## 1 By process

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

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
сНВ	$-5.376 \cdot 10^{-14}$	$-5.376 \cdot 10^{-14}$	0	$2.904 \cdot 10^{-16}$	$2.904 \cdot 10^{-16}$	0
cHDD	$1.127 \cdot 10^{-14}$	$1.127 \cdot 10^{-14}$	0	$1.278 \cdot 10^{-17}$	$1.278 \cdot 10^{-17}$	0
cHG	$1.628 \cdot 10^{-12}$	$1.628 \cdot 10^{-12}$	0	$3.211 \cdot 10^{-13}$	$3.211 \cdot 10^{-13}$	0
cHW	$-4.062 \cdot 10^{-14}$	$-4.062 \cdot 10^{-14}$	0	$2 \cdot 10^{-16}$	$2 \cdot 10^{-16}$	0
cHWB	$1.122 \cdot 10^{-13}$	$1.122 \cdot 10^{-13}$	0	$1.265 \cdot 10^{-15}$	$1.265 \cdot 10^{-15}$	0
cH13	$-4.498 \cdot 10^{-14}$	$-4.498 \cdot 10^{-14}$	0	$2.453 \cdot 10^{-16}$	$2.453 \cdot 10^{-16}$	0
cHq3	$1.703 \cdot 10^{-15}$	$1.703 \cdot 10^{-15}$	0	$3.516 \cdot 10^{-19}$	$3.516 \cdot 10^{-19}$	0
cdHRe	$-4.598 \cdot 10^{-14}$	$-4.598 \cdot 10^{-14}$	0	$2.125 \cdot 10^{-16}$	$2.125 \cdot 10^{-16}$	0
ceHRe	$-4.952 \cdot 10^{-15}$	$-4.952 \cdot 10^{-15}$	0	$2.465 \cdot 10^{-18}$	$2.465 \cdot 10^{-18}$	0
cll1	$2.282 \cdot 10^{-14}$	$2.282 \cdot 10^{-14}$	0	$6.313 \cdot 10^{-17}$	$6.313 \cdot 10^{-17}$	0
cuHRe	$-2.283 \cdot 10^{-15}$	$-2.283 \cdot 10^{-15}$	0	$5.238 \cdot 10^{-19}$	$5.238 \cdot 10^{-19}$	0
sm	0	0	0	0.1988	0.1988	0

#### 1.2 $HH \rightarrow H\tau^+\tau^-$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сНВ	$-1.655 \cdot 10^{-20}$	$-1.655 \cdot 10^{-20}$	0	$8.294 \cdot 10^{-22}$	$8.294 \cdot 10^{-22}$	0
cHDD	$3.472 \cdot 10^{-21}$	$3.472 \cdot 10^{-21}$	0	$3.648 \cdot 10^{-23}$	$3.648 \cdot 10^{-23}$	0
cHG	$-5.507 \cdot 10^{-21}$	$-5.507 \cdot 10^{-21}$	0	$2.06 \cdot 10^{-20}$	$2.06 \cdot 10^{-20}$	0
cHW	$1.375 \cdot 10^{-22}$	$1.375 \cdot 10^{-22}$	0	$1.283 \cdot 10^{-23}$	$1.283 \cdot 10^{-23}$	0
cHWB	$3.455 \cdot 10^{-20}$	$3.455 \cdot 10^{-20}$	0	$3.613 \cdot 10^{-21}$	$3.613 \cdot 10^{-21}$	0
cH13	$1.522 \cdot 10^{-22}$	$1.522 \cdot 10^{-22}$	0	$1.574 \cdot 10^{-23}$	$1.574 \cdot 10^{-23}$	0

cHq3	$-5.763 \cdot 10^{-24}$	$-5.763 \cdot 10^{-24}$	0	$2.256 \cdot 10^{-26}$	$2.256 \cdot 10^{-26}$	0
cdHRe	$-1.416 \cdot 10^{-20}$	$-1.416 \cdot 10^{-20}$	0	$6.068 \cdot 10^{-22}$	$6.068 \cdot 10^{-22}$	0
ceHRe	$-1.525 \cdot 10^{-21}$	$-1.525 \cdot 10^{-21}$	0	$7.038 \cdot 10^{-24}$	$7.038 \cdot 10^{-24}$	0
cll1	$-7.722 \cdot 10^{-23}$	$-7.722 \cdot 10^{-23}$	0	$4.05 \cdot 10^{-24}$	$4.05 \cdot 10^{-24}$	0
cuHRe	$-7.029 \cdot 10^{-22}$	$-7.029 \cdot 10^{-22}$	0	$1.496 \cdot 10^{-24}$	$1.496 \cdot 10^{-24}$	0
sm	0	0	0	$1.471 \cdot 10^{-11}$	$1.471 \cdot 10^{-11}$	0

