdot 10^{-22}$	3	$2.869 \cdot 10^{-7}$	$2.869 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$		
$H\gamma \to d\bar{d}$	$1.939 \cdot 10^{-26}$	$1.939 \cdot 10^{-26}$	0	$9.271 \cdot 10^{-12}$	$9.271 \cdot 10^{-12}$	0		
$Hz  o b\bar{b}$	$-3.741 \cdot 10^{-11}$	$-3.741 \cdot 10^{-11}$	$3.339 \cdot 10^{-5}$	$3.533 \cdot 10^{-5}$	$3.533 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$		
$Hz \to s\bar{s}$	$-3.893 \cdot 10^{-15}$	$-3.893 \cdot 10^{-15}$	0	$1.744 \cdot 10^{-8}$	$1.744 \cdot 10^{-8}$	0		
$W^+W^- \to Hb\bar{b}$	$-1.514 \cdot 10^{-10}$	$-1.514 \cdot 10^{-10}$	$3.336 \cdot 10^{-5}$	$3.79 \cdot 10^{-11}$	$3.79 \cdot 10^{-11}$	$6.673 \cdot 10^{-5}$		
$W^+W^- \to Hc\bar{c}$	$-1.161 \cdot 10^{-15}$	$-1.161 \cdot 10^{-15}$	0	$3.533 \cdot 10^{-24}$	$3.533 \cdot 10^{-24}$	0		
$W^+W^- \to H d\bar{d}$	$-3.91 \cdot 10^{-17}$	$-3.91 \cdot 10^{-17}$	0	$6.214 \cdot 10^{-17}$	$6.214 \cdot 10^{-17}$	0		
$W^+W^-  o H t \bar t$	$8.814 \cdot 10^{-11}$	$8.814 \cdot 10^{-11}$	$3.337 \cdot 10^{-5}$	$4.367 \cdot 10^{-15}$	$4.367 \cdot 10^{-15}$	$6.672 \cdot 10^{-5}$		
$b\bar{b}  o \mu^+\mu^-$	$-2.699 \cdot 10^{-29}$	$4.015 \cdot 10^{-29}$	2.487	$6.711 \cdot 10^{-14}$	$6.711 \cdot 10^{-14}$	$6.674 \cdot 10^{-5}$		
$b\bar{b}  o b\bar{b}$	$5.98 \cdot 10^{-21}$	$5.235 \cdot 10^{-21}$	0.1247	$1.501 \cdot 10^{-9}$	$1.5 \cdot 10^{-9}$	$6.677 \cdot 10^{-5}$		
$b\bar{b}  o d\bar{d}$	$-4.734 \cdot 10^{-31}$	$9.561 \cdot 10^{-31}$	3.02	$7.866 \cdot 10^{-16}$	$7.865 \cdot 10^{-16}$	$3.337 \cdot 10^{-5}$		
$b\bar{b}  o t\bar{t}$	$2.941 \cdot 10^{-22}$	$-1.812 \cdot 10^{-21}$	7.16	$4.74 \cdot 10^{-7}$	$4.74 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$5.732 \cdot 10^{-31}$	$4.872 \cdot 10^{-31}$	0.1499	$8.414 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-1.158 \cdot 10^{-31}$	$-1.217 \cdot 10^{-31}$	-0.05081	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0		
$d\bar{d} \to e^+e^-$	$2.107 \cdot 10^{-39}$	$2.107 \cdot 10^{-39}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0		
$s\bar{s} \to s\bar{s}$	$-1.943 \cdot 10^{-23}$	$-1.943 \cdot 10^{-23}$	0	$2.305 \cdot 10^{-16}$	$2.305 \cdot 10^{-16}$	0		

$t\bar{t}  o d\bar{d}$	$6.322 \cdot 10^{-29}$	$6.322 \cdot 10^{-29}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	0
$t\bar{t} \to s\bar{s}$	$3.156 \cdot 10^{-25}$	$1.044 \cdot 10^{-24}$	-2.307	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0
$u\bar{d} \to u\bar{d}$	$8.303 \cdot 10^{-35}$	$8.296 \cdot 10^{-35}$	0.0009123	$6.752 \cdot 10^{-23}$	$6.752 \cdot 10^{-23}$	0

## 2.30 cdHRe

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
$HH  o Hbar{b}$	$-7.262 \cdot 10^{-9}$	$-7.262 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$1.811 \cdot 10^{-9}$	$1.811 \cdot 10^{-9}$	$6.676 \cdot 10^{-5}$		
$HH \to H s \bar{s}$	$-3.198 \cdot 10^{-11}$	$-3.198 \cdot 10^{-11}$	0	$7.499 \cdot 10^{-13}$	$7.499 \cdot 10^{-13}$	0		
$HH \to W^+ \bar{t} b$	$-1.295 \cdot 10^{-8}$	$-1.295 \cdot 10^{-8}$	$3.336 \cdot 10^{-5}$	$1.716 \cdot 10^{-9}$	$1.716 \cdot 10^{-9}$	$6.673 \cdot 10^{-5}$		
$HH \to W^- u \bar{d}$	$-2.583 \cdot 10^{-15}$	$-2.583 \cdot 10^{-15}$	0	$2.892 \cdot 10^{-15}$	$2.892 \cdot 10^{-15}$	0		
$HH \to z\bar{b}b$	$-3.611 \cdot 10^{-9}$	$-3.611 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$3.18 \cdot 10^{-9}$	$3.179 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$		
$HH \to z d\bar{d}$	$1.779 \cdot 10^{-15}$	$1.779 \cdot 10^{-15}$	0	$5.358 \cdot 10^{-16}$	$5.358 \cdot 10^{-16}$	0		
$HW^+  o \gamma t \bar{b}$	$-8.513 \cdot 10^{-9}$	$-8.512 \cdot 10^{-9}$	$3.336 \cdot 10^{-5}$	$3.82 \cdot 10^{-10}$	$3.819 \cdot 10^{-10}$	$6.673 \cdot 10^{-5}$		
$HW^+  o \gamma u \bar{d}$	$5.67 \cdot 10^{-16}$	$5.67 \cdot 10^{-16}$	0	$4.991 \cdot 10^{-16}$	$4.991 \cdot 10^{-16}$	0		
$HW^+ \to u\bar{d}$	$-6.565 \cdot 10^{-12}$	$-6.565 \cdot 10^{-12}$	0	$4.372 \cdot 10^{-11}$	$4.372 \cdot 10^{-11}$	0		
$HW^-  o \bar{t}b$	$-5.279 \cdot 10^{-5}$	$-5.279 \cdot 10^{-5}$	$3.336 \cdot 10^{-5}$	$3.716 \cdot 10^{-5}$	$3.716 \cdot 10^{-5}$	$6.673 \cdot 10^{-5}$		
$H\gamma \to b\bar{b}$	$-9.464 \cdot 10^{-6}$	$-9.464 \cdot 10^{-6}$	$3.337 \cdot 10^{-5}$	$2.869 \cdot 10^{-7}$	$2.869 \cdot 10^{-7}$	$6.675 \cdot 10^{-5}$		
$H\gamma \to d\bar{d}$	$-3.059 \cdot 10^{-10}$	$-3.059 \cdot 10^{-10}$	0	$9.271 \cdot 10^{-12}$	$9.271 \cdot 10^{-12}$	0		
$Hz \to b\bar{b}$	$-2.768 \cdot 10^{-6}$	$-2.768 \cdot 10^{-6}$	$3.338 \cdot 10^{-5}$	$3.533 \cdot 10^{-5}$	$3.533 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$		
$Hz \to s\bar{s}$	$1.761 \cdot 10^{-10}$	$1.761 \cdot 10^{-10}$	0	$1.744 \cdot 10^{-8}$	$1.744 \cdot 10^{-8}$	0		
$W^+W^- \to H b \bar b$	$9.496 \cdot 10^{-10}$	$9.496 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$3.795 \cdot 10^{-11}$	$3.794 \cdot 10^{-11}$	$6.673 \cdot 10^{-5}$		
$W^+W^-  o Hc\bar{c}$	$6.24 \cdot 10^{-14}$	$6.24 \cdot 10^{-14}$	0	$3.332 \cdot 10^{-21}$	$3.332 \cdot 10^{-21}$	0		
$W^+W^- \to H d\bar{d}$	$-8.243 \cdot 10^{-18}$	$-8.243 \cdot 10^{-18}$	0	$6.214 \cdot 10^{-17}$	$6.214 \cdot 10^{-17}$	0		
$W^+W^-  o H t \bar t$	$4.617 \cdot 10^{-10}$	$4.617 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$1.201 \cdot 10^{-14}$	$1.201 \cdot 10^{-14}$	$6.675 \cdot 10^{-5}$		
$b\bar{b} \to \mu^+ \mu^-$	$-2.197 \cdot 10^{-12}$	$-2.197 \cdot 10^{-12}$	$3.337 \cdot 10^{-5}$	$6.711 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	$6.674 \cdot 10^{-5}$		
$b\bar{b}  o b\bar{b}$	0.0003286	0.0003286	$3.335 \cdot 10^{-5}$	$2.628 \cdot 10^{-9}$	$2.628 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$		
$b\bar{b} \to d\bar{d}$	$-2.604 \cdot 10^{-14}$	$-2.604 \cdot 10^{-14}$	$1.667 \cdot 10^{-5}$	$1.573 \cdot 10^{-15}$	$1.573 \cdot 10^{-15}$	$3.337 \cdot 10^{-5}$		

$b\bar{b}  o t\bar{t}$	$-1.02 \cdot 10^{-5}$	$-1.02 \cdot 10^{-5}$	$3.333 \cdot 10^{-5}$	$4.74 \cdot 10^{-7}$	$4.739 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-2.759 \cdot 10^{-15}$	$-2.758 \cdot 10^{-15}$	$3.335 \cdot 10^{-5}$	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	$6.674 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$-1.196 \cdot 10^{-15}$	$-1.196 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
$d\bar{d} \rightarrow e^+e^-$	$-6.415 \cdot 10^{-23}$	$-6.415 \cdot 10^{-23}$	0	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	0
$s\bar{s} \to s\bar{s}$	$1.801 \cdot 10^{-6}$	$1.801 \cdot 10^{-6}$	0	$4.153 \cdot 10^{-16}$	$4.153 \cdot 10^{-16}$	0
$t\bar{t} \to d\bar{d}$	$-2.076 \cdot 10^{-11}$	$-2.076 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	0
$t\bar{t} \to s\bar{s}$	$-8.274 \cdot 10^{-9}$	$-8.274 \cdot 10^{-9}$	0	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	0
$u\bar{d} \to u\bar{d}$	$7.107 \cdot 10^{-21}$	$7.107 \cdot 10^{-21}$	0	$6.752 \cdot 10^{-23}$	$6.752 \cdot 10^{-23}$	0

## 2.31 cdWIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+ \bar t b$	$-4.001 \cdot 10^{-9}$	$-4 \cdot 10^{-9}$	$3.337 \cdot 10^{-5}$	$3.798 \cdot 10^{-9}$	$3.797 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$		
$HH \to W^- u \bar{d}$	$1.744 \cdot 10^{-15}$	$1.744 \cdot 10^{-15}$	0	$3.996 \cdot 10^{-15}$	$3.996 \cdot 10^{-15}$	0		
$HH  o z \bar b b$	$-1.267 \cdot 10^{-10}$	$-1.267 \cdot 10^{-10}$	$3.338 \cdot 10^{-5}$	$1.425 \cdot 10^{-9}$	$1.425 \cdot 10^{-9}$	$6.673 \cdot 10^{-5}$		
$HH \to z d\bar{d}$	$3.235 \cdot 10^{-15}$	$3.235 \cdot 10^{-15}$	0	$1.741 \cdot 10^{-15}$	$1.741 \cdot 10^{-15}$	0		
$HW^+  o \gamma t \bar{b}$	$-1.992 \cdot 10^{-8}$	$-1.992 \cdot 10^{-8}$	$3.334 \cdot 10^{-5}$	$9.87 \cdot 10^{-9}$	$9.87 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$		
$HW^+ \to \gamma u \bar{d}$	$-6.133 \cdot 10^{-17}$	$-6.133 \cdot 10^{-17}$	0	$1.427 \cdot 10^{-15}$	$1.427 \cdot 10^{-15}$	0		
$HW^+  o u \bar d$	$-1.03 \cdot 10^{-13}$	$-1.03 \cdot 10^{-13}$	0	$7.92 \cdot 10^{-10}$	$7.92 \cdot 10^{-10}$	0		
$HW^- \to \bar{t}b$	$-5.789 \cdot 10^{-9}$	$-5.789 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	0.001214	0.001214	$6.674 \cdot 10^{-5}$		
$H\gamma  o b\bar{b}$	$3.825 \cdot 10^{-21}$	$3.826 \cdot 10^{-21}$	-0.0001829	0.0003606	0.0003606	$6.675 \cdot 10^{-5}$		
$H\gamma \to d\bar{d}$	$-2.875 \cdot 10^{-28}$	$-2.875 \cdot 10^{-28}$	0	$1.738 \cdot 10^{-11}$	$1.738 \cdot 10^{-11}$	0		
$Hz \to b\bar{b}$	$-5.346 \cdot 10^{-8}$	$-5.346 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	0.0008315	0.0008315	$6.673 \cdot 10^{-5}$		
$Hz \to s\bar{s}$	$-6.177 \cdot 10^{-12}$	$-6.177 \cdot 10^{-12}$	0	$4.56 \cdot 10^{-7}$	$4.56 \cdot 10^{-7}$	0		
$W^+W^-  o Hb\bar{b}$	$-3.373 \cdot 10^{-9}$	$-3.373 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$2.25 \cdot 10^{-9}$	$2.25 \cdot 10^{-9}$	$6.671 \cdot 10^{-5}$		
$W^+W^- \to H c \bar c$	$1.402 \cdot 10^{-15}$	$1.402 \cdot 10^{-15}$	0	$2.395 \cdot 10^{-19}$	$2.395 \cdot 10^{-19}$	0		
$W^+W^-  o H d \bar d$	$-7.643 \cdot 10^{-16}$	$-7.643 \cdot 10^{-16}$	0	$1.513 \cdot 10^{-15}$	$1.513 \cdot 10^{-15}$	0		
$W^+W^-  o Ht\bar{t}$	$-2.254 \cdot 10^{-10}$	$-2.254 \cdot 10^{-10}$	$3.337 \cdot 10^{-5}$	$1.288 \cdot 10^{-11}$	$1.288 \cdot 10^{-11}$	$6.671 \cdot 10^{-5}$		

$\bar{b}t \to \bar{d}u$	$7.538 \cdot 10^{-21}$	$8.035 \cdot 10^{-21}$	-0.06603	$7.596 \cdot 10^{-6}$	$7.596 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
$b\bar{b} \to \gamma \gamma$	$4.345 \cdot 10^{-25}$	$1.027 \cdot 10^{-24}$	-1.364	$3.289 \cdot 10^{-7}$	$3.289 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to \mu^+\mu^-$	$-1.529 \cdot 10^{-22}$	$-1.529 \cdot 10^{-22}$	$3.289 \cdot 10^{-5}$	$1.581 \cdot 10^{-7}$	$1.581 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
$b\bar{b}  o \nu_e \bar{\nu}_e$	$9.941 \cdot 10^{-23}$	$9.941 \cdot 10^{-23}$	0	$8.777 \cdot 10^{-7}$	$8.777 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$b\bar{b}  o b\bar{b}$	$-6.049 \cdot 10^{-20}$	$-5.709 \cdot 10^{-20}$	0.05622	0.0001806	0.0001806	$6.673 \cdot 10^{-5}$
$b\bar{b} \to d\bar{d}$	$-2.643 \cdot 10^{-22}$	$-2.643 \cdot 10^{-22}$	$-4.362 \cdot 10^{-5}$	$2.747 \cdot 10^{-6}$	$2.747 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
$b\bar{b}  o t\bar{t}$	$1.934 \cdot 10^{-20}$	$2.419 \cdot 10^{-20}$	-0.2511	$9.575 \cdot 10^{-5}$	$9.574 \cdot 10^{-5}$	$6.674 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-8.231 \cdot 10^{-22}$	$-8.23 \cdot 10^{-22}$	$6.935 \cdot 10^{-5}$	$1.201 \cdot 10^{-6}$	$1.201 \cdot 10^{-6}$	$6.668 \cdot 10^{-5}$
$b\bar{t} \to e^- \bar{\nu}_e$	$2.415 \cdot 10^{-21}$	$2.457 \cdot 10^{-21}$	-0.01764	$1.533 \cdot 10^{-6}$	$1.533 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$9.705 \cdot 10^{-28}$	$9.705 \cdot 10^{-28}$	0	$1.069 \cdot 10^{-9}$	$1.069 \cdot 10^{-9}$	0
$d\bar{d} \to c\bar{c}$	$-2.56 \cdot 10^{-27}$	$-2.56 \cdot 10^{-27}$	0	$4.478 \cdot 10^{-12}$	$4.478 \cdot 10^{-12}$	0
$d\bar{d} \to e^+e^-$	$2.755 \cdot 10^{-27}$	$2.755 \cdot 10^{-27}$	0	$2.781 \cdot 10^{-13}$	$2.781 \cdot 10^{-13}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-3.532 \cdot 10^{-25}$	$-3.532 \cdot 10^{-25}$	0	$4.714 \cdot 10^{-10}$	$4.714 \cdot 10^{-10}$	0
$s\bar{s} \to s\bar{s}$	$2.974 \cdot 10^{-22}$	$2.982 \cdot 10^{-22}$	-0.002627	$5.124 \cdot 10^{-7}$	$5.124 \cdot 10^{-7}$	0
$t\bar{t} \to d\bar{d}$	$-3.4 \cdot 10^{-27}$	$-3.4 \cdot 10^{-27}$	$2.577 \cdot 10^{-5}$	$3.003 \cdot 10^{-12}$	$3.003 \cdot 10^{-12}$	0
$t\bar{t} \to s\bar{s}$	$3.549 \cdot 10^{-23}$	$3.55 \cdot 10^{-23}$	-0.0003591	$1.865 \cdot 10^{-9}$	$1.865 \cdot 10^{-9}$	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	$4.673 \cdot 10^{-27}$	$4.673 \cdot 10^{-27}$	0	$2.228 \cdot 10^{-12}$	$2.228 \cdot 10^{-12}$	0
$u\bar{d} \to c\bar{s}$	$1.036 \cdot 10^{-26}$	$1.036 \cdot 10^{-26}$	0	$2.862 \cdot 10^{-9}$	$2.862 \cdot 10^{-9}$	0
$u\bar{d} \to u\bar{d}$	$7.737 \cdot 10^{-25}$	$7.738 \cdot 10^{-25}$	$-7.976 \cdot 10^{-5}$	$1.987 \cdot 10^{-10}$	$1.987 \cdot 10^{-10}$	0

## 2.32 cdWRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to W^+ \bar{t} b$	$-1.349 \cdot 10^{-8}$	$-1.349 \cdot 10^{-8}$	$3.337 \cdot 10^{-5}$	$4.034 \cdot 10^{-9}$	$4.034 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$		
$HH \to W^- u \bar{d}$	$-1.079 \cdot 10^{-15}$	$-1.079 \cdot 10^{-15}$	0	$1.415 \cdot 10^{-16}$	$1.415 \cdot 10^{-16}$	0		
$HH  o z \bar{b} b$	$1.078 \cdot 10^{-9}$	$1.078 \cdot 10^{-9}$	$3.331 \cdot 10^{-5}$	$5.604 \cdot 10^{-9}$	$5.604 \cdot 10^{-9}$	$6.675 \cdot 10^{-5}$		
$HH \to z d\bar{d}$	$9.076 \cdot 10^{-16}$	$9.076 \cdot 10^{-16}$	0	$6.124 \cdot 10^{-16}$	$6.124 \cdot 10^{-16}$	0		
$HW^+ \to \gamma t \bar{b}$	$1.245 \cdot 10^{-10}$	$1.245 \cdot 10^{-10}$	$3.34 \cdot 10^{-5}$	$2.135 \cdot 10^{-9}$	$2.135 \cdot 10^{-9}$	$6.674 \cdot 10^{-5}$		

$HW^+ \to \gamma u \bar{d}$	$-4.57 \cdot 10^{-17}$	$-4.57 \cdot 10^{-17}$	0	$1.428 \cdot 10^{-16}$	$1.428 \cdot 10^{-16}$	0
$HW^+  o u ar{d}$	$-5.133 \cdot 10^{-11}$	$-5.133 \cdot 10^{-11}$	0	$8.221 \cdot 10^{-10}$	$8.221 \cdot 10^{-10}$	0
$HW^-  o \bar{t}b$	-0.0001397	-0.0001397	$3.337 \cdot 10^{-5}$	0.001311	0.001311	$6.672 \cdot 10^{-5}$
$H\gamma \to b\bar{b}$	$2.451 \cdot 10^{-8}$	$2.451 \cdot 10^{-8}$	$3.338 \cdot 10^{-5}$	0.0003688	0.0003688	$6.672 \cdot 10^{-5}$
$H\gamma \to d\bar{d}$	$5.218 \cdot 10^{-20}$	$5.218 \cdot 10^{-20}$	0	$3.294 \cdot 10^{-10}$	$3.294 \cdot 10^{-10}$	0
$Hz \to b\bar{b}$	$-3.133 \cdot 10^{-5}$	$-3.133 \cdot 10^{-5}$	$3.336 \cdot 10^{-5}$	0.0006	0.0006	$6.675 \cdot 10^{-5}$
$Hz \to s\bar{s}$	$-1.554 \cdot 10^{-8}$	$-1.554 \cdot 10^{-8}$	0	$4.229 \cdot 10^{-7}$	$4.229 \cdot 10^{-7}$	0
$W^+W^-  o Hb\bar{b}$	$1.165 \cdot 10^{-9}$	$1.165 \cdot 10^{-9}$	$3.33 \cdot 10^{-5}$	$2.758 \cdot 10^{-9}$	$2.758 \cdot 10^{-9}$	$6.672 \cdot 10^{-5}$
$W^+W^- \to Hc\bar{c}$	$-3.161 \cdot 10^{-12}$	$-3.161 \cdot 10^{-12}$	0	$4.193 \cdot 10^{-19}$	$4.193 \cdot 10^{-19}$	0
$W^+W^-  o H d \bar d$	$6.704 \cdot 10^{-16}$	$6.704 \cdot 10^{-16}$	0	$1.396 \cdot 10^{-15}$	$1.396 \cdot 10^{-15}$	0
$W^+W^-  o Ht\bar{t}$	$-5.276 \cdot 10^{-9}$	$-5.276 \cdot 10^{-9}$	$3.338 \cdot 10^{-5}$	$9.314 \cdot 10^{-12}$	$9.313 \cdot 10^{-12}$	$6.673 \cdot 10^{-5}$
$\bar{b}t \to \bar{d}u$	$-6.213 \cdot 10^{-6}$	$-6.213 \cdot 10^{-6}$	$3.336 \cdot 10^{-5}$	$7.251 \cdot 10^{-6}$	$7.25\cdot10^{-6}$	$6.674 \cdot 10^{-5}$
$b\bar{b}  o \gamma \gamma$	$-1.12 \cdot 10^{-7}$	$-1.12 \cdot 10^{-7}$	$3.331 \cdot 10^{-5}$	$3.289 \cdot 10^{-7}$	$3.289 \cdot 10^{-7}$	$6.674 \cdot 10^{-5}$
$b\bar{b}  o \mu^+\mu^-$	$-6.489 \cdot 10^{-7}$	$-6.489 \cdot 10^{-7}$	$3.336 \cdot 10^{-5}$	$1.03 \cdot 10^{-6}$	$1.03 \cdot 10^{-6}$	$6.667 \cdot 10^{-5}$
$b\bar{b}  o  u_e \bar{ u}_e$	$-2.393 \cdot 10^{-7}$	$-2.392 \cdot 10^{-7}$	$3.335 \cdot 10^{-5}$	$9.751 \cdot 10^{-7}$	$9.75 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
$b\bar{b}  o b\bar{b}$	0.0001724	0.0001724	$3.335 \cdot 10^{-5}$	0.0001035	0.0001035	$6.674 \cdot 10^{-5}$
$b\bar{b}  o d\bar{d}$	$-1.296 \cdot 10^{-6}$	$-1.295 \cdot 10^{-6}$	$3.342 \cdot 10^{-5}$	$3.164 \cdot 10^{-6}$	$3.164 \cdot 10^{-6}$	$6.673 \cdot 10^{-5}$
$b\bar{b}  o t\bar{t}$	-0.0005898	-0.0005898	$3.337 \cdot 10^{-5}$	0.0008179	0.0008179	$6.674 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$-4.673 \cdot 10^{-7}$	$-4.673 \cdot 10^{-7}$	$3.338 \cdot 10^{-5}$	$5.201 \cdot 10^{-7}$	$5.201 \cdot 10^{-7}$	$6.673 \cdot 10^{-5}$
$b\bar{t} \to e^- \bar{\nu}_e$	$-8.393 \cdot 10^{-7}$	$-8.393 \cdot 10^{-7}$	$3.337 \cdot 10^{-5}$	$1.973 \cdot 10^{-6}$	$1.973 \cdot 10^{-6}$	$6.675 \cdot 10^{-5}$
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-8.058 \cdot 10^{-10}$	$-8.058 \cdot 10^{-10}$	0	$1.245 \cdot 10^{-9}$	$1.245 \cdot 10^{-9}$	0
$d\bar{d} \to c\bar{c}$	$-5.547 \cdot 10^{-13}$	$-5.547 \cdot 10^{-13}$	0	$5.563 \cdot 10^{-13}$	$5.563 \cdot 10^{-13}$	0
$d\bar{d} \rightarrow e^+e^-$	$-9.509 \cdot 10^{-13}$	$-9.509 \cdot 10^{-13}$	0	$1.483 \cdot 10^{-12}$	$1.483 \cdot 10^{-12}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-7.635 \cdot 10^{-10}$	$-7.635 \cdot 10^{-10}$	0	$2.723 \cdot 10^{-10}$	$2.723 \cdot 10^{-10}$	0
$s\bar{s} \to s\bar{s}$	$4.118 \cdot 10^{-8}$	$4.118 \cdot 10^{-8}$	0	$3.836 \cdot 10^{-8}$	$3.836 \cdot 10^{-8}$	0
$t\bar{t} \to d\bar{d}$	$-9.564 \cdot 10^{-12}$	$-9.564 \cdot 10^{-12}$	0	$3.292 \cdot 10^{-12}$	$3.292 \cdot 10^{-12}$	0
$t\bar{t} \to s\bar{s}$	$-3.457 \cdot 10^{-9}$	$-3.457 \cdot 10^{-9}$	0	$1.447 \cdot 10^{-9}$	$1.447 \cdot 10^{-9}$	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-4.719 \cdot 10^{-13}$	$-4.719 \cdot 10^{-13}$	0	$1.279 \cdot 10^{-12}$	$1.279 \cdot 10^{-12}$	0
$u\bar{d} \to c\bar{s}$	$-2.925 \cdot 10^{-9}$	$-2.925 \cdot 10^{-9}$	0	$3.601 \cdot 10^{-9}$	$3.601 \cdot 10^{-9}$	0

## 2.33 cdd

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o b\bar{b}$	-11.73	-11.73	0	7.807	7.807	0		
$b\bar{b} \to d\bar{d}$	0.03155	0.03155	0	2.318	2.318	0		
$s\bar{s} \to s\bar{s}$	-202.1	-202.1	0	10.39	10.39	0		

## 2.34 cdd1

		i	nterference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o b\bar{b}$	-11.73	-11.73	0	7.807	7.807	0		
$b\bar{b} \to d\bar{d}$	1.537	1.537	0	2.318	2.318	0		
$s\bar{s} \to s\bar{s}$	-202.1	-202.1	0	10.39	10.39	0		

#### 2.35 ceBIm

		interfere		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \rightarrow ze^+e^-$	$1.953 \cdot 10^{-20}$	$1.953 \cdot 10^{-20}$	$-1.587 \cdot 10^{-6}$	$1.414 \cdot 10^{-19}$	$1.414 \cdot 10^{-19}$	$-3.253 \cdot 10^{-6}$	
$HW^- \to \gamma e^- \bar{\nu}_e$	$1.565 \cdot 10^{-18}$	$1.565 \cdot 10^{-18}$	$-1.598 \cdot 10^{-6}$	$1.502 \cdot 10^{-18}$	$1.502 \cdot 10^{-18}$	$-3.196 \cdot 10^{-6}$	
$H\gamma \to e^+e^-$	$-1.528 \cdot 10^{-29}$	$-1.528 \cdot 10^{-29}$	$-1.57 \cdot 10^{-6}$	$3.877 \cdot 10^{-12}$	$3.877 \cdot 10^{-12}$	$-3.224 \cdot 10^{-6}$	
$Hz \to \mu^+\mu^-$	$-6.78 \cdot 10^{-12}$	$-6.78 \cdot 10^{-12}$	$-2.95 \cdot 10^{-7}$	$4.94 \cdot 10^{-8}$	$4.94 \cdot 10^{-8}$	$-5.668 \cdot 10^{-7}$	
$\mu^+\mu^- \to \tau^+\tau^-$	$2.899 \cdot 10^{-23}$	$4.121 \cdot 10^{-23}$	-0.4212	$8.327 \cdot 10^{-7}$	$8.327 \cdot 10^{-7}$	$6.077 \cdot 10^{-6}$	
$b\bar{b}  o \mu^+\mu^-$	$4.446 \cdot 10^{-27}$	$4.833 \cdot 10^{-27}$	-0.0869	$1.613 \cdot 10^{-11}$	$1.613 \cdot 10^{-11}$	$-5.579 \cdot 10^{-7}$	

$c\bar{c} \to \mu^+ \mu^-$	$-6.355 \cdot 10^{-26}$	$-6.362 \cdot 10^{-26}$	-0.001114	$2.326 \cdot 10^{-11}$	$2.326 \cdot 10^{-11}$	$-5.59 \cdot 10^{-7}$
$d\bar{d} \rightarrow e^+e^-$	$3.44 \cdot 10^{-30}$	$3.44 \cdot 10^{-30}$	$8.71\cdot10^{-5}$	$5.317 \cdot 10^{-16}$	$5.317 \cdot 10^{-16}$	$-3.216 \cdot 10^{-6}$
$e^+\nu_\mu \to e^+\nu_\mu$	$-2.81 \cdot 10^{-29}$	$-2.726 \cdot 10^{-29}$	0.0298	$4.271 \cdot 10^{-14}$	$4.271 \cdot 10^{-14}$	$-3.207 \cdot 10^{-6}$
$e^+\nu_e \to e^+\nu_e$	$-4.689 \cdot 10^{-27}$	$-4.691 \cdot 10^{-27}$	-0.0002918	$7.088 \cdot 10^{-14}$	$7.088 \cdot 10^{-14}$	$-3.202 \cdot 10^{-6}$
$e^+\tau^- \to e^+\tau^-$	$-4.002 \cdot 10^{-15}$	$-4.002 \cdot 10^{-15}$	$3.048 \cdot 10^{-6}$	$5.154 \cdot 10^{-5}$	$5.154 \cdot 10^{-5}$	$6.112 \cdot 10^{-6}$
$e^+e^-  o \mu^+\mu^-$	$2.578 \cdot 10^{-25}$	$2.795 \cdot 10^{-25}$	-0.08388	$2.219 \cdot 10^{-9}$	$2.219 \cdot 10^{-9}$	$-5.409 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	$2.417 \cdot 10^{-28}$	$2.386 \cdot 10^{-28}$	0.01291	$1.027 \cdot 10^{-12}$	$1.027 \cdot 10^{-12}$	$-3.213 \cdot 10^{-6}$
$t\bar{t} \to \tau^+\tau^-$	$-6.663 \cdot 10^{-22}$	$-6.649 \cdot 10^{-22}$	0.00197	$1.172 \cdot 10^{-7}$	$1.172 \cdot 10^{-7}$	$6.143 \cdot 10^{-6}$

## 2.36 ceBRe

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \rightarrow ze^+e^-$	$-5.603 \cdot 10^{-19}$	$-5.603 \cdot 10^{-19}$	$-1.606 \cdot 10^{-6}$	$1.414 \cdot 10^{-19}$	$1.414 \cdot 10^{-19}$	$-3.253 \cdot 10^{-6}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$6.717 \cdot 10^{-19}$	$6.717 \cdot 10^{-19}$	$-1.608 \cdot 10^{-6}$	$1.502 \cdot 10^{-18}$	$1.502 \cdot 10^{-18}$	$-3.196 \cdot 10^{-6}$
$H\gamma \to e^+e^-$	$-4.148 \cdot 10^{-23}$	$-4.148 \cdot 10^{-23}$	$-1.615 \cdot 10^{-6}$	$3.877 \cdot 10^{-12}$	$3.877 \cdot 10^{-12}$	$-3.224 \cdot 10^{-6}$
$Hz \to \mu^+\mu^-$	$-5.53 \cdot 10^{-10}$	$-5.53 \cdot 10^{-10}$	$-2.893 \cdot 10^{-7}$	$4.94 \cdot 10^{-8}$	$4.94 \cdot 10^{-8}$	$-5.668 \cdot 10^{-7}$
$\mu^+\mu^- \to \tau^+\tau^-$	$1.085 \cdot 10^{-6}$	$1.085 \cdot 10^{-6}$	$3.041 \cdot 10^{-6}$	$8.327 \cdot 10^{-7}$	$8.327 \cdot 10^{-7}$	$6.077 \cdot 10^{-6}$
$b\bar{b} \to \mu^+ \mu^-$	$1.027 \cdot 10^{-10}$	$1.027 \cdot 10^{-10}$	$-2.921 \cdot 10^{-7}$	$1.613 \cdot 10^{-11}$	$1.613 \cdot 10^{-11}$	$-6.199 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	$7.613 \cdot 10^{-10}$	$7.613 \cdot 10^{-10}$	$-2.89 \cdot 10^{-7}$	$2.326 \cdot 10^{-11}$	$2.326 \cdot 10^{-11}$	$-5.59 \cdot 10^{-7}$
$d\bar{d} \to e^+e^-$	$2.362 \cdot 10^{-15}$	$2.362 \cdot 10^{-15}$	$-1.566 \cdot 10^{-6}$	$5.317 \cdot 10^{-16}$	$5.317 \cdot 10^{-16}$	$-3.216 \cdot 10^{-6}$
$e^+\nu_\mu \to e^+\nu_\mu$	$5.522 \cdot 10^{-14}$	$5.522 \cdot 10^{-14}$	$-1.612 \cdot 10^{-6}$	$4.271 \cdot 10^{-14}$	$4.271 \cdot 10^{-14}$	$-3.207 \cdot 10^{-6}$
$e^+\nu_e \to e^+\nu_e$	$1.183 \cdot 10^{-13}$	$1.183 \cdot 10^{-13}$	$-1.606 \cdot 10^{-6}$	$7.088 \cdot 10^{-14}$	$7.088 \cdot 10^{-14}$	$-3.202 \cdot 10^{-6}$
$e^+\tau^- \to e^+\tau^-$	$-9.796 \cdot 10^{-6}$	$-9.796 \cdot 10^{-6}$	$3.052 \cdot 10^{-6}$	$5.154 \cdot 10^{-5}$	$5.154 \cdot 10^{-5}$	$6.112 \cdot 10^{-6}$
$e^+e^- \rightarrow \mu^+\mu^-$	$5.334 \cdot 10^{-9}$	$5.334 \cdot 10^{-9}$	$-2.812 \cdot 10^{-7}$	$2.219 \cdot 10^{-9}$	$2.219 \cdot 10^{-9}$	$-5.409 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	$2.901 \cdot 10^{-13}$	$2.901 \cdot 10^{-13}$	$-1.586 \cdot 10^{-6}$	$1.027 \cdot 10^{-12}$	$1.027 \cdot 10^{-12}$	$-3.213 \cdot 10^{-6}$
$t\bar{t} \to \tau^+ \tau^-$	$3.128 \cdot 10^{-7}$	$3.128 \cdot 10^{-7}$	$3.069 \cdot 10^{-6}$	$1.172 \cdot 10^{-7}$	$1.172 \cdot 10^{-7}$	$6.058 \cdot 10^{-6}$

## 2.37 ceHIm

		interfere		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH  o H  au^+  au^-$	$-2.375 \cdot 10^{-14}$	$-2.375 \cdot 10^{-14}$	$3.032 \cdot 10^{-6}$	$5.094 \cdot 10^{-11}$	$5.094 \cdot 10^{-11}$	$6.106 \cdot 10^{-6}$
$HH \to W^+ e^- \bar{\nu}_e$	$2.338 \cdot 10^{-18}$	$2.338 \cdot 10^{-18}$	$-1.626 \cdot 10^{-6}$	$1.309 \cdot 10^{-18}$	$1.309 \cdot 10^{-18}$	$-3.208 \cdot 10^{-6}$
$HH \rightarrow ze^+e^-$	$-9.329 \cdot 10^{-18}$	$-9.329 \cdot 10^{-18}$	$-1.608 \cdot 10^{-6}$	$1.62 \cdot 10^{-18}$	$1.62 \cdot 10^{-18}$	$-3.271 \cdot 10^{-6}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$-1.437 \cdot 10^{-19}$	$-1.437 \cdot 10^{-19}$	$-1.6 \cdot 10^{-6}$	$1.368 \cdot 10^{-19}$	$1.368 \cdot 10^{-19}$	$-3.216 \cdot 10^{-6}$
$HW^-  o \mu^- \bar{\nu}_\mu$	$4.115 \cdot 10^{-11}$	$4.115 \cdot 10^{-11}$	$-2.916 \cdot 10^{-7}$	$7.461 \cdot 10^{-9}$	$7.461 \cdot 10^{-9}$	$-5.763 \cdot 10^{-7}$
$H\gamma \to e^+e^-$	$-3.787 \cdot 10^{-29}$	$-1.262 \cdot 10^{-29}$	0.6667	$1.479 \cdot 10^{-14}$	$1.479 \cdot 10^{-14}$	$-3.246 \cdot 10^{-6}$
$Hz \to \mu^+\mu^-$	$-4.833 \cdot 10^{-14}$	$-4.833 \cdot 10^{-14}$	$-2.897 \cdot 10^{-7}$	$9.157 \cdot 10^{-9}$	$9.157 \cdot 10^{-9}$	$-5.679 \cdot 10^{-7}$
$\mu^+\mu^- \to \tau^+\tau^-$	$3.081 \cdot 10^{-30}$	$6.237 \cdot 10^{-30}$	-1.024	$7.277 \cdot 10^{-14}$	$7.277 \cdot 10^{-14}$	$2.762 \cdot 10^{-6}$
$b\bar{b}  o \mu^+\mu^-$	$-1.435 \cdot 10^{-28}$	$-9.824 \cdot 10^{-29}$	0.3152	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	$-5.663 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	$-3.982 \cdot 10^{-31}$	$3.112 \cdot 10^{-31}$	1.781	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	$-5.65 \cdot 10^{-7}$
$d\bar{d} \rightarrow e^+e^-$	$2.421 \cdot 10^{-40}$	$2.395 \cdot 10^{-40}$	0.01054	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	$-3.216 \cdot 10^{-6}$
$e^+\tau^- \to e^+\tau^-$	$-4.354 \cdot 10^{-27}$	$-4.354 \cdot 10^{-27}$	$-1.608 \cdot 10^{-6}$	$1.563 \cdot 10^{-18}$	$1.563 \cdot 10^{-18}$	$1.472 \cdot 10^{-6}$
$e^+e^- \to \mu^+\mu^-$	$1.837 \cdot 10^{-35}$	$3.087 \cdot 10^{-35}$	-0.6804	$6.017 \cdot 10^{-21}$	$6.017 \cdot 10^{-21}$	$-1.895 \cdot 10^{-6}$
$e^+e^- \rightarrow e^+e^-$	$1.566 \cdot 10^{-30}$	$2.35 \cdot 10^{-31}$	0.8499	$5.448 \cdot 10^{-25}$	$5.448 \cdot 10^{-25}$	$-3.212 \cdot 10^{-6}$
$t\bar{t} \to \tau^+ \tau^-$	$7.995 \cdot 10^{-23}$	$9.46 \cdot 10^{-24}$	0.8817	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	$6.095 \cdot 10^{-6}$