### 1.3 $HH \rightarrow Hb\bar{b}$

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
сНВ	$-5.146 \cdot 10^{-22}$	$-5.146 \cdot 10^{-22}$	0	$5.179 \cdot 10^{-23}$	$5.179 \cdot 10^{-23}$	0
cHDD	$1.079 \cdot 10^{-22}$	$1.079 \cdot 10^{-22}$	0	$2.278 \cdot 10^{-24}$	$2.278 \cdot 10^{-24}$	0
cHG	$3.146 \cdot 10^{-20}$	$3.146 \cdot 10^{-20}$	0	$4.513 \cdot 10^{-20}$	$4.513 \cdot 10^{-20}$	0
cHW	$-7.853 \cdot 10^{-22}$	$-7.853 \cdot 10^{-22}$	0	$2.812 \cdot 10^{-23}$	$2.812 \cdot 10^{-23}$	0
cHWB	$1.074 \cdot 10^{-21}$	$1.074 \cdot 10^{-21}$	0	$2.256 \cdot 10^{-22}$	$2.256 \cdot 10^{-22}$	0
cH13	$-8.695 \cdot 10^{-22}$	$-8.695 \cdot 10^{-22}$	0	$3.447 \cdot 10^{-23}$	$3.447 \cdot 10^{-23}$	0
cHq3	$3.292 \cdot 10^{-23}$	$3.292 \cdot 10^{-23}$	0	$4.942 \cdot 10^{-26}$	$4.942 \cdot 10^{-26}$	0
cdHRe	$-4.402 \cdot 10^{-22}$	$-4.402 \cdot 10^{-22}$	0	$3.789 \cdot 10^{-23}$	$3.789 \cdot 10^{-23}$	0
ceHRe	$-4.741 \cdot 10^{-23}$	$-4.741 \cdot 10^{-23}$	0	$4.395 \cdot 10^{-25}$	$4.395 \cdot 10^{-25}$	0
cll1	$4.411 \cdot 10^{-22}$	$4.411 \cdot 10^{-22}$	0	$8.873 \cdot 10^{-24}$	$8.873 \cdot 10^{-24}$	0
cuHRe	$-2.185 \cdot 10^{-23}$	$-2.185 \cdot 10^{-23}$	0	$9.34 \cdot 10^{-26}$	$9.34 \cdot 10^{-26}$	0
sm	0	0	0	$1.547 \cdot 10^{-9}$	$1.547 \cdot 10^{-9}$	0

## 1.4 $HH \rightarrow W^+W^-$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$
сНВ	$-4.357 \cdot 10^{-10}$	$-4.357 \cdot 10^{-10}$	0	$1.095 \cdot 10^{-15}$	$1.095 \cdot 10^{-15}$	0

cHDD	0.8637	0.8637	0	0.5076	0.5076	0
cHG	$2.934 \cdot 10^{-8}$	$2.934 \cdot 10^{-8}$	0	$1.529 \cdot 10^{-12}$	$1.529 \cdot 10^{-12}$	0
cHW	$-7.324 \cdot 10^{-10}$	$-7.324 \cdot 10^{-10}$	0	$9.526 \cdot 10^{-16}$	$9.526 \cdot 10^{-16}$	0
cHWB	1.907	1.907	0	2.475	2.475	0
cHl3	3.994	3.994	0	0.7751	0.7751	0
cHq3	$7.067 \cdot 10^{-6}$	$7.067 \cdot 10^{-6}$	0	$9.413 \cdot 10^{-7}$	$9.413 \cdot 10^{-7}$	0
cdHRe	$-3.727 \cdot 10^{-10}$	$-3.727 \cdot 10^{-10}$	0	$8.01 \cdot 10^{-16}$	$8.01 \cdot 10^{-16}$	0
ceHRe	$-4.014 \cdot 10^{-11}$	$-4.014 \cdot 10^{-11}$	0	$9.29 \cdot 10^{-18}$	$9.29 \cdot 10^{-18}$	0
cll1	-1.997	-1.997	0	0.1938	0.1938	0
cuHRe	$-1.85 \cdot 10^{-11}$	$-1.85 \cdot 10^{-11}$	0	$1.974 \cdot 10^{-18}$	$1.974 \cdot 10^{-18}$	0
sm	0	0	0	0.4532	0.4532	0