### 2.38 ceHRe

			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH  o H  au^+  au^-$	$-2.722 \cdot 10^{-10}$	$-2.722 \cdot 10^{-10}$	$3.049 \cdot 10^{-6}$	$2.277 \cdot 10^{-10}$	$2.277 \cdot 10^{-10}$	$6.103 \cdot 10^{-6}$
$HH \to W^+ e^- \bar{\nu}_e$	$-1.352 \cdot 10^{-17}$	$-1.352 \cdot 10^{-17}$	$-1.627 \cdot 10^{-6}$	$1.016 \cdot 10^{-17}$	$1.016 \cdot 10^{-17}$	$-3.149 \cdot 10^{-6}$
$HH \rightarrow ze^+e^-$	$-2.674 \cdot 10^{-18}$	$-2.674 \cdot 10^{-18}$	$-1.608 \cdot 10^{-6}$	$4.975 \cdot 10^{-18}$	$4.975 \cdot 10^{-18}$	$-3.216 \cdot 10^{-6}$
$HW^- \to \gamma e^- \bar{\nu}_e$	$3.893 \cdot 10^{-19}$	$3.893 \cdot 10^{-19}$	$-1.618 \cdot 10^{-6}$	$2.205 \cdot 10^{-19}$	$2.205 \cdot 10^{-19}$	$-3.22 \cdot 10^{-6}$
$HW^-  o \mu^- \bar{\nu}_\mu$	$-9.894 \cdot 10^{-10}$	$-9.894 \cdot 10^{-10}$	$-2.83 \cdot 10^{-7}$	$7.483 \cdot 10^{-9}$	$7.483 \cdot 10^{-9}$	$-5.746 \cdot 10^{-7}$

$H\gamma \to e^+e^-$	$-6.855 \cdot 10^{-13}$	$-6.855 \cdot 10^{-13}$	$-1.605 \cdot 10^{-6}$	$2.078 \cdot 10^{-14}$	$2.078 \cdot 10^{-14}$	$-3.225 \cdot 10^{-6}$
$Hz \to \mu^+\mu^-$	$1.477 \cdot 10^{-9}$	$1.477 \cdot 10^{-9}$	$-2.708 \cdot 10^{-7}$	$7.463 \cdot 10^{-9}$	$7.463 \cdot 10^{-9}$	$-5.762 \cdot 10^{-7}$
$\mu^+\mu^- \to \tau^+\tau^-$	$-2.38 \cdot 10^{-12}$	$-2.38 \cdot 10^{-12}$	$1.387 \cdot 10^{-6}$	$1.455 \cdot 10^{-13}$	$1.455 \cdot 10^{-13}$	$2.749 \cdot 10^{-6}$
$b\bar{b}  o \mu^+\mu^-$	$-2.197 \cdot 10^{-12}$	$-2.197 \cdot 10^{-12}$	$-2.731 \cdot 10^{-7}$	$6.71 \cdot 10^{-14}$	$6.71 \cdot 10^{-14}$	$-5.663 \cdot 10^{-7}$
$c\bar{c} \to \mu^+ \mu^-$	$-2.013 \cdot 10^{-13}$	$-2.013 \cdot 10^{-13}$	$-2.981 \cdot 10^{-7}$	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	$-5.65 \cdot 10^{-7}$
$d\bar{d} \rightarrow e^+e^-$	$-6.415 \cdot 10^{-23}$	$-6.415 \cdot 10^{-23}$	$-1.606 \cdot 10^{-6}$	$1.959 \cdot 10^{-24}$	$1.959 \cdot 10^{-24}$	$-3.216 \cdot 10^{-6}$
$e^+\tau^- \to e^+\tau^-$	$-4.541 \cdot 10^{-16}$	$-4.541 \cdot 10^{-16}$	$7.267 \cdot 10^{-7}$	$2.19 \cdot 10^{-18}$	$2.19 \cdot 10^{-18}$	$1.461 \cdot 10^{-6}$
$e^+e^- \rightarrow \mu^+\mu^-$	$-2.012 \cdot 10^{-19}$	$-2.012 \cdot 10^{-19}$	$-9.444 \cdot 10^{-7}$	$1.203 \cdot 10^{-20}$	$1.203 \cdot 10^{-20}$	$-1.911 \cdot 10^{-6}$
$e^+e^- \rightarrow e^+e^-$	$1.439 \cdot 10^{-13}$	$1.439 \cdot 10^{-13}$	$-1.668 \cdot 10^{-6}$	$8.112 \cdot 10^{-25}$	$8.112 \cdot 10^{-25}$	$-3.205 \cdot 10^{-6}$
$t\bar{t} \to \tau^+ \tau^-$	$-1.011 \cdot 10^{-6}$	$-1.011 \cdot 10^{-6}$	$2.968 \cdot 10^{-6}$	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	$6.095 \cdot 10^{-6}$

## 2.39 ceWIm

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o W^+ e^- \bar{\nu}_e$	$-6.065 \cdot 10^{-18}$	$-6.065 \cdot 10^{-18}$	$-1.616 \cdot 10^{-6}$	$3.256 \cdot 10^{-18}$	$3.256 \cdot 10^{-18}$	$-3.225 \cdot 10^{-6}$	
$HH \rightarrow ze^+e^-$	$3.647 \cdot 10^{-20}$	$3.647 \cdot 10^{-20}$	$-1.618 \cdot 10^{-6}$	$4.931 \cdot 10^{-19}$	$4.931 \cdot 10^{-19}$	$-3.204 \cdot 10^{-6}$	
$HW^- \to \gamma e^- \bar{\nu}_e$	$-8.143 \cdot 10^{-19}$	$-8.143 \cdot 10^{-19}$	$-1.609 \cdot 10^{-6}$	$4.962 \cdot 10^{-18}$	$4.962 \cdot 10^{-18}$	$-3.204 \cdot 10^{-6}$	
$HW^-  o \mu^- \bar{\nu}_{\mu}$	$1.028 \cdot 10^{-11}$	$1.028 \cdot 10^{-11}$	$-2.918 \cdot 10^{-7}$	$2.109 \cdot 10^{-7}$	$2.109 \cdot 10^{-7}$	$-5.689 \cdot 10^{-7}$	
$H\gamma \to e^+e^-$	$8.184 \cdot 10^{-30}$	$8.184 \cdot 10^{-30}$	$-1.601 \cdot 10^{-6}$	$1.112 \cdot 10^{-12}$	$1.112 \cdot 10^{-12}$	$-3.238 \cdot 10^{-6}$	
$Hz \to \mu^+\mu^-$	$-1.266 \cdot 10^{-11}$	$-1.266 \cdot 10^{-11}$	$-2.37 \cdot 10^{-7}$	$1.723 \cdot 10^{-7}$	$1.723 \cdot 10^{-7}$	$-5.805 \cdot 10^{-7}$	
$\mu^+\mu^- \to \tau^+\tau^-$	$-5.362 \cdot 10^{-24}$	$-1.151 \cdot 10^{-23}$	-1.147	$5.855 \cdot 10^{-7}$	$5.855 \cdot 10^{-7}$	$6.063 \cdot 10^{-6}$	
$b\bar{b}  o \mu^+\mu^-$	$7.377 \cdot 10^{-27}$	$7.869 \cdot 10^{-27}$	-0.06668	$1.015 \cdot 10^{-10}$	$1.015 \cdot 10^{-10}$	$-5.909 \cdot 10^{-7}$	
$b\bar{t} \to e^- \bar{\nu}_e$	$-8.219 \cdot 10^{-29}$	$-8.289 \cdot 10^{-29}$	-0.00854	$2.32 \cdot 10^{-14}$	$2.32 \cdot 10^{-14}$	$-3.19 \cdot 10^{-6}$	
$c\bar{c} \to \mu^+ \mu^-$	$1.757 \cdot 10^{-26}$	$1.757 \cdot 10^{-26}$	-0.0004491	$4.338 \cdot 10^{-11}$	$4.338 \cdot 10^{-11}$	$-5.763 \cdot 10^{-7}$	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$1.374 \cdot 10^{-25}$	$1.173 \cdot 10^{-25}$	0.1463	$3.902 \cdot 10^{-7}$	$3.902 \cdot 10^{-7}$	$6.099 \cdot 10^{-6}$	
$d\bar{d} \rightarrow e^+e^-$	$5.535 \cdot 10^{-30}$	$5.531 \cdot 10^{-30}$	0.0006592	$3.346 \cdot 10^{-15}$	$3.346 \cdot 10^{-15}$	$-3.198 \cdot 10^{-6}$	
$e^+\nu_\mu \to e^+\nu_\mu$	$-5.496 \cdot 10^{-29}$	$-5.127 \cdot 10^{-29}$	0.06714	$1.49 \cdot 10^{-13}$	$1.49 \cdot 10^{-13}$	$-3.223 \cdot 10^{-6}$	
$e^+\nu_e \to \mu^+\nu_\mu$	$2.586 \cdot 10^{-26}$	$5.817 \cdot 10^{-26}$	-1.25	$4.754 \cdot 10^{-9}$	$4.754 \cdot 10^{-9}$	$-5.679 \cdot 10^{-7}$	

$e^+\nu_e \to e^+\nu_e$	$-8.444 \cdot 10^{-27}$	$-8.445 \cdot 10^{-27}$	$-9.05 \cdot 10^{-5}$	$5.468 \cdot 10^{-16}$	$5.468 \cdot 10^{-16}$	$-3.219 \cdot 10^{-6}$
$e^+\tau^- \to e^+\tau^-$	$6.333 \cdot 10^{-15}$	$6.333 \cdot 10^{-15}$	$3.047 \cdot 10^{-6}$	$3.229 \cdot 10^{-5}$	$3.229 \cdot 10^{-5}$	$6.1 \cdot 10^{-6}$
$e^+e^- \to \mu^+\mu^-$	$1.135 \cdot 10^{-26}$	$5.229 \cdot 10^{-26}$	-3.606	$1.56 \cdot 10^{-9}$	$1.56 \cdot 10^{-9}$	$-5.769 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	$-1.078 \cdot 10^{-28}$	$-1.077 \cdot 10^{-28}$	0.0006664	$7.129 \cdot 10^{-13}$	$7.129 \cdot 10^{-13}$	$-3.212 \cdot 10^{-6}$
$t\bar{t} \to \tau^+ \tau^-$	$-1.275 \cdot 10^{-21}$	$-1.264 \cdot 10^{-21}$	0.008753	$2.123 \cdot 10^{-7}$	$2.123 \cdot 10^{-7}$	$6.077 \cdot 10^{-6}$
$u\bar{d} \rightarrow \mu^+ \nu_{\mu}$	$-1.15 \cdot 10^{-26}$	$-1.151 \cdot 10^{-26}$	-0.0009756	$1.14 \cdot 10^{-9}$	$1.14 \cdot 10^{-9}$	$-5.261 \cdot 10^{-7}$

## 2.40 ceWRe

		ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to W^+ e^- \bar{\nu}_e$	$-7.032 \cdot 10^{-18}$	$-7.032 \cdot 10^{-18}$	$-1.607 \cdot 10^{-6}$	$4.244 \cdot 10^{-19}$	$4.244 \cdot 10^{-19}$	$-3.228 \cdot 10^{-6}$	
$HH \rightarrow ze^+e^-$	$1.212 \cdot 10^{-18}$	$1.212 \cdot 10^{-18}$	$-1.651 \cdot 10^{-6}$	$6.045 \cdot 10^{-18}$	$6.045 \cdot 10^{-18}$	$-3.226 \cdot 10^{-6}$	
$HW^- \to \gamma e^- \bar{\nu}_e$	$7.488 \cdot 10^{-18}$	$7.488 \cdot 10^{-18}$	$-1.602 \cdot 10^{-6}$	$3.659 \cdot 10^{-18}$	$3.659 \cdot 10^{-18}$	$-3.225 \cdot 10^{-6}$	
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$-8.769 \cdot 10^{-9}$	$-8.769 \cdot 10^{-9}$	$-2.851 \cdot 10^{-7}$	$1.385 \cdot 10^{-7}$	$1.385 \cdot 10^{-7}$	$-5.778 \cdot 10^{-7}$	
$H\gamma \to e^+e^-$	$7.878 \cdot 10^{-24}$	$7.878 \cdot 10^{-24}$	$-1.612 \cdot 10^{-6}$	$1.562 \cdot 10^{-12}$	$1.562 \cdot 10^{-12}$	$-3.265 \cdot 10^{-6}$	
$Hz \to \mu^+\mu^-$	$-1.033 \cdot 10^{-9}$	$-1.033 \cdot 10^{-9}$	$-2.905 \cdot 10^{-7}$	$1.645 \cdot 10^{-8}$	$1.645 \cdot 10^{-8}$	$-6.078 \cdot 10^{-7}$	
$\mu^+\mu^- \rightarrow \tau^+\tau^-$	$-5.325 \cdot 10^{-7}$	$-5.325 \cdot 10^{-7}$	$3.042 \cdot 10^{-6}$	$1.166 \cdot 10^{-7}$	$1.166 \cdot 10^{-7}$	$6.004 \cdot 10^{-6}$	
$b\bar{b} \to \mu^+ \mu^-$	$-1.286 \cdot 10^{-10}$	$-1.286 \cdot 10^{-10}$	$-3.11 \cdot 10^{-7}$	$6.615 \cdot 10^{-10}$	$6.615 \cdot 10^{-10}$	$-5.593 \cdot 10^{-7}$	
$b\bar{t} \to e^-\bar{\nu}_e$	$-4.189 \cdot 10^{-14}$	$-4.189 \cdot 10^{-14}$	$-1.599 \cdot 10^{-6}$	$2.716 \cdot 10^{-14}$	$2.716 \cdot 10^{-14}$	$-3.203 \cdot 10^{-6}$	
$c\bar{c} \to \mu^+ \mu^-$	$-7.156 \cdot 10^{-10}$	$-7.156 \cdot 10^{-10}$	$-2.795 \cdot 10^{-7}$	$7.951 \cdot 10^{-10}$	$7.951 \cdot 10^{-10}$	$-5.785 \cdot 10^{-7}$	
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-2.942 \cdot 10^{-7}$	$-2.942 \cdot 10^{-7}$	$3.059 \cdot 10^{-6}$	$4.546 \cdot 10^{-7}$	$4.546 \cdot 10^{-7}$	$6.115 \cdot 10^{-6}$	
$d\bar{d} \to e^+e^-$	$-5.629 \cdot 10^{-15}$	$-5.629 \cdot 10^{-15}$	$-1.599 \cdot 10^{-6}$	$1.784 \cdot 10^{-14}$	$1.784 \cdot 10^{-14}$	$-3.195 \cdot 10^{-6}$	
$e^+\nu_\mu \to e^+\nu_\mu$	$1.59 \cdot 10^{-13}$	$1.59 \cdot 10^{-13}$	$-1.572 \cdot 10^{-6}$	$2.83 \cdot 10^{-13}$	$2.83 \cdot 10^{-13}$	$-3.216 \cdot 10^{-6}$	
$e^+\nu_e \to \mu^+\nu_\mu$	$-5.329 \cdot 10^{-9}$	$-5.329 \cdot 10^{-9}$	$-3.003 \cdot 10^{-7}$	$2.511 \cdot 10^{-9}$	$2.511 \cdot 10^{-9}$	$-5.575 \cdot 10^{-7}$	
$e^+\nu_e \to e^+\nu_e$	$-4.273 \cdot 10^{-14}$	$-4.273 \cdot 10^{-14}$	$-1.591 \cdot 10^{-6}$	$5.274 \cdot 10^{-15}$	$5.274 \cdot 10^{-15}$	$-3.204 \cdot 10^{-6}$	
$e^+\tau^- \to e^+\tau^-$	$-5.176 \cdot 10^{-8}$	$-5.176 \cdot 10^{-8}$	$3.052 \cdot 10^{-6}$	$1.959 \cdot 10^{-6}$	$1.959 \cdot 10^{-6}$	$6.073 \cdot 10^{-6}$	
$e^+e^- \to \mu^+\mu^-$	$-3.729 \cdot 10^{-9}$	$-3.729 \cdot 10^{-9}$	$-2.681 \cdot 10^{-7}$	$1.069 \cdot 10^{-9}$	$1.069 \cdot 10^{-9}$	$-5.61\cdot10^{-7}$	
$e^+e^- \rightarrow e^+e^-$	$-2.467 \cdot 10^{-13}$	$-2.467 \cdot 10^{-13}$	$-1.581 \cdot 10^{-6}$	$1.805 \cdot 10^{-13}$	$1.805 \cdot 10^{-13}$	$-3.214 \cdot 10^{-6}$	

#### 2.41 ced

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
$b\bar{b} \to \mu^+\mu^-$	0.002275	0.002275	0	0.02786	0.02786	0	
$d\bar{d} \rightarrow e^+e^-$	0.004052	0.004052	0	0.04962	0.04962	0	

#### 2.42 cee

		inter	rference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\mu^+\mu^- \to \tau^+\tau^-$	0.0009818	0.0009818	0	0.008008	0.008008	0		
$e^+\tau^- \to e^+\tau^-$	-0.1532	-0.1532	0	0.7226	0.7226	0		
$e^+e^-  o \mu^+\mu^-$	0.3729	0.3729	0	3.045	3.045	0		
$e^+e^- \rightarrow e^+e^-$	-0.001084	-0.001084	0	0.1636	0.1636	0		

#### 2.43 ceu

		rference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$c\bar{c} \to \mu^+ \mu^-$	-0.05296	-0.05296	0	0.3243	0.3243	0
$t\bar{t} \to \tau^+ \tau^-$	-0.008543	-0.008543	0	0.04987	0.04987	0

#### 2.44 cld

		int	erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to \mu^+ \mu^-$	0.006835	0.006835	0	0.1685	0.1685	0		
$b\bar{b}  o  u_e \bar{ u}_e$	0.007474	0.007474	0	0.1819	0.1819	0		
$d\bar{d} \to e^+e^-$	0.005101	0.005101	0	0.1257	0.1257	0		
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.000212	0.000212	0	0.005157	0.005157	0		

## 2.45 cle

		erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$\mu^+\mu^- \to \tau^+\tau^-$	0.2221	0.2221	0	1.825	1.825	0	
$e^+\nu_\mu \to e^+\nu_\mu$	-0.2783	-0.2783	0	1	1	0	
$e^+\nu_e \to e^+\nu_e$	-0.208	-0.208	0	1	1	0	
$e^+\tau^- \to e^+\tau^-$	-0.4287	-0.4287	0	2	2	0	
$e^+e^- \rightarrow \mu^+\mu^-$	0.003961	0.003961	0	0.03255	0.03255	0	
$e^+e^- \rightarrow e^+e^-$	-0.07676	-0.07676	0	3.616	3.616	0	

# 2.46 cledqIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to \mu^+ \mu^-$	$3.589 \cdot 10^{-27}$	$3.589 \cdot 10^{-27}$	0	$3.539 \cdot 10^{-11}$	$3.538 \cdot 10^{-11}$	$6.678 \cdot 10^{-5}$		
$b\bar{t} \to e^- \bar{\nu}_e$	$-1.443 \cdot 10^{-19}$	$-1.443 \cdot 10^{-19}$	$3.173 \cdot 10^{-5}$	$4.138 \cdot 10^{-16}$	$4.138 \cdot 10^{-16}$	$6.343 \cdot 10^{-5}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$8.378 \cdot 10^{-16}$	$8.378 \cdot 10^{-16}$	$3.044 \cdot 10^{-6}$	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	$6.096 \cdot 10^{-6}$		
$d\bar{d} \rightarrow e^+e^-$	$-8.855 \cdot 10^{-38}$	$-1.721 \cdot 10^{-37}$	-0.944	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	$-3.195 \cdot 10^{-6}$		
$u\bar{d} \rightarrow \mu^+ \nu_\mu$	$7.424 \cdot 10^{-21}$	$7.424 \cdot 10^{-21}$	$-2.829 \cdot 10^{-7}$	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	$-5.434 \cdot 10^{-7}$		

# 2.47 cledqRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b}  o \mu^+\mu^-$	$-7.121 \cdot 10^{-11}$	$-7.12 \cdot 10^{-11}$	$3.34 \cdot 10^{-5}$	$3.539 \cdot 10^{-11}$	$3.538 \cdot 10^{-11}$	$6.678 \cdot 10^{-5}$		
$b\bar{t} \to e^-\bar{\nu}_e$	$-8.495 \cdot 10^{-16}$	$-8.495 \cdot 10^{-16}$	$3.172 \cdot 10^{-5}$	$4.138 \cdot 10^{-16}$	$4.138 \cdot 10^{-16}$	$6.346 \cdot 10^{-5}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-4.954 \cdot 10^{-12}$	$-4.954 \cdot 10^{-12}$	$3.048 \cdot 10^{-6}$	$2.477 \cdot 10^{-12}$	$2.477 \cdot 10^{-12}$	$6.096 \cdot 10^{-6}$		
$d\bar{d} \rightarrow e^+e^-$	$-2.08 \cdot 10^{-21}$	$-2.08 \cdot 10^{-21}$	$-1.634 \cdot 10^{-6}$	$1.033 \cdot 10^{-21}$	$1.033 \cdot 10^{-21}$	$-3.195 \cdot 10^{-6}$		
$u\bar{d} \rightarrow \mu^+ \nu_{\mu}$	$-4.394 \cdot 10^{-17}$	$-4.394 \cdot 10^{-17}$	$-2.958 \cdot 10^{-7}$	$2.208 \cdot 10^{-17}$	$2.208 \cdot 10^{-17}$	$-5.887 \cdot 10^{-7}$		

## 2.48 clequ1Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b \bar t  o e^- \bar  u_e$	$2.375 \cdot 10^{-16}$	$2.375 \cdot 10^{-16}$	$-1.726 \cdot 10^{-6}$	$7.068 \cdot 10^{-13}$	$7.068 \cdot 10^{-13}$	$-3.41 \cdot 10^{-6}$		
$c\bar{c} \to \mu^+ \mu^-$	$5.386 \cdot 10^{-28}$	$3.591 \cdot 10^{-28}$	0.3332	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	$-5.511 \cdot 10^{-7}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-1.555 \cdot 10^{-13}$	$-1.555 \cdot 10^{-13}$	$3.087 \cdot 10^{-6}$	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	$6.083 \cdot 10^{-6}$		
$t\bar{t} \to \tau^+ \tau^-$	$-3.581 \cdot 10^{-22}$	$-2.617 \cdot 10^{-21}$	-6.307	$1.711 \cdot 10^{-5}$	$1.711 \cdot 10^{-5}$	$7.013 \cdot 10^{-6}$		
$u\bar{d} \rightarrow \mu^+ \nu_{\mu}$	$-1.599 \cdot 10^{-21}$	$-1.599 \cdot 10^{-21}$	$-3.126 \cdot 10^{-7}$	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	$-5.715 \cdot 10^{-7}$		

# 2.49 clequ1Re

		interfe	erence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{t} \to e^- \bar{\nu}_e$	$1.408 \cdot 10^{-12}$	$1.408 \cdot 10^{-12}$	$-1.705 \cdot 10^{-6}$	$7.068 \cdot 10^{-13}$	$7.068 \cdot 10^{-13}$	$-3.41 \cdot 10^{-6}$		
$c\bar{c} \to \mu^+ \mu^-$	$6.534 \cdot 10^{-12}$	$6.534 \cdot 10^{-12}$	$-2.908 \cdot 10^{-7}$	$3.266 \cdot 10^{-12}$	$3.266 \cdot 10^{-12}$	$-5.511 \cdot 10^{-7}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$9.216 \cdot 10^{-10}$	$9.216 \cdot 10^{-10}$	$3.049 \cdot 10^{-6}$	$4.619 \cdot 10^{-10}$	$4.619 \cdot 10^{-10}$	$6.083 \cdot 10^{-6}$		
$t\bar{t} \to \tau^+ \tau^-$	$3.402 \cdot 10^{-5}$	$3.402 \cdot 10^{-5}$	$3.498 \cdot 10^{-6}$	$1.711 \cdot 10^{-5}$	$1.711 \cdot 10^{-5}$	$7.013 \cdot 10^{-6}$		
$u\bar{d} \to \mu^+ \nu_{\mu}$	$9.481 \cdot 10^{-18}$	$9.481 \cdot 10^{-18}$	$-2.848 \cdot 10^{-7}$	$4.724 \cdot 10^{-18}$	$4.724 \cdot 10^{-18}$	$-5.715 \cdot 10^{-7}$		

# 2.50 clequ3 Im

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$b\bar{t} \to e^-\bar{\nu}_e$	$-5.73 \cdot 10^{-16}$	$-5.73 \cdot 10^{-16}$	$-1.693 \cdot 10^{-6}$	$4.67 \cdot 10^{-12}$	$4.67 \cdot 10^{-12}$	$-3.405 \cdot 10^{-6}$		
$c\bar{c} \to \mu^+ \mu^-$	$-2.195 \cdot 10^{-27}$	$-1.477 \cdot 10^{-27}$	0.3271	$4.944 \cdot 10^{-11}$	$4.944 \cdot 10^{-11}$	$-5.866 \cdot 10^{-7}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$2.194 \cdot 10^{-13}$	$2.194 \cdot 10^{-13}$	$3.053 \cdot 10^{-6}$	$1.047 \cdot 10^{-9}$	$1.047 \cdot 10^{-9}$	$6.111 \cdot 10^{-6}$		
$t \bar t  o  au^+  au^-$	$2.989 \cdot 10^{-22}$	$2.153 \cdot 10^{-21}$	-6.204	$3.429 \cdot 10^{-5}$	$3.429 \cdot 10^{-5}$	$7.029 \cdot 10^{-6}$		
$u\bar{d} \rightarrow \mu^+ \nu_{\mu}$	$-3.516 \cdot 10^{-21}$	$-3.516 \cdot 10^{-21}$	$-3.129 \cdot 10^{-7}$	$2.196 \cdot 10^{-17}$	$2.196 \cdot 10^{-17}$	$-5.92 \cdot 10^{-7}$		

## 2.51 clequ3Re

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b \bar t  o e^- \bar  u_e$	$-3.396 \cdot 10^{-12}$	$-3.396 \cdot 10^{-12}$	$-1.708 \cdot 10^{-6}$	$4.67 \cdot 10^{-12}$	$4.67 \cdot 10^{-12}$	$-3.405 \cdot 10^{-6}$		
$c\bar{c} \to \mu^+ \mu^-$	$-2.479 \cdot 10^{-11}$	$-2.479 \cdot 10^{-11}$	$-2.824 \cdot 10^{-7}$	$4.944 \cdot 10^{-11}$	$4.944 \cdot 10^{-11}$	$-5.866 \cdot 10^{-7}$		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-1.301 \cdot 10^{-9}$	$-1.301 \cdot 10^{-9}$	$2.998 \cdot 10^{-6}$	$1.047 \cdot 10^{-9}$	$1.047 \cdot 10^{-9}$	$6.111 \cdot 10^{-6}$		
$t\bar{t} \to \tau^+ \tau^-$	$3.888 \cdot 10^{-5}$	$3.888 \cdot 10^{-5}$	$3.498 \cdot 10^{-6}$	$3.429 \cdot 10^{-5}$	$3.429 \cdot 10^{-5}$	$6.999 \cdot 10^{-6}$		
$u\bar{d} \to \mu^+ \nu_\mu$	$2.084 \cdot 10^{-17}$	$2.084 \cdot 10^{-17}$	$-2.879 \cdot 10^{-7}$	$2.196 \cdot 10^{-17}$	$2.196 \cdot 10^{-17}$	$-5.92 \cdot 10^{-7}$		

### 2.52 cll

		interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
$\mu^+\mu^- \to \tau^+\tau^-$	0.05356	0.05356	0	0.3895	0.3895	0	
$\nu_{ au} \bar{\nu}_{ au}  o \nu_{ au} \bar{\nu}_{ au}$	-4.289	-4.289	0	11.61	11.61	0	
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	0.2488	0.2488	0	1.799	1.799	0	
$e^+\nu_\mu \to e^+\nu_\mu$	0.08406	0.08406	0	0.6643	0.6643	0	
$e^+\nu_e \to e^+\nu_e$	0.4294	0.4294	0	1.145	1.145	0	

$e^+\tau^- \to e^+\tau^-$	-6.683	-6.683	0	3.468	3.468	0
$e^+e^-  o \mu^+\mu^-$	0.3486	0.3486	0	2.535	2.535	0
$e^+e^- \rightarrow e^+e^-$	-0.09588	-0.09588	0	2.313	2.313	0

# 2.53 cll1

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to HH$	0.02563	0.02563	0	0.0007769	0.0007769	0	
$HH \to HHH$	$7.79 \cdot 10^{-8}$	$7.79 \cdot 10^{-8}$	0	$3.542 \cdot 10^{-9}$	$3.542 \cdot 10^{-9}$	0	
$HH \to H \tau^+ \tau^-$	$5.104 \cdot 10^{-10}$	$5.104 \cdot 10^{-10}$	0	$2.321 \cdot 10^{-11}$	$2.321 \cdot 10^{-11}$	0	
$HH  o Hbar{b}$	$1.546 \cdot 10^{-9}$	$1.546 \cdot 10^{-9}$	0	$7.031 \cdot 10^{-11}$	$7.031 \cdot 10^{-11}$	0	
$HH \to H s \bar{s}$	$6.403 \cdot 10^{-13}$	$6.403 \cdot 10^{-13}$	0	$2.911 \cdot 10^{-14}$	$2.911 \cdot 10^{-14}$	0	
$HH  o Htar{t}$	$2.928 \cdot 10^{-8}$	$2.928 \cdot 10^{-8}$	0	$1.331 \cdot 10^{-9}$	$1.331 \cdot 10^{-9}$	0	
$HH \to Hu\bar{u}$	$6.083 \cdot 10^{-17}$	$6.083 \cdot 10^{-17}$	0	$2.766 \cdot 10^{-18}$	$2.766 \cdot 10^{-18}$	0	
$HH \rightarrow Hzz$	$1.522\cdot10^{-6}$	$1.522 \cdot 10^{-6}$	0	$6.919 \cdot 10^{-8}$	$6.919 \cdot 10^{-8}$	0	
$HH \to W^+W^-$	0.02783	0.02783	0	0.0008437	0.0008437	0	
$HH  o W^+W^-\gamma$	$1.404 \cdot 10^{-6}$	$1.404 \cdot 10^{-6}$	0	$6.383 \cdot 10^{-8}$	$6.383 \cdot 10^{-8}$	0	
$HH \to W^+ \bar{t} b$	$8.186 \cdot 10^{-6}$	$8.186 \cdot 10^{-6}$	0	$3.722 \cdot 10^{-7}$	$3.722 \cdot 10^{-7}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$3.06 \cdot 10^{-8}$	$3.06 \cdot 10^{-8}$	0	$1.391 \cdot 10^{-9}$	$1.391 \cdot 10^{-9}$	0	
$HH \to W^- u \bar{d}$	$5.101 \cdot 10^{-8}$	$5.101 \cdot 10^{-8}$	0	$2.319 \cdot 10^{-9}$	$2.319 \cdot 10^{-9}$	0	
$HH \to z\bar{b}b$	$2.235 \cdot 10^{-7}$	$2.235 \cdot 10^{-7}$	0	$1.016 \cdot 10^{-8}$	$1.016 \cdot 10^{-8}$	0	
$HH \to z \nu_e \bar{\nu}_e$	$3.784 \cdot 10^{-8}$	$3.784 \cdot 10^{-8}$	0	$1.72 \cdot 10^{-9}$	$1.72 \cdot 10^{-9}$	0	
$HH \to zc\bar{c}$	$6.887 \cdot 10^{-8}$	$6.887 \cdot 10^{-8}$	0	$3.131 \cdot 10^{-9}$	$3.131 \cdot 10^{-9}$	0	
$HH \to z d\bar{d}$	$1.41 \cdot 10^{-8}$	$1.41 \cdot 10^{-8}$	0	$6.411 \cdot 10^{-10}$	$6.411 \cdot 10^{-10}$	0	
$HH \rightarrow ze^+e^-$	$2.433 \cdot 10^{-8}$	$2.433 \cdot 10^{-8}$	0	$1.106 \cdot 10^{-9}$	$1.106 \cdot 10^{-9}$	0	
$HH \to z t \bar{t}$	$2.518 \cdot 10^{-5}$	$2.518 \cdot 10^{-5}$	0	$1.145 \cdot 10^{-6}$	$1.145 \cdot 10^{-6}$	0	
$HH \rightarrow zz$	0.5759	0.5759	0	0.01746	0.01746	0	
$HW^+  o \gamma t \bar{b}$	$1.492 \cdot 10^{-7}$	$1.492 \cdot 10^{-7}$	0	$6.782 \cdot 10^{-9}$	$6.782 \cdot 10^{-9}$	0	

$HW^+ \to \gamma u \bar{d}$	$4.525 \cdot 10^{-10}$	$4.525 \cdot 10^{-10}$	0	$2.057 \cdot 10^{-11}$	$2.057 \cdot 10^{-11}$	0
$HW^+  o u \bar d$	0.001642	0.001642	0	$4.978 \cdot 10^{-5}$	$4.978 \cdot 10^{-5}$	0
$HW^-  o \bar{t}b$	0.05855	0.05855	0	0.001775	0.001775	0
$HW^-  o \gamma e^- \bar{\nu}_e$	$1.429 \cdot 10^{-9}$	$1.429 \cdot 10^{-9}$	0	$6.495 \cdot 10^{-11}$	$6.495 \cdot 10^{-11}$	0
$HW^- \to \mu^- \bar{\nu}_{\mu}$	0.0005408	0.0005408	0	$1.639 \cdot 10^{-5}$	$1.639 \cdot 10^{-5}$	0
$H\gamma  o bar{b}$	$9.252 \cdot 10^{-6}$	$9.252 \cdot 10^{-6}$	0	$2.805 \cdot 10^{-7}$	$2.805 \cdot 10^{-7}$	0
$H\gamma \to c\bar{c}$	$4.536 \cdot 10^{-6}$	$4.536 \cdot 10^{-6}$	0	$1.375 \cdot 10^{-7}$	$1.375 \cdot 10^{-7}$	0
$H\gamma \to d\bar{d}$	$1.614 \cdot 10^{-11}$	$1.614 \cdot 10^{-11}$	0	$4.892 \cdot 10^{-13}$	$4.892 \cdot 10^{-13}$	0
$H\gamma \to e^+e^-$	$4.878 \cdot 10^{-13}$	$4.878 \cdot 10^{-13}$	0	$1.479 \cdot 10^{-14}$	$1.479 \cdot 10^{-14}$	0
$H\gamma \to t\bar{t}$	0.06367	0.06367	0	0.00193	0.00193	0
$Hz \to \mu^+\mu^-$	$5.183 \cdot 10^{-5}$	$5.183 \cdot 10^{-5}$	0	$1.571 \cdot 10^{-6}$	$1.571 \cdot 10^{-6}$	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0.0007968	0.0007968	0	$2.415 \cdot 10^{-5}$	$2.415\cdot10^{-5}$	0
$Hz \to b\bar{b}$	0.001195	0.001195	0	$3.622 \cdot 10^{-5}$	$3.622 \cdot 10^{-5}$	0
$Hz \to s\bar{s}$	0.001658	0.001658	0	$5.025 \cdot 10^{-5}$	$5.025 \cdot 10^{-5}$	0
$Hz \to t\bar{t}$	0.2269	0.2269	0	0.006879	0.006879	0
$Hz \to u\bar{u}$	0.0003946	0.0003946	0	$1.196 \cdot 10^{-5}$	$1.196 \cdot 10^{-5}$	0
$W^+W^- \to H b \bar b$	$9.105 \cdot 10^{-7}$	$9.105 \cdot 10^{-7}$	0	$4.14 \cdot 10^{-8}$	$4.14\cdot 10^{-8}$	0
$W^+W^- \to Hc\bar{c}$	$7.882 \cdot 10^{-6}$	$7.882 \cdot 10^{-6}$	0	$3.584 \cdot 10^{-7}$	$3.584 \cdot 10^{-7}$	0
$W^+W^- \to H d\bar{d}$	$2.051 \cdot 10^{-6}$	$2.051 \cdot 10^{-6}$	0	$9.324 \cdot 10^{-8}$	$9.324 \cdot 10^{-8}$	0
$W^+W^- \to H t \bar t$	$1.802 \cdot 10^{-5}$	$1.802 \cdot 10^{-5}$	0	$8.194 \cdot 10^{-7}$	$8.194 \cdot 10^{-7}$	0
$W^+W^-  o W^+W^-$	3.228	3.228	0	0.09786	0.09786	0
$W^+W^- \to \gamma\gamma$	0.01285	0.01285	0	0.0003895	0.0003895	0
$W^+W^- \to \gamma\gamma\gamma$	$3.154 \cdot 10^{-7}$	$3.154 \cdot 10^{-7}$	0	$1.434 \cdot 10^{-8}$	$1.434 \cdot 10^{-8}$	0
$\bar{b}t \to \bar{d}u$	0.002178	0.002178	0	$6.603 \cdot 10^{-5}$	$6.603 \cdot 10^{-5}$	0
$\gamma W^+ \to z W^+$	0.03247	0.03247	0	0.0009844	0.0009844	0
$\mu^+\mu^- \to \tau^+\tau^-$	0.00193	0.00193	0	0.0081	0.0081	0
$ u_{\tau}\bar{\nu}_{\tau} \to \nu_{\tau}\bar{\nu}_{\tau} $	-0.6771	-0.6771	0	6.183	6.183	0
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	0.1789	0.1789	0	1.299	1.299	0
$b\bar{b}  o \gamma \gamma$	$1.213\cdot10^{-5}$	$1.213 \cdot 10^{-5}$	0	$3.678 \cdot 10^{-7}$	$3.678 \cdot 10^{-7}$	0

$b\bar{b} \to \mu^+ \mu^-$	$5.464 \cdot 10^{-5}$	$5.464 \cdot 10^{-5}$	0	$1.656 \cdot 10^{-6}$	$1.656 \cdot 10^{-6}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$4.759 \cdot 10^{-5}$	$4.759 \cdot 10^{-5}$	0	$1.443 \cdot 10^{-6}$	$1.443 \cdot 10^{-6}$	0
$b\bar{b}  o b\bar{b}$	-0.03219	-0.03219	0	0.0003366	0.0003366	0
$b\bar{b}  o d\bar{d}$	0.0001402	0.0001402	0	$4.25 \cdot 10^{-6}$	$4.25 \cdot 10^{-6}$	0
$b\bar{b}  o t\bar{t}$	1.453	1.453	0	0.05267	0.05267	0
$b\bar{b} \to u\bar{u}$	$2.852 \cdot 10^{-5}$	$2.852 \cdot 10^{-5}$	0	$8.644 \cdot 10^{-7}$	$8.644 \cdot 10^{-7}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	0.0001106	0.0001106	0	$3.351 \cdot 10^{-6}$	$3.351 \cdot 10^{-6}$	0
$c\bar{c} \to \mu^+ \mu^-$	0.0002651	0.0002651	0	$8.036 \cdot 10^{-6}$	$8.036 \cdot 10^{-6}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0.0004568	0.0004568	0	$1.385 \cdot 10^{-5}$	$1.385 \cdot 10^{-5}$	0
$d\bar{d} \to c\bar{c}$	$2.832 \cdot 10^{-5}$	$2.832 \cdot 10^{-5}$	0	$8.584 \cdot 10^{-7}$	$8.584 \cdot 10^{-7}$	0
$d\bar{d} \to e^+e^-$	$7.945 \cdot 10^{-5}$	$7.945 \cdot 10^{-5}$	0	$2.408 \cdot 10^{-6}$	$2.408 \cdot 10^{-6}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	0.003524	0.003524	0	0.0001068	0.0001068	0
$e^+\nu_e \to \mu^+\nu_\mu$	0.6185	0.6185	0	2.901	2.901	0
$e^+\nu_e \to e^+\nu_e$	0.2471	0.2471	0	0.7222	0.7222	0
$e^+\tau^- \to e^+\tau^-$	-0.1666	-0.1666	0	0.7124	0.7124	0
$e^+e^- \to \mu^+\mu^-$	0.4218	0.4218	0	3.07	3.07	0
$e^+e^- \rightarrow e^+e^-$	0.0006611	0.0006611	0	0.1636	0.1636	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.00043	0.00043	0	$1.303 \cdot 10^{-5}$	$1.303 \cdot 10^{-5}$	0
$s\bar{s} \to s\bar{s}$	-0.02122	-0.02122	0	0.0001593	0.0001593	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.0001133	0.0001133	0	$3.433 \cdot 10^{-6}$	$3.433 \cdot 10^{-6}$	0
$t\bar{t} \to \tau^+ \tau^-$	0.0001083	0.0001083	0	$3.283 \cdot 10^{-6}$	$3.283 \cdot 10^{-6}$	0
$t\bar{t} \to c\bar{c}$	0.0002578	0.0002578	0	$7.815 \cdot 10^{-6}$	$7.815 \cdot 10^{-6}$	0
$t\bar{t} \to d\bar{d}$	$8.981 \cdot 10^{-5}$	$8.981 \cdot 10^{-5}$	0	$2.722 \cdot 10^{-6}$	$2.722 \cdot 10^{-6}$	0
$t\bar{t} \to s\bar{s}$	0.000115	0.000115	0	$3.487 \cdot 10^{-6}$	$3.487 \cdot 10^{-6}$	0
$t\bar{t} \to t\bar{t}$	-0.04661	-0.04661	0	0.003535	0.003535	0
$u\bar{d} \to \mu^+ \nu_{\mu}$	$2.465 \cdot 10^{-5}$	$2.465 \cdot 10^{-5}$	0	$7.471 \cdot 10^{-7}$	$7.471 \cdot 10^{-7}$	0
$u\bar{d} \to c\bar{s}$	0.001996	0.001996	0	$6.051\cdot10^{-5}$	$6.051\cdot10^{-5}$	0
$u\bar{d} \to u\bar{d}$	0.003356	0.003356	0	0.005672	0.005672	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.0001621	0.0001621	0	$4.913 \cdot 10^{-6}$	$4.913 \cdot 10^{-6}$	0

$u\bar{u} \to u\bar{u}$	-0.02921	-0.02921	0	0.0002191	0.0002191	0
$zz  o W^+W^-$	3.932	3.932	0	0.1192	0.1192	0
$zz \rightarrow zz$	0.009894	0.009894	0	0.0002999	0.0002999	0

# $2.54 \quad \text{clq1}$

		inter	ference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o \mu^+\mu^-$	$6.9\cdot10^{-5}$	$6.9\cdot10^{-5}$	0	0.0003546	0.0003546	0	
$b\bar{b}  o  u_e \bar{ u}_e$	-0.003938	-0.003938	0	0.01672	0.01672	0	
$c\bar{c} \to \mu^+ \mu^-$	-0.07603	-0.07603	0	0.3243	0.3243	0	
$d\bar{d} \to e^+e^-$	0.0001404	0.0001404	0	0.0007244	0.0007244	0	
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	-0.004991	-0.004991	0	0.02119	0.02119	0	
$t \bar t  o  u_\mu ar u_\mu$	0.03452	0.03452	0	0.1818	0.1818	0	
$t\bar{t} \to \tau^+ \tau^-$	-0.0125	-0.0125	0	0.04987	0.04987	0	
$u\bar{u} \to \nu_e \bar{\nu}_e$	0.02824	0.02824	0	0.1453	0.1453	0	

# 2.55 clq3

		erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$b\bar{b} \to \mu^+\mu^-$	0.005402	0.005402	0	0.02786	0.02786	0
$b\bar{b}  o  u_e \bar{ u}_e$	0.005362	0.005362	0	0.02277	0.02277	0
$b\bar{t} \to e^- \bar{\nu}_e$	0.017	0.017	0	0.07922	0.07922	0
$c\bar{c} \to \mu^+ \mu^-$	0.02352	0.02352	0	0.1003	0.1003	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0.07023	0.07023	0	0.3273	0.3273	0
$d\bar{d} \to e^+e^-$	0.009621	0.009621	0	0.04962	0.04962	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0.06019	0.06019	0	0.2556	0.2556	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	0.01709	0.01709	0	0.09213	0.09213	0

$t\bar{t} \to \tau^+ \tau^-$	0.004073	0.004073	0	0.01393	0.01393	0
$u\bar{d} \to \mu^+ \nu_\mu$	0.003789	0.003789	0	0.01766	0.01766	0
$u\bar{u} \rightarrow \nu_e \bar{\nu}_e$	0.02594	0.02594	0	0.1334	0.1334	0

## 2.56 clu

		interfer	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$c\bar{c} \to \mu^+ \mu^-$	$-5.201 \cdot 10^{-6}$	$-5.201 \cdot 10^{-6}$	0	$6.255 \cdot 10^{-5}$	$6.255 \cdot 10^{-5}$	0		
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.0003921	-0.0003921	0	0.0283	0.0283	0		
$t\bar{t} \to \tau^+ \tau^-$	-0.01352	-0.01352	0	0.1378	0.1378	0		
$u\bar{u} \to \nu_e \bar{\nu}_e$	-0.003165	-0.003165	0	0.0385	0.0385	0		

# 2.57 cqd1

		inter	ference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
$b\bar{b}  o b\bar{b}$	0.0966	0.0966	0	2.128	2.128	0		
$b\bar{b} \to d\bar{d}$	-0.01366	-0.01366	0	0.9849	0.9849	0		
$b\bar{b}  o t\bar{t}$	-0.00176	-0.00176	0	0.006512	0.006512	0		
$b\bar{b} \to u\bar{u}$	-0.01241	-0.01241	0	0.9298	0.9298	0		
$d\bar{d} \to c\bar{c}$	-0.01254	-0.01254	0	0.9399	0.9399	0		
$s\bar{s} \to s\bar{s}$	0.07387	0.07387	0	2.219	2.219	0		
$t\bar{t} \to d\bar{d}$	-0.009935	-0.009935	0	0.6227	0.6227	0		
$t\bar{t} \to s\bar{s}$	-0.009174	-0.009174	0	0.5657	0.5657	0		
$u\bar{d} \to u\bar{d}$	0.2063	0.2063	0	1	1	0		

# 2.58 cqd8

	interference			square	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	${\tt mod1} \qquad {\tt mod2} \qquad 1-{\tt mod2}$	nod2/mod1			
$b\bar{b}  o b\bar{b}$	-5.121	-5.121	0	$0.4729 \qquad 0.4729$	0			
$b\bar{b} \to d\bar{d}$	0.6486	0.6486	0	$0.2189 \qquad 0.2189$	0			
$b\bar{b} \to t\bar{t}$	0.0239	0.0239	0	0.001447  0.001447	0			
$b\bar{b} \to u\bar{u}$	0.6123	0.6123	0	$0.2066 \qquad 0.2066$	0			
$d\bar{d} \to c\bar{c}$	0.6189	0.6189	0	$0.2089 \qquad 0.2089$	0			
$s\bar{s} \to s\bar{s}$	-3.832	-3.832	0	$0.4932 \qquad 0.4932$	0			
$t\bar{t} \to d\bar{d}$	0.4297	0.4297	0	$0.1384 \qquad 0.1384$	0			
$t\bar{t} \to s\bar{s}$	0.3921	0.3921	0	$0.1257 \qquad 0.1257$	0			
$u\bar{d} \to u\bar{d}$	-8.328	-8.328	0	$0.2222 \qquad 0.2222$	0			

# **2.59** cqe

		interfer	rence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$b\bar{b} \to \mu^+ \mu^-$	-0.01299	-0.01299	0	0.312	0.312	0
$c\bar{c} \to \mu^+ \mu^-$	$-2.593 \cdot 10^{-6}$	$-2.593 \cdot 10^{-6}$	0	$6.255 \cdot 10^{-5}$	$6.255 \cdot 10^{-5}$	0
$d\bar{d} \rightarrow e^+e^-$	-0.01261	-0.01261	0	0.303	0.303	0
$t\bar{t} \to  au^+ au^-$	-0.007145	-0.007145	0	0.1378	0.1378	0

# 2.60 cqq1

		interfe	erence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o b\bar{b}$	-5.266	-5.266	0	5.952	5.952	0	
$b\bar{b} \to d\bar{d}$	0.03944	0.03944	0	0.3558	0.3558	0	
$b\bar{b} \to t\bar{t}$	-4.884	-4.884	0	3.381	3.381	0	
$b\bar{b} \to u\bar{u}$	-0.0005319	-0.0005319	0	0.005115	0.005115	0	

$d\bar{d} \to c\bar{c}$	-0.0003863	-0.0003863	0	0.003719	0.003719	0
$s\bar{s} \to s\bar{s}$	-2.89	-2.89	0	4.772	4.772	0
$t\bar{t} \to c\bar{c}$	0.05405	0.05405	0	0.4746	0.4746	0
$t\bar{t} \to d\bar{d}$	-0.02242	-0.02242	0	0.2318	0.2318	0
$t\bar{t} \to s\bar{s}$	-0.0304	-0.0304	0	0.3086	0.3086	0
$t\bar{t} \to t\bar{t}$	-0.06188	-0.06188	0	1.563	1.563	0
$u\bar{d} \to u\bar{d}$	4.335	4.335	0	3.392	3.392	0
$u\bar{u} \to u\bar{u}$	-3.013	-3.013	0	4.847	4.847	0

# 2.61 cqq11

		inte		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
$\bar{b}t \to \bar{d}u$	0.1116	0.1116	$-8.957 \cdot 10^{-8}$	1.561	1.561	0
$b\bar{b}  o b\bar{b}$	-5.266	-5.266	0	5.952	5.952	0
$b\bar{b} \to d\bar{d}$	0.2475	0.2475	0	0.3558	0.3558	$-2.81 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	-4.884	-4.884	0	3.381	3.381	0
$s\bar{s} \to s\bar{s}$	-2.89	-2.89	$6.92\cdot10^{-8}$	4.772	4.772	$1.257 \cdot 10^{-7}$
$t\bar{t} \to c\bar{c}$	0.4091	0.4091	0	0.4746	0.4746	$-2.107 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	-0.06188	-0.06188	0	1.563	1.563	0
$u\bar{d} \to c\bar{s}$	0.1023	0.1023	$1.955 \cdot 10^{-7}$	1.43	1.43	0
$u\bar{d} \to u\bar{d}$	4.335	4.335	$-4.152 \cdot 10^{-7}$	3.392	3.392	$2.948 \cdot 10^{-8}$
$u\bar{u} \to u\bar{u}$	-3.013	-3.013	$6.638 \cdot 10^{-8}$	4.847	4.847	$1.444 \cdot 10^{-7}$

# $2.62 \quad \mathrm{cqq3}$

		int	erference	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	0.6698	0.6698	0	6.244	6.244	0

b ar b  o b ar b	-5.266	-5.266	$3.798 \cdot 10^{-8}$	5.952	5.952	$6.72 \cdot 10^{-8}$
$b\bar{b}  o d\bar{d}$	0.03944	0.03944	0	0.3558	0.3558	0
$b\bar{b} \to t\bar{t}$	-17.95	-17.95	0	12.4	12.4	0
$b\bar{b} \to u\bar{u}$	0.0005319	0.0005319	0	0.005115	0.005115	0
$d\bar{d} \to c\bar{c}$	0.0003863	0.0003863	0	0.003719	0.003719	0
$s\bar{s} \to s\bar{s}$	-2.89	-2.89	0	4.772	4.772	0
$t\bar{t} \to c\bar{c}$	0.05405	0.05405	0	0.4746	0.4746	0
$t\bar{t} \to d\bar{d}$	0.02242	0.02242	0	0.2318	0.2318	0
$t\bar{t} \to s\bar{s}$	0.0304	0.0304	0	0.3086	0.3086	0
$t\bar{t} \to t\bar{t}$	-0.06188	-0.06188	$3.232 \cdot 10^{-8}$	1.563	1.563	$6.399 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	0.6138	0.6138	0	5.721	5.721	0
$u\bar{d} \to u\bar{d}$	-56.66	-56.66	0	12.44	12.44	0
$u\bar{u} \to u\bar{u}$	-3.013	-3.013	0	4.847	4.847	0

# 2.63 cqq31

		$\mathrm{int}\epsilon$	erference	square
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2  \\ \verb mod1  & \\$
$\bar{b}t \to \bar{d}u$	-0.1116	-0.1116	$-8.957 \cdot 10^{-8}$	1.561   1.561   0
$b\bar{b}  o b\bar{b}$	-5.266	-5.266	$3.798 \cdot 10^{-8}$	$5.952   5.952   6.72 \cdot 10^{-8}$
$b\bar{b}  o d\bar{d}$	0.2475	0.2475	0	$0.3558  0.3558  2.81 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	-17.95	-17.95	0	12.4   12.4   0
$b\bar{b} \to u\bar{u}$	0.006474	0.006474	$1.545 \cdot 10^{-8}$	$0.02046  0.02046 \qquad \qquad 0$
$d\bar{d} \to c\bar{c}$	0.004649	0.004649	0	$0.01488  0.01488 \qquad \qquad 0$
$s\bar{s} \to s\bar{s}$	-2.89	-2.89	$-3.46 \cdot 10^{-8}$	$4.772 \qquad 4.772 \qquad -8.383 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	0.4091	0.4091	0	$0.4746  0.4746  2.107 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	0.4475	0.4475	0	0.9271  0.9271  0
$t\bar{t} \to s\bar{s}$	0.5433	0.5433	0	1.234   1.234   0
$t\bar{t} \to t\bar{t}$	-0.06188	-0.06188	$3.232 \cdot 10^{-8}$	$1.563   1.563   6.399 \cdot 10^{-8}$

$u\bar{d} \to c\bar{s}$	-0.1023	-0.1023	$1.955 \cdot 10^{-7}$	1.43	1.43	0
$u\bar{d} \to u\bar{d}$	-56.66	-56.66	$-3.53 \cdot 10^{-8}$	12.44	12.44	$-8.039 \cdot 10^{-8}$
$u\bar{u} \to u\bar{u}$	-3.013	-3.013	$-3.319 \cdot 10^{-8}$	4.847	4.847	$-6.189 \cdot 10^{-8}$

# 2.64 cqu1

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	-0.1453	-0.1453	0	0.1398	0.1398	0	
$b\bar{b} \to u\bar{u}$	0.0002107	0.0002107	0	0.007625	0.007625	0	
$d\bar{d} \to c\bar{c}$	0.004229	0.004229	0	0.1524	0.1524	0	
$t\bar{t} \to c\bar{c}$	0.01017	0.01017	0	0.01186	0.01186	0	
$t\bar{t} \to d\bar{d}$	-0.00493	-0.00493	0	0.04579	0.04579	0	
$t\bar{t} \to s\bar{s}$	0.00157	0.00157	0	0.28	0.28	0	
$t\bar{t} \to t\bar{t}$	-155.4	-155.4	0	7.201	7.201	0	
$u\bar{d} \to u\bar{d}$	-0.2863	-0.2863	0	1	1	0	
$u\bar{u} \to u\bar{u}$	-7.091	-7.091	0	2	2	0	

# 2.65 cqu8

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b}  o t\bar{t}$	-0.07894	-0.07894	0	0.03107	0.03107	0	
$b\bar{b} \to u\bar{u}$	0.005033	0.005033	0	0.001694	0.001694	0	
$d\bar{d} \to c\bar{c}$	0.1003	0.1003	0	0.03386	0.03386	0	
$t\bar{t} \to c\bar{c}$	0.04712	0.04712	0	0.002637	0.002637	0	
$t\bar{t} \to d\bar{d}$	0.0498	0.0498	0	0.01018	0.01018	0	
$t \bar t  o s \bar s$	0.204	0.204	0	0.06222	0.06222	0	
$t\bar{t} \to t\bar{t}$	-661.9	-661.9	0	1.534	1.534	0	

$u\bar{d} \to u\bar{d}$	-9.578	-9.578	0	0.2222	0.2222	0
$u\bar{u} \to u\bar{u}$	-95.76	-95.76	0	0.4445	0.4445	0

# 2.66 cquqd11Im

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$8.889 \cdot 10^{-15}$	$8.889 \cdot 10^{-15}$	$2.25 \cdot 10^{-8}$	$3.5 \cdot 10^{-11}$	$3.5 \cdot 10^{-11}$	$5.714 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	$-8.817 \cdot 10^{-21}$	$-3.9 \cdot 10^{-20}$	-3.423	0.0003716	0.0003716	$6.689 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$3.509 \cdot 10^{-31}$	$5.284 \cdot 10^{-31}$	-0.5058	$3.383 \cdot 10^{-16}$	$3.383 \cdot 10^{-16}$	$6.672 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$9.995 \cdot 10^{-32}$	$-3.427 \cdot 10^{-32}$	1.343	$2.917 \cdot 10^{-15}$	$2.917 \cdot 10^{-15}$	0		
$t\bar{t} \to d\bar{d}$	$-1.786 \cdot 10^{-27}$	$-1.499 \cdot 10^{-27}$	0.1608	$1.622 \cdot 10^{-11}$	$1.622 \cdot 10^{-11}$	$6.166 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$2.958 \cdot 10^{-24}$	$6.688 \cdot 10^{-24}$	-1.261	$3.933 \cdot 10^{-8}$	$3.933 \cdot 10^{-8}$	$7.627 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-8.074 \cdot 10^{-19}$	$-8.074 \cdot 10^{-19}$	0	$5.286 \cdot 10^{-15}$	$5.286 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$2.418 \cdot 10^{-33}$	$2.418 \cdot 10^{-33}$	$-2.192 \cdot 10^{-6}$	$5.817 \cdot 10^{-20}$	$5.817 \cdot 10^{-20}$	0		

# 2.67 cquqd11Re

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-5.271 \cdot 10^{-11}$	$-5.271 \cdot 10^{-11}$	$3.795 \cdot 10^{-8}$	$3.5 \cdot 10^{-11}$	$3.5\cdot10^{-11}$	$5.714 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	-0.0001804	-0.0001804	$3.342 \cdot 10^{-5}$	0.0003716	0.0003716	$6.689 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$4.877 \cdot 10^{-15}$	$4.877 \cdot 10^{-15}$	$3.336 \cdot 10^{-5}$	$3.383 \cdot 10^{-16}$	$3.383 \cdot 10^{-16}$	$6.672 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-8.498 \cdot 10^{-16}$	$-8.498 \cdot 10^{-16}$	0	$2.917 \cdot 10^{-15}$	$2.917 \cdot 10^{-15}$	0		
$t\bar{t} \to d\bar{d}$	$2.411 \cdot 10^{-11}$	$2.411 \cdot 10^{-11}$	$4.147 \cdot 10^{-8}$	$1.622 \cdot 10^{-11}$	$1.622 \cdot 10^{-11}$	$6.166 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$-1.343 \cdot 10^{-8}$	$-1.343 \cdot 10^{-8}$	0	$3.933 \cdot 10^{-8}$	$3.933 \cdot 10^{-8}$	$5.085 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-4.797 \cdot 10^{-15}$	$-4.797 \cdot 10^{-15}$	0	$5.286 \cdot 10^{-15}$	$5.286 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$5.523 \cdot 10^{-20}$	$5.523 \cdot 10^{-20}$	0	$5.817 \cdot 10^{-20}$	$5.817 \cdot 10^{-20}$	0		

# $2.68 \quad cquqd1 Im$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$5.965 \cdot 10^{-14}$	$5.965 \cdot 10^{-14}$	$3.353 \cdot 10^{-8}$	$1.771 \cdot 10^{-10}$	$1.771 \cdot 10^{-10}$	$5.646 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	$-2.682 \cdot 10^{-20}$	$-5.659 \cdot 10^{-21}$	0.789	0.0002783	0.0002783	$6.69 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$2.761 \cdot 10^{-30}$	$2.695 \cdot 10^{-30}$	0.02381	$4.436 \cdot 10^{-14}$	$4.436 \cdot 10^{-14}$	$6.672 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-1.403 \cdot 10^{-30}$	$-1.403 \cdot 10^{-30}$	0	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0		
$t\bar{t} \to d\bar{d}$	$2.227 \cdot 10^{-26}$	$1.042 \cdot 10^{-26}$	0.5324	$3.545 \cdot 10^{-10}$	$3.545 \cdot 10^{-10}$	$5.641 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$-6.99 \cdot 10^{-25}$	$-2.404 \cdot 10^{-23}$	-33.39	$1.406 \cdot 10^{-7}$	$1.406 \cdot 10^{-7}$	$7.112 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-3.221 \cdot 10^{-18}$	$-3.221 \cdot 10^{-18}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$2.182 \cdot 10^{-33}$	$2.183 \cdot 10^{-33}$	-0.000158	$5.864 \cdot 10^{-20}$	$5.864 \cdot 10^{-20}$	0		

# 2.69 cquqd1Re

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1		
$\bar{b}t \to \bar{d}u$	$-3.54 \cdot 10^{-10}$	$-3.54 \cdot 10^{-10}$	$2.825 \cdot 10^{-8}$	$1.771 \cdot 10^{-10}$	$1.771 \cdot 10^{-10}$	$5.646 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	-0.0001804	-0.0001804	$3.342 \cdot 10^{-5}$	0.0003716	0.0003716	$6.689 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$-8.915 \cdot 10^{-14}$	$-8.915 \cdot 10^{-14}$	$3.337 \cdot 10^{-5}$	$4.436 \cdot 10^{-14}$	$4.436 \cdot 10^{-14}$	$6.674 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-3.856 \cdot 10^{-14}$	$-3.856 \cdot 10^{-14}$	0	$1.914 \cdot 10^{-14}$	$1.914 \cdot 10^{-14}$	0		
$t\bar{t} \to d\bar{d}$	$-7.019 \cdot 10^{-10}$	$-7.019 \cdot 10^{-10}$	$2.85 \cdot 10^{-8}$	$3.545 \cdot 10^{-10}$	$3.545 \cdot 10^{-10}$	$5.641 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$-2.79 \cdot 10^{-7}$	$-2.79 \cdot 10^{-7}$	0	$1.406 \cdot 10^{-7}$	$1.406 \cdot 10^{-7}$	$7.112 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-1.922 \cdot 10^{-14}$	$-1.922 \cdot 10^{-14}$	0	$9.582 \cdot 10^{-15}$	$9.582 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$5.523 \cdot 10^{-20}$	$5.523 \cdot 10^{-20}$	0	$5.817 \cdot 10^{-20}$	$5.817 \cdot 10^{-20}$	0		

# $2.70 \quad cquqd81 Im$

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	$1.185 \cdot 10^{-14}$	$1.185 \cdot 10^{-14}$	$8.437 \cdot 10^{-8}$	$7.777 \cdot 10^{-12}$	$7.777 \cdot 10^{-12}$	$6.429 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	$4.174 \cdot 10^{-20}$	$5.995 \cdot 10^{-20}$	-0.4362	$5.365 \cdot 10^{-5}$	$5.365 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$
$b\bar{b} \to u\bar{u}$	$1.234 \cdot 10^{-31}$	$-1.308 \cdot 10^{-31}$	2.06	$7.517 \cdot 10^{-17}$	$7.517 \cdot 10^{-17}$	$6.674 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$2.745 \cdot 10^{-31}$	$1.735 \cdot 10^{-32}$	0.9368	$6.482 \cdot 10^{-16}$	$6.482 \cdot 10^{-16}$	0
$t\bar{t} \to d\bar{d}$	$5.388 \cdot 10^{-28}$	$1.782 \cdot 10^{-27}$	-2.308	$3.604 \cdot 10^{-12}$	$3.604 \cdot 10^{-12}$	$5.549 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$1.12 \cdot 10^{-23}$	$1.538 \cdot 10^{-23}$	-0.3723	$8.74 \cdot 10^{-9}$	$8.74 \cdot 10^{-9}$	$5.721 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	$-1.076 \cdot 10^{-18}$	$-1.076 \cdot 10^{-18}$	0	$1.175 \cdot 10^{-15}$	$1.175 \cdot 10^{-15}$	0
$u\bar{d} \to u\bar{d}$	$4.372 \cdot 10^{-34}$	$4.372 \cdot 10^{-34}$	0	$1.18 \cdot 10^{-20}$	$1.18 \cdot 10^{-20}$	0

# $2.71 \quad {\rm cquqd} 81 {\rm Re}$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-6.164 \cdot 10^{-11}$	$-6.164 \cdot 10^{-11}$	$3.244 \cdot 10^{-8}$	$5.991 \cdot 10^{-12}$	$5.991 \cdot 10^{-12}$	$6.677 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	0.0002236	0.0002236	$3.346 \cdot 10^{-5}$	$5.757 \cdot 10^{-5}$	$5.757 \cdot 10^{-5}$	$6.69 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$-4.078 \cdot 10^{-14}$	$-4.078 \cdot 10^{-14}$	$3.337 \cdot 10^{-5}$	$9.166 \cdot 10^{-15}$	$9.166 \cdot 10^{-15}$	$6.674 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$-1.769 \cdot 10^{-14}$	$-1.769 \cdot 10^{-14}$	0	$3.998 \cdot 10^{-15}$	$3.998 \cdot 10^{-15}$	0		
$t\bar{t} \to d\bar{d}$	$-2.632 \cdot 10^{-10}$	$-2.632 \cdot 10^{-10}$	$3.799 \cdot 10^{-8}$	$4.902 \cdot 10^{-11}$	$4.902 \cdot 10^{-11}$	$6.12 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$-9.954 \cdot 10^{-8}$	$-9.954 \cdot 10^{-8}$	$3.014 \cdot 10^{-8}$	$1.766 \cdot 10^{-8}$	$1.766 \cdot 10^{-8}$	$5.663 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-3.513 \cdot 10^{-15}$	$-3.513 \cdot 10^{-15}$	0	$3.441 \cdot 10^{-16}$	$3.441 \cdot 10^{-16}$	0		
$u\bar{d} \to u\bar{d}$	$1.3 \cdot 10^{-19}$	$1.3 \cdot 10^{-19}$	0	$1.173 \cdot 10^{-20}$	$1.173 \cdot 10^{-20}$	0		

# 2.72 cquqd8Im

		interfer	ence	square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
$\bar{b}t \to \bar{d}u$	$3.143 \cdot 10^{-27}$	$1.837 \cdot 10^{-27}$	0.4155	$3.936 \cdot 10^{-11}$	$3.936 \cdot 10^{-11}$	$7.622 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	$4.174 \cdot 10^{-20}$	$5.995 \cdot 10^{-20}$	-0.4362	$5.365 \cdot 10^{-5}$	$5.365 \cdot 10^{-5}$	$6.691 \cdot 10^{-5}$

$b\bar{b} \to u\bar{u}$	$-1.244 \cdot 10^{-31}$	$-5.626 \cdot 10^{-31}$	-3.524	$9.859 \cdot 10^{-15}$	$9.858 \cdot 10^{-15}$	$6.673 \cdot 10^{-5}$
$d\bar{d} \to c\bar{c}$	$4.485 \cdot 10^{-31}$	$4.485 \cdot 10^{-31}$	0	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0
$t\bar{t} \to d\bar{d}$	$3.873 \cdot 10^{-27}$	$-1.854 \cdot 10^{-27}$	1.479	$7.878 \cdot 10^{-11}$	$7.878 \cdot 10^{-11}$	$6.347 \cdot 10^{-8}$
$t \bar t  o s \bar s$	$-1.888 \cdot 10^{-24}$	$-3.627 \cdot 10^{-24}$	-0.9212	$3.124 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$6.401 \cdot 10^{-8}$
$u\bar{d} \to c\bar{s}$	$-1.142 \cdot 10^{-31}$	$-1.142 \cdot 10^{-31}$	0	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0
$u\bar{d} \to u\bar{d}$	$4.372 \cdot 10^{-34}$	$4.372 \cdot 10^{-34}$	0	$1.18 \cdot 10^{-20}$	$1.18 \cdot 10^{-20}$	0

## 2.73 cquqd8Re

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
$\bar{b}t \to \bar{d}u$	$-9.674 \cdot 10^{-27}$	$-7.597 \cdot 10^{-31}$	0.9999	$3.936 \cdot 10^{-11}$	$3.936 \cdot 10^{-11}$	$7.622 \cdot 10^{-8}$		
$b\bar{b} \to t\bar{t}$	0.0002236	0.0002236	$3.346 \cdot 10^{-5}$	$5.757 \cdot 10^{-5}$	$5.757 \cdot 10^{-5}$	$6.69 \cdot 10^{-5}$		
$b\bar{b} \to u\bar{u}$	$3.289 \cdot 10^{-15}$	$3.288 \cdot 10^{-15}$	$3.336 \cdot 10^{-5}$	$9.859 \cdot 10^{-15}$	$9.858 \cdot 10^{-15}$	$6.673 \cdot 10^{-5}$		
$d\bar{d} \to c\bar{c}$	$1.435 \cdot 10^{-15}$	$1.435 \cdot 10^{-15}$	0	$4.254 \cdot 10^{-15}$	$4.254 \cdot 10^{-15}$	0		
$t\bar{t} \to d\bar{d}$	$1.551 \cdot 10^{-11}$	$1.551 \cdot 10^{-11}$	0	$7.878 \cdot 10^{-11}$	$7.878 \cdot 10^{-11}$	$5.077 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	$5.32 \cdot 10^{-9}$	$5.32 \cdot 10^{-9}$	$3.759 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$3.124 \cdot 10^{-8}$	$6.401 \cdot 10^{-8}$		
$u\bar{d} \to c\bar{s}$	$-6.313 \cdot 10^{-31}$	$-6.313 \cdot 10^{-31}$	0	$2.129 \cdot 10^{-15}$	$2.129 \cdot 10^{-15}$	0		
$u\bar{d} \to u\bar{d}$	$1.3 \cdot 10^{-19}$	$1.3 \cdot 10^{-19}$	0	$1.173 \cdot 10^{-20}$	$1.173 \cdot 10^{-20}$	0		

## 2.74 cuBIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to zc\bar{c}$	$-1.273 \cdot 10^{-12}$	$-1.273 \cdot 10^{-12}$	0	$1.336 \cdot 10^{-11}$	$1.336 \cdot 10^{-11}$	0		
$HH  o zt\bar{t}$	$6.195 \cdot 10^{-6}$	$6.195 \cdot 10^{-6}$	$3.228 \cdot 10^{-8}$	$3.409 \cdot 10^{-5}$	$3.409 \cdot 10^{-5}$	$5.866 \cdot 10^{-8}$		
$HW^+ \to \gamma t \bar{b}$	$2.897 \cdot 10^{-6}$	$2.897 \cdot 10^{-6}$	$3.452 \cdot 10^{-8}$	$3.726 \cdot 10^{-6}$	$3.726 \cdot 10^{-6}$	$5.367 \cdot 10^{-8}$		
$HW^+ \to \gamma u \bar{d}$	$-1.301 \cdot 10^{-15}$	$-1.301 \cdot 10^{-15}$	0	$5.3 \cdot 10^{-17}$	$5.3 \cdot 10^{-17}$	0		
$H\gamma \to c\bar{c}$	$2.001 \cdot 10^{-22}$	$2.001 \cdot 10^{-22}$	0	$3.391 \cdot 10^{-5}$	$3.391 \cdot 10^{-5}$	0		

$H\gamma \to t\bar{t}$	$4.95 \cdot 10^{-17}$	$4.602 \cdot 10^{-17}$	0.07023	2.742	2.742	$7.293 \cdot 10^{-8}$
$Hz \to t\bar{t}$	$5.147 \cdot 10^{-5}$	$5.147 \cdot 10^{-5}$	$1.943 \cdot 10^{-8}$	0.8169	0.8169	$4.897 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$-1.949 \cdot 10^{-14}$	$-1.949 \cdot 10^{-14}$	0	$2.362 \cdot 10^{-11}$	$2.362 \cdot 10^{-11}$	0
$W^+W^-  o Hc\bar{c}$	$-1.021 \cdot 10^{-14}$	$-1.021 \cdot 10^{-14}$	0	$3.087 \cdot 10^{-13}$	$3.087 \cdot 10^{-13}$	0
$W^+W^-  o H t \bar t$	$1.418 \cdot 10^{-7}$	$1.418 \cdot 10^{-7}$	$7.052 \cdot 10^{-8}$	$8.423 \cdot 10^{-9}$	$8.423 \cdot 10^{-9}$	$5.936 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	$-1.824 \cdot 10^{-18}$	$-1.872 \cdot 10^{-18}$	-0.02642	0.0008378	0.0008378	$5.968 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$1.948 \cdot 10^{-29}$	$1.948 \cdot 10^{-29}$	0	$5.109 \cdot 10^{-14}$	$5.109 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$1.375 \cdot 10^{-23}$	$1.375 \cdot 10^{-23}$	0	$8.89 \cdot 10^{-9}$	$8.89 \cdot 10^{-9}$	0
$d\bar{d} \to c\bar{c}$	$-4.225 \cdot 10^{-25}$	$3.622 \cdot 10^{-24}$	9.572	$5.275 \cdot 10^{-8}$	$5.275 \cdot 10^{-8}$	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$5.654 \cdot 10^{-20}$	$5.655 \cdot 10^{-20}$	$-5.201 \cdot 10^{-5}$	0.0004585	0.0004585	$6.543 \cdot 10^{-8}$
$t\bar{t} \to \tau^+ \tau^-$	$1.015 \cdot 10^{-18}$	$1.015 \cdot 10^{-18}$	0	0.002666	0.002666	$3.752 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$3.215 \cdot 10^{-19}$	$3.216 \cdot 10^{-19}$	-0.0001372	0.0006012	0.0006012	$4.99 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	$-5.33 \cdot 10^{-19}$	$-5.33 \cdot 10^{-19}$	$-5.794 \cdot 10^{-5}$	0.0005937	0.0005937	$6.738 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$1.088 \cdot 10^{-18}$	$1.088 \cdot 10^{-18}$	$-5.138 \cdot 10^{-5}$	0.0009644	0.0009644	$6.222 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$-3.774 \cdot 10^{-14}$	$-3.783 \cdot 10^{-14}$	-0.002547	13.12	13.12	0
$u\bar{d} \to u\bar{d}$	$-1.715 \cdot 10^{-23}$	$-1.715 \cdot 10^{-23}$	$-2.624 \cdot 10^{-6}$	$7.443 \cdot 10^{-12}$	$7.443 \cdot 10^{-12}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$3.923 \cdot 10^{-28}$	$3.923 \cdot 10^{-28}$	0	$8.676 \cdot 10^{-14}$	$8.676 \cdot 10^{-14}$	0
$u\bar{u} \to u\bar{u}$	$-1.27 \cdot 10^{-25}$	$-1.271 \cdot 10^{-25}$	-0.0003533	$3.055 \cdot 10^{-10}$	$3.055 \cdot 10^{-10}$	0

#### 2.75 cuBRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z c \bar{c}$	$5.061 \cdot 10^{-11}$	$5.061 \cdot 10^{-11}$	0	$1.337 \cdot 10^{-11}$	$1.337 \cdot 10^{-11}$	0		
$HH \to z t \bar t$	$-1.487 \cdot 10^{-5}$	$-1.487 \cdot 10^{-5}$	$6.724 \cdot 10^{-8}$	$4.589 \cdot 10^{-5}$	$4.589 \cdot 10^{-5}$	$4.359 \cdot 10^{-8}$		
$HW^+  o \gamma t \bar{b}$	$6.207 \cdot 10^{-6}$	$6.207 \cdot 10^{-6}$	$3.222 \cdot 10^{-8}$	$3.726 \cdot 10^{-6}$	$3.726 \cdot 10^{-6}$	$5.367 \cdot 10^{-8}$		
$HW^+ \to \gamma u \bar{d}$	$-3.1 \cdot 10^{-15}$	$-3.1 \cdot 10^{-15}$	0	$5.3 \cdot 10^{-17}$	$5.3 \cdot 10^{-17}$	0		
$H\gamma \to c\bar{c}$	$2.73 \cdot 10^{-9}$	$2.73 \cdot 10^{-9}$	0	$3.391 \cdot 10^{-5}$	$3.391 \cdot 10^{-5}$	0		
$H\gamma \to t\bar{t}$	0.2595	0.2595	0	2.742	2.742	$7.293 \cdot 10^{-8}$		

$Hz \to t\bar{t}$	-0.01915	-0.01915	0	0.8277	0.8277	$6.041 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$2.591 \cdot 10^{-12}$	$2.591 \cdot 10^{-12}$	0	$2.362 \cdot 10^{-11}$	$2.362 \cdot 10^{-11}$	0
$W^+W^- \to Hc\bar{c}$	$-5.774 \cdot 10^{-12}$	$-5.774 \cdot 10^{-12}$	0	$3.088 \cdot 10^{-13}$	$3.088 \cdot 10^{-13}$	0
$W^+W^-  o H t \bar t$	$-2.638 \cdot 10^{-7}$	$-2.638 \cdot 10^{-7}$	$3.791 \cdot 10^{-8}$	$2.4\cdot 10^{-8}$	$2.4\cdot 10^{-8}$	$4.167 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	0.004597	0.004597	$4.351 \cdot 10^{-8}$	0.001083	0.001083	0
$b\bar{b} \to u\bar{u}$	$9.739 \cdot 10^{-14}$	$9.739 \cdot 10^{-14}$	0	$5.109 \cdot 10^{-14}$	$5.109 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-2.087 \cdot 10^{-7}$	$-2.087 \cdot 10^{-7}$	0	$8.892 \cdot 10^{-9}$	$8.892 \cdot 10^{-9}$	0
$d\bar{d} \to c\bar{c}$	$1.555 \cdot 10^{-8}$	$1.555 \cdot 10^{-8}$	0	$5.275 \cdot 10^{-8}$	$5.275 \cdot 10^{-8}$	0
$t \bar t  o  u_\mu ar u_\mu$	0.0008392	0.0008392	$3.575 \cdot 10^{-8}$	0.0006061	0.0006061	$6.599 \cdot 10^{-8}$
$t\bar{t} \rightarrow \tau^+ \tau^-$	-0.002229	-0.002229	$4.486 \cdot 10^{-8}$	0.003392	0.003392	$5.895 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	-0.004406	-0.004406	$2.27 \cdot 10^{-8}$	0.001425	0.001425	$7.015 \cdot 10^{-8}$
$t\bar{t}  o d\bar{d}$	0.0005034	0.0005034	$1.987 \cdot 10^{-8}$	0.0008385	0.0008385	$5.963 \cdot 10^{-8}$
$t\bar{t}  o s\bar{s}$	0.0001565	0.0001565	0	0.001209	0.001209	$8.27 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	45.61	45.61	$4.385 \cdot 10^{-8}$	13.06	13.06	$7.656 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$-1.334 \cdot 10^{-12}$	$-1.334 \cdot 10^{-12}$	0	$7.443 \cdot 10^{-12}$	$7.443 \cdot 10^{-12}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.101 \cdot 10^{-13}$	$1.101 \cdot 10^{-13}$	0	$8.676 \cdot 10^{-14}$	$8.676 \cdot 10^{-14}$	0
$u\bar{u} \to u\bar{u}$	$1.595 \cdot 10^{-9}$	$1.595 \cdot 10^{-9}$	0	$3.055 \cdot 10^{-10}$	$3.055 \cdot 10^{-10}$	0

### 2.76 cuGIm

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	$-5.259 \cdot 10^{-17}$	$-5.291 \cdot 10^{-17}$	-0.006214	0.03212	0.03212	$6.228 \cdot 10^{-8}$	
$b\bar{b} \to u\bar{u}$	$-5.253 \cdot 10^{-30}$	$-5.253 \cdot 10^{-30}$	0	$1.959 \cdot 10^{-12}$	$1.959 \cdot 10^{-12}$	0	
$d\bar{d} \to c\bar{c}$	$-5.168 \cdot 10^{-23}$	$-5.609 \cdot 10^{-23}$	-0.08537	$2.022 \cdot 10^{-6}$	$2.022 \cdot 10^{-6}$	0	
gg  o t ar t	$-1.033 \cdot 10^{-18}$	$-4.403 \cdot 10^{-18}$	-3.261	0.0819	0.0819	$6.105 \cdot 10^{-8}$	
$gg \to u\bar{u}$	$-3.696 \cdot 10^{-28}$	$-3.696 \cdot 10^{-28}$	0	$1.213 \cdot 10^{-11}$	$1.213 \cdot 10^{-11}$	0	
$t\bar{t} \to c\bar{c}$	$-1.226 \cdot 10^{-22}$	$-5.815 \cdot 10^{-23}$	0.5256	0.006846	0.006846	$7.303 \cdot 10^{-8}$	
$t\bar{t} \to d\bar{d}$	$1.47 \cdot 10^{-24}$	$2.941 \cdot 10^{-24}$	-1	0.02276	0.02276	$4.395 \cdot 10^{-8}$	

$t\bar{t} \to s\bar{s}$	$5.902 \cdot 10^{-24}$	$-1.274 \cdot 10^{-27}$	1	0.03696	0.03696	$5.411 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$-2.419 \cdot 10^{-15}$	$1.945 \cdot 10^{-14}$	9.041	149.2	149.2	$6.703 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$-4.394 \cdot 10^{-26}$	$-4.394 \cdot 10^{-26}$	0	$3.329 \cdot 10^{-10}$	$3.329 \cdot 10^{-10}$	0
$u\bar{u} \to u\bar{u}$	$-1.423 \cdot 10^{-25}$	$-1.424 \cdot 10^{-25}$	$-1.475 \cdot 10^{-5}$	$3.493 \cdot 10^{-9}$	$3.493 \cdot 10^{-9}$	0

## 2.77 cuGRe

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$b\bar{b} \to t\bar{t}$	-0.07434	-0.07434	$2.69 \cdot 10^{-8}$	0.0415	0.0415	$4.819 \cdot 10^{-8}$		
$b\bar{b} \to u\bar{u}$	$-2.992 \cdot 10^{-11}$	$-2.992 \cdot 10^{-11}$	0	$1.959 \cdot 10^{-12}$	$1.959 \cdot 10^{-12}$	0		
$d\bar{d} \to c\bar{c}$	$-1.034 \cdot 10^{-5}$	$-1.034 \cdot 10^{-5}$	0	$2.022 \cdot 10^{-6}$	$2.022 \cdot 10^{-6}$	0		
$gg \to t\bar{t}$	-0.1585	-0.1585	$6.31 \cdot 10^{-8}$	0.08864	0.08864	$5.641 \cdot 10^{-8}$		
$gg \to u\bar{u}$	$-1.995 \cdot 10^{-11}$	$-1.995 \cdot 10^{-11}$	0	$1.213 \cdot 10^{-11}$	$1.213 \cdot 10^{-11}$	0		
$t\bar{t} \to c\bar{c}$	-0.1971	-0.1971	$5.074 \cdot 10^{-8}$	0.01623	0.01623	$6.16 \cdot 10^{-8}$		
$t\bar{t} \to d\bar{d}$	-0.1971	-0.1971	$5.074 \cdot 10^{-8}$	0.03214	0.03214	$6.223 \cdot 10^{-8}$		
$t\bar{t} \to s\bar{s}$	-0.1971	-0.1971	0	0.04635	0.04635	$6.473 \cdot 10^{-8}$		
$t\bar{t} \to t\bar{t}$	-34.17	-34.17	$2.926 \cdot 10^{-8}$	148.9	148.9	$6.715 \cdot 10^{-8}$		
$u\bar{d} \to u\bar{d}$	$-3.395 \cdot 10^{-11}$	$-3.395 \cdot 10^{-11}$	0	$3.329 \cdot 10^{-10}$	$3.329 \cdot 10^{-10}$	0		
$u\bar{u} \to u\bar{u}$	$-1.765 \cdot 10^{-9}$	$-1.765 \cdot 10^{-9}$	0	$3.493 \cdot 10^{-9}$	$3.493 \cdot 10^{-9}$	0		

#### 2.78 cuHIm

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to H t \bar t$	$-7.585 \cdot 10^{-6}$	$-7.585 \cdot 10^{-6}$	$2.637 \cdot 10^{-8}$	$8.206 \cdot 10^{-5}$	$8.206 \cdot 10^{-5}$	$6.093 \cdot 10^{-8}$		
$HH \to Hu\bar{u}$	$-1.971 \cdot 10^{-24}$	$-1.971 \cdot 10^{-24}$	0	$3.224 \cdot 10^{-16}$	$3.224 \cdot 10^{-16}$	0		
$HH \to W^+ \bar{t} b$	$-1.445 \cdot 10^{-6}$	$-1.445 \cdot 10^{-6}$	0	$1.32 \cdot 10^{-5}$	$1.32 \cdot 10^{-5}$	$7.573 \cdot 10^{-8}$		
$HH \to W^- u \bar{d}$	$-1.598 \cdot 10^{-15}$	$-1.598 \cdot 10^{-15}$	0	$5.605 \cdot 10^{-16}$	$5.605 \cdot 10^{-16}$	0		

$HH \to z c \bar c$	$9.497 \cdot 10^{-11}$	$9.497 \cdot 10^{-11}$	0	$1.322 \cdot 10^{-10}$	$1.322 \cdot 10^{-10}$	0
$HH \to z t \bar{t}$	$1.068 \cdot 10^{-6}$	$1.068 \cdot 10^{-6}$	$9.364 \cdot 10^{-8}$	$8.78 \cdot 10^{-6}$	$8.78 \cdot 10^{-6}$	$5.695 \cdot 10^{-8}$
$HW^+ \to \gamma t \bar{b}$	$4.417 \cdot 10^{-6}$	$4.417 \cdot 10^{-6}$	$4.528 \cdot 10^{-8}$	$5.521 \cdot 10^{-7}$	$5.521 \cdot 10^{-7}$	$5.434 \cdot 10^{-8}$
$HW^+ \to \gamma u \bar{d}$	$-8.719 \cdot 10^{-17}$	$-8.719 \cdot 10^{-17}$	0	$3.453 \cdot 10^{-16}$	$3.453 \cdot 10^{-16}$	0
$HW^+ \to u\bar{d}$	$5.155 \cdot 10^{-14}$	$5.155 \cdot 10^{-14}$	0	$9.977 \cdot 10^{-12}$	$9.977 \cdot 10^{-12}$	0
$HW^-  o \bar{t}b$	-0.001259	-0.001259	$7.941 \cdot 10^{-8}$	0.05663	0.05663	$5.298 \cdot 10^{-8}$
$H\gamma \to c\bar{c}$	$-1.694 \cdot 10^{-21}$	$-1.694 \cdot 10^{-21}$	0	$3.626 \cdot 10^{-7}$	$3.626 \cdot 10^{-7}$	0
$H\gamma \to t\bar{t}$	$-3.704 \cdot 10^{-18}$	$-7.224 \cdot 10^{-20}$	0.9805	0.001862	0.001862	$5.37 \cdot 10^{-8}$
$Hz \to t\bar{t}$	$4.549 \cdot 10^{-5}$	$4.549 \cdot 10^{-5}$	$2.198 \cdot 10^{-8}$	0.06804	0.06804	$5.879 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$4.09 \cdot 10^{-17}$	$4.09 \cdot 10^{-17}$	0	$9.738 \cdot 10^{-12}$	$9.738 \cdot 10^{-12}$	0
$W^+W^- \to Hb\bar{b}$	$-2.311 \cdot 10^{-7}$	$-2.311 \cdot 10^{-7}$	$4.327 \cdot 10^{-8}$	$8.73 \cdot 10^{-9}$	$8.73 \cdot 10^{-9}$	$5.727 \cdot 10^{-8}$
$W^+W^- \to H c \bar c$	$-1.174 \cdot 10^{-12}$	$-1.174 \cdot 10^{-12}$	0	$5.747 \cdot 10^{-12}$	$5.747 \cdot 10^{-12}$	0
$W^+W^- \to H d\bar{d}$	$-1.325 \cdot 10^{-18}$	$-1.325 \cdot 10^{-18}$	0	$4.61 \cdot 10^{-30}$	$4.61 \cdot 10^{-30}$	0
$W^+W^- \to H t \bar t$	$2.855 \cdot 10^{-7}$	$2.855 \cdot 10^{-7}$	0	$2.502 \cdot 10^{-7}$	$2.502 \cdot 10^{-7}$	$7.993 \cdot 10^{-8}$
$b\bar{b} \to t\bar{t}$	$7.531 \cdot 10^{-22}$	$1.194 \cdot 10^{-23}$	0.9842	$5.382 \cdot 10^{-7}$	$5.382 \cdot 10^{-7}$	$5.574 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$8.286 \cdot 10^{-32}$	$8.286 \cdot 10^{-32}$	0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-1.934 \cdot 10^{-30}$	$-1.934 \cdot 10^{-30}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
$d\bar{d} \to c\bar{c}$	$5.059 \cdot 10^{-32}$	$-2.004 \cdot 10^{-32}$	1.396	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-5.065 \cdot 10^{-23}$	$9.117 \cdot 10^{-23}$	2.8	$3.439 \cdot 10^{-8}$	$3.439 \cdot 10^{-8}$	$5.816 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$1.245 \cdot 10^{-22}$	$1.484 \cdot 10^{-22}$	-0.192	$9.945 \cdot 10^{-8}$	$9.945 \cdot 10^{-8}$	$3.017 \cdot 10^{-8}$
$t\bar{t} \to d\bar{d}$	$6.956 \cdot 10^{-28}$	$-4.151 \cdot 10^{-28}$	1.597	$7.125 \cdot 10^{-13}$	$7.125 \cdot 10^{-13}$	$5.614 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$4.287 \cdot 10^{-25}$	$4.143 \cdot 10^{-25}$	0.0335	$2.826 \cdot 10^{-10}$	$2.826 \cdot 10^{-10}$	$3.539 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$-6.286 \cdot 10^{-16}$	$-2.023 \cdot 10^{-15}$	-2.217	0.004869	0.004869	$6.162 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$-1.724 \cdot 10^{-33}$	$-1.724 \cdot 10^{-33}$	$4.699 \cdot 10^{-5}$	$6.752 \cdot 10^{-23}$	$6.752 \cdot 10^{-23}$	0
$u\bar{u} \to u\bar{u}$	$-1.392 \cdot 10^{-26}$	$-1.392 \cdot 10^{-26}$	0	$6.825 \cdot 10^{-23}$	$6.825 \cdot 10^{-23}$	0

#### 2.79 cuHRe

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to H t \bar t$	$6.607 \cdot 10^{-5}$	$6.607 \cdot 10^{-5}$	$3.027 \cdot 10^{-8}$	$3.831 \cdot 10^{-5}$	$3.831 \cdot 10^{-5}$	$5.22 \cdot 10^{-8}$
$HH \to Hu\bar{u}$	$-1.014 \cdot 10^{-15}$	$-1.014 \cdot 10^{-15}$	0	$3.224 \cdot 10^{-16}$	$3.224 \cdot 10^{-16}$	0
$HH \to W^+ \bar{t} b$	$1.613 \cdot 10^{-5}$	$1.613 \cdot 10^{-5}$	0	$7.932 \cdot 10^{-6}$	$7.932 \cdot 10^{-6}$	$6.304 \cdot 10^{-8}$
$HH \to W^- u \bar{d}$	$-9.144 \cdot 10^{-16}$	$-9.144 \cdot 10^{-16}$	0	$5.605 \cdot 10^{-16}$	$5.605 \cdot 10^{-16}$	0
$HH \to zc\bar{c}$	$-9.743 \cdot 10^{-11}$	$-9.743 \cdot 10^{-11}$	0	$1.322 \cdot 10^{-10}$	$1.322 \cdot 10^{-10}$	0
$HH \to z t \bar{t}$	$-2.824 \cdot 10^{-5}$	$-2.824 \cdot 10^{-5}$	$3.542 \cdot 10^{-8}$	$9.923 \cdot 10^{-6}$	$9.923 \cdot 10^{-6}$	$6.047 \cdot 10^{-8}$
$HW^+  o \gamma t \bar{b}$	$8.493 \cdot 10^{-7}$	$8.493 \cdot 10^{-7}$	$2.355 \cdot 10^{-8}$	$1.698 \cdot 10^{-7}$	$1.698 \cdot 10^{-7}$	$5.89 \cdot 10^{-8}$
$HW^+ \to \gamma u \bar{d}$	$-7.474 \cdot 10^{-15}$	$-7.474 \cdot 10^{-15}$	0	$3.453 \cdot 10^{-16}$	$3.453 \cdot 10^{-16}$	0
$HW^+  o u \bar d$	$-1.636 \cdot 10^{-11}$	$-1.636 \cdot 10^{-11}$	0	$9.977 \cdot 10^{-12}$	$9.977 \cdot 10^{-12}$	0
$HW^- \to \bar{t}b$	0.07891	0.07891	$3.802 \cdot 10^{-8}$	0.05041	0.05041	$5.951 \cdot 10^{-8}$
$H\gamma \to c\bar{c}$	$-1.196 \cdot 10^{-5}$	$-1.196 \cdot 10^{-5}$	0	$3.626 \cdot 10^{-7}$	$3.626 \cdot 10^{-7}$	0
$H\gamma \to t\bar{t}$	-0.04854	-0.04854	$2.06 \cdot 10^{-8}$	0.001471	0.001471	$6.796 \cdot 10^{-8}$
$Hz \to t\bar{t}$	0.004567	0.004567	$2.19 \cdot 10^{-8}$	0.06818	0.06818	$5.866 \cdot 10^{-8}$
$Hz \to u\bar{u}$	$-1.053 \cdot 10^{-11}$	$-1.053 \cdot 10^{-11}$	0	$9.738 \cdot 10^{-12}$	$9.738 \cdot 10^{-12}$	0
$W^+W^- \to H b \bar b$	$1.139 \cdot 10^{-6}$	$1.139 \cdot 10^{-6}$	$8.778 \cdot 10^{-8}$	$7.903 \cdot 10^{-8}$	$7.903 \cdot 10^{-8}$	$6.327 \cdot 10^{-8}$
$W^+W^-  o Hc\bar{c}$	$3.058 \cdot 10^{-12}$	$3.058 \cdot 10^{-12}$	0	$5.747 \cdot 10^{-12}$	$5.747 \cdot 10^{-12}$	0
$W^+W^- \to H d\bar{d}$	$1.921 \cdot 10^{-17}$	$1.921 \cdot 10^{-17}$	0	$4.042 \cdot 10^{-28}$	$4.042 \cdot 10^{-28}$	0
$W^+W^-  o Ht\bar{t}$	$-4.067 \cdot 10^{-7}$	$-4.067 \cdot 10^{-7}$	$2.459 \cdot 10^{-8}$	$8.4 \cdot 10^{-8}$	$8.4 \cdot 10^{-8}$	$5.952 \cdot 10^{-8}$
$b\bar{b}  o t\bar{t}$	$-1.02 \cdot 10^{-5}$	$-1.02 \cdot 10^{-5}$	0	$4.739 \cdot 10^{-7}$	$4.739 \cdot 10^{-7}$	$6.33 \cdot 10^{-8}$
$b\bar{b} \to u\bar{u}$	$-2.758 \cdot 10^{-15}$	$-2.758 \cdot 10^{-15}$	0	$8.413 \cdot 10^{-17}$	$8.413 \cdot 10^{-17}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-2.013 \cdot 10^{-13}$	$-2.013 \cdot 10^{-13}$	0	$6.195 \cdot 10^{-15}$	$6.195 \cdot 10^{-15}$	0
$d\bar{d} \to c\bar{c}$	$-1.196 \cdot 10^{-15}$	$-1.196 \cdot 10^{-15}$	0	$3.63 \cdot 10^{-17}$	$3.63 \cdot 10^{-17}$	0
$t\bar{t} \to \tau^+ \tau^-$	$-1.011 \cdot 10^{-6}$	$-1.011 \cdot 10^{-6}$	0	$3.052 \cdot 10^{-8}$	$3.052 \cdot 10^{-8}$	$6.554 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$-3.118 \cdot 10^{-6}$	$-3.118 \cdot 10^{-6}$	$3.207 \cdot 10^{-8}$	$1.87 \cdot 10^{-7}$	$1.87 \cdot 10^{-7}$	0
$t\bar{t} \to d\bar{d}$	$-2.076 \cdot 10^{-11}$	$-2.076 \cdot 10^{-11}$	0	$6.323 \cdot 10^{-13}$	$6.323 \cdot 10^{-13}$	$4.745 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$-8.274 \cdot 10^{-9}$	$-8.274 \cdot 10^{-9}$	$2.417 \cdot 10^{-8}$	$2.507 \cdot 10^{-10}$	$2.507 \cdot 10^{-10}$	$7.976 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	4.175	4.175	$2.395 \cdot 10^{-8}$	0.1087	0.1087	$9.202 \cdot 10^{-8}$
$u\bar{d} \to u\bar{d}$	$7.107 \cdot 10^{-21}$	$7.107 \cdot 10^{-21}$	0	$6.752 \cdot 10^{-23}$	$6.752 \cdot 10^{-23}$	0

 $u\bar{u} \to u\bar{u}$  9.191 · 10<sup>-10</sup> 9.191 · 10<sup>-10</sup> 0 1.227 · 10<sup>-22</sup> 1.227 · 10<sup>-22</sup> 0

#### 2.80 cuWIm

		interfere	nce		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o W^+ \bar t b$	$5.338 \cdot 10^{-6}$	$5.338 \cdot 10^{-6}$	$3.747 \cdot 10^{-8}$	$6.891 \cdot 10^{-6}$	$6.891 \cdot 10^{-6}$	$5.805 \cdot 10^{-8}$		
$HH \to W^- u \bar{d}$	$6.904 \cdot 10^{-17}$	$6.904 \cdot 10^{-17}$	0	$3.027 \cdot 10^{-17}$	$3.027 \cdot 10^{-17}$	0		
$HH \to zc\bar{c}$	$2.529 \cdot 10^{-12}$	$2.529 \cdot 10^{-12}$	0	$3.297 \cdot 10^{-10}$	$3.297 \cdot 10^{-10}$	0		
$HH \to z t \bar t$	$-3.451 \cdot 10^{-6}$	$-3.451 \cdot 10^{-6}$	$2.898 \cdot 10^{-8}$	$4.152 \cdot 10^{-5}$	$4.152 \cdot 10^{-5}$	$4.817 \cdot 10^{-8}$		
$HW^+ \to \gamma t \bar{b}$	$8.587 \cdot 10^{-8}$	$8.587 \cdot 10^{-8}$	$2.329 \cdot 10^{-8}$	$1.205 \cdot 10^{-6}$	$1.205 \cdot 10^{-6}$	$8.295 \cdot 10^{-8}$		
$HW^+ \to \gamma u \bar{d}$	$4.369 \cdot 10^{-18}$	$4.369 \cdot 10^{-18}$	0	$1.121 \cdot 10^{-17}$	$1.121 \cdot 10^{-17}$	0		
$HW^+ \to u\bar{d}$	$-2.243 \cdot 10^{-14}$	$-2.243 \cdot 10^{-14}$	0	$1.759 \cdot 10^{-10}$	$1.759 \cdot 10^{-10}$	0		
$HW^-  o \bar{t}b$	$2.117 \cdot 10^{-5}$	$2.117 \cdot 10^{-5}$	$4.724 \cdot 10^{-8}$	2.24	2.24	$4.464 \cdot 10^{-8}$		
$H\gamma \to c\bar{c}$	$6.193 \cdot 10^{-27}$	$6.193 \cdot 10^{-27}$	0	$2.564 \cdot 10^{-5}$	$2.564 \cdot 10^{-5}$	0		
$H\gamma \to t\bar{t}$	$-2.266 \cdot 10^{-17}$	$-2.874 \cdot 10^{-17}$	-0.2685	0.6321	0.6321	$6.328 \cdot 10^{-8}$		
$Hz \to t\bar{t}$	0.0001542	0.0001542	0	2.79	2.79	$3.584 \cdot 10^{-8}$		
$Hz \to u\bar{u}$	$3.869 \cdot 10^{-14}$	$3.869 \cdot 10^{-14}$	0	$6.084 \cdot 10^{-11}$	$6.084 \cdot 10^{-11}$	0		
$W^+W^- \to H b \bar b$	$-3.374 \cdot 10^{-6}$	$-3.374 \cdot 10^{-6}$	$2.964 \cdot 10^{-8}$	$3.301 \cdot 10^{-6}$	$3.301 \cdot 10^{-6}$	$6.06 \cdot 10^{-8}$		
$W^+W^-  o Hc\bar{c}$	$-7.717 \cdot 10^{-10}$	$-7.717 \cdot 10^{-10}$	0	$9.536 \cdot 10^{-11}$	$9.536 \cdot 10^{-11}$	0		
$W^+W^- \to H d\bar{d}$	$2.403 \cdot 10^{-16}$	$2.403 \cdot 10^{-16}$	0	$1.825 \cdot 10^{-25}$	$1.825 \cdot 10^{-25}$	0		
$W^+W^-  o H t \bar t$	$-3.77\cdot10^{-5}$	$-3.77 \cdot 10^{-5}$	$2.652 \cdot 10^{-8}$	$4.201 \cdot 10^{-5}$	$4.201\cdot10^{-5}$	$7.142 \cdot 10^{-8}$		
$\bar{b}t \to \bar{d}u$	$-2.318 \cdot 10^{-18}$	$-2.29 \cdot 10^{-18}$	0.01196	0.01275	0.01275	$7.843 \cdot 10^{-8}$		
$b\bar{b}  o t\bar{t}$	$4.328 \cdot 10^{-17}$	$7.491 \cdot 10^{-18}$	0.8269	1.349	1.349	$7.412 \cdot 10^{-8}$		
$b\bar{b} \to u\bar{u}$	$1.261 \cdot 10^{-29}$	$1.254 \cdot 10^{-29}$	0.005771	$1.391 \cdot 10^{-13}$	$1.391 \cdot 10^{-13}$	0		
$b\bar{t} \to e^- \bar{\nu}_e$	$2.233 \cdot 10^{-18}$	$2.224 \cdot 10^{-18}$	0.004089	0.003096	0.003096	$6.46 \cdot 10^{-8}$		
$c\bar{c} \to \mu^+ \mu^-$	$1.054 \cdot 10^{-23}$	$1.054 \cdot 10^{-23}$	0	$1.146 \cdot 10^{-7}$	$1.146 \cdot 10^{-7}$	0		
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-7.417 \cdot 10^{-23}$	$-7.417 \cdot 10^{-23}$	0	$2.322 \cdot 10^{-7}$	$2.322 \cdot 10^{-7}$	0		
$d\bar{d} \to c\bar{c}$	$3.718 \cdot 10^{-24}$	$-4.183 \cdot 10^{-24}$	2.125	$4.124 \cdot 10^{-8}$	$4.124 \cdot 10^{-8}$	0		

$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	$-3.257 \cdot 10^{-19}$	$-3.257 \cdot 10^{-19}$	0	0.002029	0.002029	$4.929 \cdot 10^{-8}$
$t\bar{t}  o  au^+  au^-$	$1.498 \cdot 10^{-18}$	$1.498 \cdot 10^{-18}$	$-2.944 \cdot 10^{-5}$	0.001189	0.001189	$8.408 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	$1.44 \cdot 10^{-18}$	$1.44 \cdot 10^{-18}$	$7.352 \cdot 10^{-5}$	0.005311	0.005311	$5.648 \cdot 10^{-8}$
$t\bar{t}  o d\bar{d}$	$-4.305 \cdot 10^{-18}$	$-4.305 \cdot 10^{-18}$	$2.186 \cdot 10^{-5}$	0.004133	0.004133	$7.258 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	$-5.308 \cdot 10^{-18}$	$-5.308 \cdot 10^{-18}$	$2.77 \cdot 10^{-6}$	0.004622	0.004622	$6.49 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$2.87 \cdot 10^{-17}$	$3.147 \cdot 10^{-17}$	-0.09654	0.04677	0.04677	$6.414 \cdot 10^{-8}$
$u\bar{d} \to \mu^+ \nu_\mu$	$1.626 \cdot 10^{-28}$	$1.626 \cdot 10^{-28}$	0	$2.736 \cdot 10^{-13}$	$2.736 \cdot 10^{-13}$	0
$u\bar{d} \to c\bar{s}$	$-1.177 \cdot 10^{-23}$	$-1.177 \cdot 10^{-23}$	0	$6.699 \cdot 10^{-7}$	$6.699 \cdot 10^{-7}$	0
$u\bar{d} \to u\bar{d}$	$-3.912 \cdot 10^{-24}$	$-3.911 \cdot 10^{-24}$	0.0002756	$3.58 \cdot 10^{-11}$	$3.58 \cdot 10^{-11}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-6.959 \cdot 10^{-29}$	$-6.959 \cdot 10^{-29}$	0	$3.134 \cdot 10^{-13}$	$3.134 \cdot 10^{-13}$	0
$u\bar{u} \to u\bar{u}$	$-3.989 \cdot 10^{-26}$	$-3.989 \cdot 10^{-26}$	$-4.395 \cdot 10^{-5}$	$2.119 \cdot 10^{-11}$	$2.119 \cdot 10^{-11}$	0

## 2.81 cuWRe

		interfere		square			
	mod1 mod2		$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to W^+ \bar{t} b$	$-5.291 \cdot 10^{-6}$	$-5.291 \cdot 10^{-6}$	$3.78 \cdot 10^{-8}$	$6.481 \cdot 10^{-6}$	$6.481 \cdot 10^{-6}$	$6.172 \cdot 10^{-8}$	
$HH \to W^- u \bar{d}$	$1.62 \cdot 10^{-15}$	$1.62 \cdot 10^{-15}$	0	$8.567 \cdot 10^{-16}$	$8.567 \cdot 10^{-16}$	0	
$HH \to zc\bar{c}$	$-9.451 \cdot 10^{-11}$	$-9.451 \cdot 10^{-11}$	0	$4.662 \cdot 10^{-11}$	$4.662 \cdot 10^{-11}$	0	
$HH \to z t \bar{t}$	$2.777 \cdot 10^{-5}$	$2.777 \cdot 10^{-5}$	0	0.00016	0.00016	$6.25 \cdot 10^{-8}$	
$HW^+ \to \gamma t \bar{b}$	$5.473 \cdot 10^{-5}$	$5.473 \cdot 10^{-5}$	$1.827 \cdot 10^{-8}$	$1.802 \cdot 10^{-5}$	$1.802 \cdot 10^{-5}$	$5.548 \cdot 10^{-8}$	
$HW^+ \to \gamma u \bar{d}$	$-2.382 \cdot 10^{-15}$	$-2.382 \cdot 10^{-15}$	0	$3.925 \cdot 10^{-16}$	$3.925 \cdot 10^{-16}$	0	
$HW^+ \to u\bar{d}$	$-7.436 \cdot 10^{-12}$	$-7.436 \cdot 10^{-12}$	0	$1.694 \cdot 10^{-10}$	$1.694 \cdot 10^{-10}$	0	
$HW^-  o \bar{t}b$	0.2411	0.2411	0	2.073	2.073	$4.824 \cdot 10^{-8}$	
$H\gamma \to c\bar{c}$	$1.462 \cdot 10^{-9}$	$1.462 \cdot 10^{-9}$	0	$9.724 \cdot 10^{-6}$	$9.724 \cdot 10^{-6}$	0	
$H\gamma \to t\bar{t}$	0.139	0.139	$7.197 \cdot 10^{-8}$	0.7864	0.7864	$5.086 \cdot 10^{-8}$	
$Hz \to t\bar{t}$	0.03577	0.03577	$2.796 \cdot 10^{-8}$	2.886	2.886	$6.93 \cdot 10^{-8}$	
$Hz \to u\bar{u}$	$-4.838 \cdot 10^{-12}$	$-4.838 \cdot 10^{-12}$	0	$8.236 \cdot 10^{-11}$	$8.236 \cdot 10^{-11}$	0	
$W^+W^- \to Hb\bar{b}$	$2.318 \cdot 10^{-6}$	$2.318 \cdot 10^{-6}$	0	$2.139 \cdot 10^{-6}$	$2.139 \cdot 10^{-6}$	$4.674 \cdot 10^{-8}$	

$W^+W^- \to H c \bar c$	$1.918 \cdot 10^{-11}$	$1.918 \cdot 10^{-11}$	0	$1.744 \cdot 10^{-10}$	$1.744 \cdot 10^{-10}$	0
$W^+W^-  o H d \bar d$	$-8.832 \cdot 10^{-17}$	$-8.832 \cdot 10^{-17}$	0	$6.733 \cdot 10^{-26}$	$6.733 \cdot 10^{-26}$	0
$W^+W^-  o Ht\bar{t}$	$6.404 \cdot 10^{-6}$	$6.404 \cdot 10^{-6}$	$1.561 \cdot 10^{-8}$	$4.457 \cdot 10^{-5}$	$4.457 \cdot 10^{-5}$	$6.732 \cdot 10^{-8}$
$\bar{b}t \to \bar{d}u$	-0.009492	-0.009492	$3.16 \cdot 10^{-8}$	0.01317	0.01317	0
$b\bar{b} \to t\bar{t}$	0.06046	0.06046	$3.308 \cdot 10^{-8}$	0.1467	0.1467	0
$b\bar{b} \to u\bar{u}$	$-1.147 \cdot 10^{-12}$	$-1.147 \cdot 10^{-12}$	0	$3.216 \cdot 10^{-13}$	$3.216 \cdot 10^{-13}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	-0.004569	-0.004569	$2.189 \cdot 10^{-8}$	0.002941	0.002941	$3.401 \cdot 10^{-8}$
$c\bar{c} \to \mu^+ \mu^-$	$-1.635 \cdot 10^{-7}$	$-1.635 \cdot 10^{-7}$	0	$6.253 \cdot 10^{-9}$	$6.253 \cdot 10^{-9}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-2.087 \cdot 10^{-7}$	$-2.087 \cdot 10^{-7}$	0	$1.993 \cdot 10^{-7}$	$1.993 \cdot 10^{-7}$	0
$d\bar{d} \to c\bar{c}$	$-2.456 \cdot 10^{-7}$	$-2.456 \cdot 10^{-7}$	0	$3.32 \cdot 10^{-7}$	$3.32 \cdot 10^{-7}$	0
$t\bar{t}  o  u_{\mu} \bar{ u}_{\mu}$	-0.001567	-0.001567	$6.381 \cdot 10^{-8}$	0.002114	0.002114	$4.731 \cdot 10^{-8}$
$t\bar{t} \to \tau^+ \tau^-$	-0.001861	-0.001861	$5.375 \cdot 10^{-8}$	0.002385	0.002385	$8.384 \cdot 10^{-8}$
$t\bar{t} \to c\bar{c}$	-0.008333	-0.008333	$2.4 \cdot 10^{-8}$	0.002659	0.002659	$7.522 \cdot 10^{-8}$
$t\bar{t}  o d\bar{d}$	-0.006419	-0.006419	$3.116 \cdot 10^{-8}$	0.005277	0.005277	$5.685 \cdot 10^{-8}$
$t\bar{t} \to s\bar{s}$	-0.003506	-0.003506	$2.853 \cdot 10^{-8}$	0.00761	0.00761	$5.256 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	49.34	49.34	$4.053 \cdot 10^{-8}$	9.663	9.663	$6.209 \cdot 10^{-8}$
$u\bar{d} \to \mu^+ \nu_{\mu}$	$-2.022 \cdot 10^{-13}$	$-2.022 \cdot 10^{-13}$	0	$4.766 \cdot 10^{-13}$	$4.766 \cdot 10^{-13}$	0
$u\bar{d} \to c\bar{s}$	$-2.34 \cdot 10^{-7}$	$-2.34 \cdot 10^{-7}$	0	$5.324 \cdot 10^{-7}$	$5.324 \cdot 10^{-7}$	0
$u\bar{d} \to u\bar{d}$	$3.218 \cdot 10^{-10}$	$3.218 \cdot 10^{-10}$	0	$4.097 \cdot 10^{-11}$	$4.097 \cdot 10^{-11}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-2.056 \cdot 10^{-13}$	$-2.056 \cdot 10^{-13}$	0	$3.026 \cdot 10^{-13}$	$3.026 \cdot 10^{-13}$	0
$u\bar{u} \to u\bar{u}$	$1.832 \cdot 10^{-9}$	$1.832 \cdot 10^{-9}$	0	$3.195 \cdot 10^{-10}$	$3.195 \cdot 10^{-10}$	0

# 2.82 cud1

		interfer	rence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	
$b\bar{b} \to t\bar{t}$	-0.04639	-0.04639	0	0.8451	0.8451	0	
$b\bar{b} \to u\bar{u}$	$-6.914 \cdot 10^{-5}$	$-6.914 \cdot 10^{-5}$	0	0.001279	0.001279	0	
$d\bar{d} \to c\bar{c}$	$-5.064 \cdot 10^{-5}$	$-5.064 \cdot 10^{-5}$	0	0.0009298	0.0009298	0	

$t\bar{t} \to d\bar{d}$	-0.003553	-0.003553	0	0.05795	0.05795	0
$t\bar{t} \to s\bar{s}$	-0.004598	-0.004598	0	0.07714	0.07714	0
$u\bar{d} \to u\bar{d}$	0.5705	0.5705	0	0.8481	0.8481	0

# 2.83 cud8

		i	nterference	square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$b\bar{b}  o t\bar{t}$	0.2778	0.2778	0	0.08711	0.08711	0	
$b\bar{b} \to u\bar{u}$	0.5485	0.5485	0	0.1851	0.1851	0	
$d\bar{d} \to c\bar{c}$	0.2447	0.2447	0	0.08259	0.08259	0	
$t\bar{t} \to d\bar{d}$	0.458	0.458	0	0.1479	0.1479	0	
$t\bar{t} \to s\bar{s}$	0.1847	0.1847	0	0.05571	0.05571	0	
$u\bar{d} \to u\bar{d}$	-8.306	-8.306	0	0.1927	0.1927	0	

### 2.84 cuu

		i	nterference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$t\bar{t} \to c\bar{c}$	0.1993	0.1993	0	3.632	3.632	0	
$t\bar{t} \to t\bar{t}$	-1478	-1478	0	37.24	37.24	0	
$u\bar{u} \to u\bar{u}$	-202.2	-202.2	0	10.38	10.38	0	

# 2.85 cuu1

		i	nterference		SC	quare
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$t\bar{t} \to c\bar{c}$	2.536	2.536	0	3.632	3.632	$2.754 \cdot 10^{-8}$

$t\bar{t} \to t\bar{t}$	-1478	-1478	0	37.24	37.24	0
$u\bar{u} \to u\bar{u}$	-202.2	-202.2	0	10.38	10.38	$-9.638 \cdot 10^{-8}$

### 2.86 sm

			interference		square	
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to HH$	0	0	0	0.1788	0.1788	0
$HH \to HHH$	0	0	0	$8.931 \cdot 10^{-9}$	$8.931 \cdot 10^{-9}$	0
$HH \to H \tau^+ \tau^-$	0	0	0	$8.14 \cdot 10^{-11}$	$8.14 \cdot 10^{-11}$	0
$HH  o Hbar{b}$	0	0	0	$7.294 \cdot 10^{-9}$	$7.294 \cdot 10^{-9}$	0
$HH \to Hs\bar{s}$	0	0	0	$3.41 \cdot 10^{-10}$	$3.41 \cdot 10^{-10}$	0
$HH \to Ht\bar{t}$	0	0	0	$3.206 \cdot 10^{-5}$	$3.206 \cdot 10^{-5}$	0
$HH \to Hu\bar{u}$	0	0	0	$7.979 \cdot 10^{-16}$	$7.979 \cdot 10^{-16}$	0
$HH \to Hzz$	0	0	0	$7.445 \cdot 10^{-6}$	$7.445 \cdot 10^{-6}$	0
$HH  o W^+W^-$	0	0	0	28.76	28.76	0
$HH \to W^+W^-\gamma$	0	0	0	$5.418 \cdot 10^{-7}$	$5.418 \cdot 10^{-7}$	0
$HH  o W^+ \bar t b$	0	0	0	$1.445 \cdot 10^{-5}$	$1.445 \cdot 10^{-5}$	0
$HH \to W^+ e^- \bar{\nu}_e$	0	0	0	$1.17 \cdot 10^{-7}$	$1.17 \cdot 10^{-7}$	0
$HH \to W^- u \bar{d}$	0	0	0	$7.877 \cdot 10^{-7}$	$7.877 \cdot 10^{-7}$	0
$HH \to z\bar{b}b$	0	0	0	$4.26 \cdot 10^{-7}$	$4.26 \cdot 10^{-7}$	0
$HH \to z \nu_e \bar{\nu}_e$	0	0	0	$1.315 \cdot 10^{-6}$	$1.315 \cdot 10^{-6}$	0
$HH \to zc\bar{c}$	0	0	0	$3.532 \cdot 10^{-7}$	$3.532 \cdot 10^{-7}$	0
$HH \to z d\bar{d}$	0	0	0	$2.867 \cdot 10^{-6}$	$2.867 \cdot 10^{-6}$	0
$HH \to ze^+e^-$	0	0	0	$1.229 \cdot 10^{-7}$	$1.229 \cdot 10^{-7}$	0
$HH \to z t \bar{t}$	0	0	0	0.000247	0.000247	0
$HH \rightarrow zz$	0	0	0	0.2908	0.2908	0
$HW^+  o \gamma t \bar{b}$	0	0	0	$7.536 \cdot 10^{-5}$	$7.536 \cdot 10^{-5}$	0
$HW^+ \to \gamma u \bar{d}$	0	0	0	$4.991 \cdot 10^{-8}$	$4.991 \cdot 10^{-8}$	0

$HW^+ \to u\bar{d}$	0	0	0	0.01308	0.01308	0
$HW^-  o \bar{t}b$	0	0	0	0.7934	0.7934	0
$HW^- \to \gamma e^- \bar{\nu}_e$	0	0	0	$6.714 \cdot 10^{-9}$	$6.714 \cdot 10^{-9}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$	0	0	0	0.006638	0.006638	0
$H\gamma  o b\bar{b}$	0	0	0	$7.805 \cdot 10^{-5}$	$7.805 \cdot 10^{-5}$	0
$H\gamma \to c\bar{c}$	0	0	0	$9.866 \cdot 10^{-5}$	$9.866 \cdot 10^{-5}$	0
$H\gamma \to d\bar{d}$	0	0	0	$2.523 \cdot 10^{-9}$	$2.523 \cdot 10^{-9}$	0
$H\gamma \to e^+e^-$	0	0	0	$5.653 \cdot 10^{-12}$	$5.653 \cdot 10^{-12}$	0
$H\gamma \to t\bar{t}$	0	0	0	0.4004	0.4004	0
$Hz  o \mu^+\mu^-$	0	0	0	0.002931	0.002931	0
$Hz  o  u_{ au} \bar{ u}_{ au}$	0	0	0	0.006103	0.006103	0
$Hz \to b\bar{b}$	0	0	0	0.01326	0.01326	0
$Hz \to s\bar{s}$	0	0	0	0.01469	0.01469	0
$Hz \to t\bar{t}$	0	0	0	1.815	1.815	0
$Hz \to u\bar{u}$	0	0	0	0.004206	0.004206	0
$W^+W^- \to H b \bar b$	0	0	0	$6.457 \cdot 10^{-6}$	$6.457 \cdot 10^{-6}$	0
$W^+W^- \to Hc\bar{c}$	0	0	0	$3.125 \cdot 10^{-7}$	$3.125 \cdot 10^{-7}$	0
$W^+W^- \to H d\bar{d}$	0	0	0	$2.386 \cdot 10^{-7}$	$2.386 \cdot 10^{-7}$	0
$W^+W^- \to H t \bar t$	0	0	0	0.0001324	0.0001324	0
$W^+W^- \to W^+W^-$	0	0	0	103	103	0
$W^+W^- \to \gamma\gamma$	0	0	0	1.45	1.45	0
$W^+W^- \to \gamma\gamma\gamma$	0	0	0	$4.628 \cdot 10^{-6}$	$4.628 \cdot 10^{-6}$	0
$\bar{b}t \to \bar{d}u$	0	0	0	0.01497	0.01497	0
$\gamma W^+ \to z W^+$	0	0	0	0.1094	0.1094	0
$\mu^+\mu^- \to \tau^+\tau^-$	0	0	0	0.006807	0.006807	0
$ u_{ au}\bar{ u}_{ au}  ightarrow  u_{ au}\bar{ u}_{ au}$	0	0	0	0.3961	0.3961	0
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	0	0	0	0.008603	0.008603	0
$b\bar{b}  o \gamma \gamma$	0	0	0	$7.449 \cdot 10^{-5}$	$7.449 \cdot 10^{-5}$	0
$b\bar{b} \to \mu^+\mu^-$	0	0	0	0.0002674	0.0002674	0

$b\bar{b}  o  u_e \bar{ u}_e$	0	0	0	0.0003166	0.0003166	0
$b\bar{b}  o b\bar{b}$	0	0	0	83.74	83.74	0
$b\bar{b}  o d\bar{d}$	0	0	0	0.6282	0.6282	0
$b\bar{b}  o t\bar{t}$	0	0	0	0.4193	0.4193	0
$b\bar{b} \to u\bar{u}$	0	0	0	0.8298	0.8298	0
$b\bar{t} \to e^- \bar{\nu}_e$	0	0	0	0.01024	0.01024	0
$c\bar{c} \to \mu^+ \mu^-$	0	0	0	0.006619	0.006619	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0	0	0	0.007269	0.007269	0
$d\bar{d} \to c\bar{c}$	0	0	0	0.5156	0.5156	0
$d\bar{d} \to e^+e^-$	0	0	0	0.0002639	0.0002639	0
$e^+\nu_\mu \to e^+\nu_\mu$	0	0	0	0.01301	0.01301	0
$e^+\nu_e \to \mu^+\nu_\mu$	0	0	0	0.008935	0.008935	0
$e^+\nu_e \to e^+\nu_e$	0	0	0	0.05695	0.05695	0
$e^+\tau^- \to e^+\tau^-$	0	0	0	7.598	7.598	0
$e^+e^- \rightarrow \mu^+\mu^-$	0	0	0	0.0218	0.0218	0
$e^+e^- \rightarrow e^+e^-$	0	0	0	0.02438	0.02438	0
$gg \to gg$	0	0	0	2111	2111	0
$gg \to ggg$	0	0	0	0.8518	0.8518	0
$gg \to t\bar{t}$	0	0	0	0.5291	0.5291	0
$gg \to u\bar{u}$	0	0	0	0.3275	0.3275	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	0	0	0	0.0003726	0.0003726	0
$s\bar{s} \to s\bar{s}$	0	0	0	$1.173 \cdot 10^4$	$1.173 \cdot 10^4$	0
$t\bar{t} \to \nu_{\mu}\bar{\nu}_{\mu}$	0	0	0	0.001686	0.001686	0
$t\bar{t} \to \tau^+ \tau^-$	0	0	0	0.001444	0.001444	0
$t\bar{t} \to c\bar{c}$	0	0	0	0.9637	0.9637	0
$t\bar{t} \to d\bar{d}$	0	0	0	0.7599	0.7599	0
$t\bar{t} \to s\bar{s}$	0	0	0	0.5789	0.5789	0
$t\bar{t} \to t\bar{t}$	0	0	0	$1.459 \cdot 10^5$	$1.459 \cdot 10^{5}$	0
$u\bar{d} \to \mu^+ \nu_\mu$	0	0	0	0.0008154	0.0008154	0

$u\bar{d} \to c\bar{s}$	0	0	0	0.003047	0.003047	0
$u\bar{d} \to u\bar{d}$	0	0	0	383.8	383.8	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0	0	0	0.001438	0.001438	0
$u\bar{u} \to u\bar{u}$	0	0	0	$1.025\cdot 10^4$	$1.025\cdot 10^4$	0
$zz  o W^+W^-$	0	0	0	32.35	32.35	0
$zz \rightarrow zz$	0	0	0	0.08134	0.08134	0