## 1.5 $HH \rightarrow W^+W^-\gamma$

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHB	$-1.732 \cdot 10^{-15}$	$-1.732 \cdot 10^{-15}$	0	$2.434 \cdot 10^{-21}$	$2.434 \cdot 10^{-21}$	0
cHDD	$1.71 \cdot 10^{-7}$	$1.71 \cdot 10^{-7}$	0	$6.815 \cdot 10^{-7}$	$6.815 \cdot 10^{-7}$	0
cHG	$8.839 \cdot 10^{-14}$	$8.839 \cdot 10^{-14}$	0	$3.231 \cdot 10^{-18}$	$3.231 \cdot 10^{-18}$	0
cHW	$-2.206 \cdot 10^{-15}$	$-2.206 \cdot 10^{-15}$	0	$2.013 \cdot 10^{-21}$	$2.013 \cdot 10^{-21}$	0
cHWB	$3.776 \cdot 10^{-7}$	$3.776 \cdot 10^{-7}$	0	$3.323 \cdot 10^{-6}$	$3.323 \cdot 10^{-6}$	0
cH13	$2.983 \cdot 10^{-6}$	$2.983 \cdot 10^{-6}$	0	$1.302 \cdot 10^{-6}$	$1.302 \cdot 10^{-6}$	0
cHq3	$7.365 \cdot 10^{-11}$	$7.365 \cdot 10^{-11}$	0	$5.099 \cdot 10^{-12}$	$5.099 \cdot 10^{-12}$	0
cdHRe	$-1.482 \cdot 10^{-15}$	$-1.482 \cdot 10^{-15}$	0	$1.781 \cdot 10^{-21}$	$1.781 \cdot 10^{-21}$	0
ceHRe	$-1.596 \cdot 10^{-16}$	$-1.596 \cdot 10^{-16}$	0	$2.065 \cdot 10^{-23}$	$2.065 \cdot 10^{-23}$	0
cll1	$-1.492 \cdot 10^{-6}$	$-1.492 \cdot 10^{-6}$	0	$3.254 \cdot 10^{-7}$	$3.254 \cdot 10^{-7}$	0
cuHRe	$-7.355 \cdot 10^{-17}$	$-7.355 \cdot 10^{-17}$	0	$4.389 \cdot 10^{-24}$	$4.389 \cdot 10^{-24}$	0
sm	0	0	0	$5.962 \cdot 10^{-6}$	$5.962 \cdot 10^{-6}$	0

## 1.6 $HH \rightarrow W^+ e^- \bar{\nu}_e$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сНВ	$1.559 \cdot 10^{-16}$	$1.559 \cdot 10^{-16}$	0	$1.866 \cdot 10^{-23}$	$1.866 \cdot 10^{-23}$	0		
cHDD	$1.328 \cdot 10^{-8}$	$1.328 \cdot 10^{-8}$	0	$8.888 \cdot 10^{-9}$	$8.888 \cdot 10^{-9}$	0		
сHG	$-1.92 \cdot 10^{-15}$	$-1.92 \cdot 10^{-15}$	0	$2.691 \cdot 10^{-22}$	$2.691 \cdot 10^{-22}$	0		
cHW	$4.793 \cdot 10^{-17}$	$4.793 \cdot 10^{-17}$	0	$1.677 \cdot 10^{-25}$	$1.677 \cdot 10^{-25}$	0		
cHWB	$2.933 \cdot 10^{-8}$	$2.933 \cdot 10^{-8}$	0	$4.334 \cdot 10^{-8}$	$4.334 \cdot 10^{-8}$	0		
cH13	$1.029 \cdot 10^{-7}$	$1.029 \cdot 10^{-7}$	0	$3.306 \cdot 10^{-9}$	$3.306 \cdot 10^{-9}$	0		
сНqЗ	$1.582 \cdot 10^{-11}$	$1.582 \cdot 10^{-11}$	0	$3.314 \cdot 10^{-14}$	$3.314 \cdot 10^{-14}$	0		
cdHRe	$1.334 \cdot 10^{-16}$	$1.334 \cdot 10^{-16}$	0	$1.365 \cdot 10^{-23}$	$1.365 \cdot 10^{-23}$	0		
ceHRe	$1.436 \cdot 10^{-17}$	$1.436 \cdot 10^{-17}$	0	$1.583 \cdot 10^{-25}$	$1.583 \cdot 10^{-25}$	0		
cll1	$-5.144 \cdot 10^{-8}$	$-5.144 \cdot 10^{-8}$	0	$8.264 \cdot 10^{-10}$	$8.264 \cdot 10^{-10}$	0		
cuHRe	$6.621 \cdot 10^{-18}$	$6.621 \cdot 10^{-18}$	0	$3.365 \cdot 10^{-26}$	$3.365 \cdot 10^{-26}$	0		
sm	0	0	0	$1.088 \cdot 10^{-7}$	$1.088 \cdot 10^{-7}$	0		

### 1.7 $HH \rightarrow W^- u \bar{d}$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cHB	$7.805 \cdot 10^{-17}$	$7.805 \cdot 10^{-17}$	0	$7.915 \cdot 10^{-25}$	$7.915 \cdot 10^{-25}$	0
cHDD	$5.618 \cdot 10^{-8}$	$5.618 \cdot 10^{-8}$	0	$1.803 \cdot 10^{-9}$	$1.803 \cdot 10^{-9}$	0
cHG	$-2.246 \cdot 10^{-14}$	$-2.246 \cdot 10^{-14}$	0	$6.439 \cdot 10^{-20}$	$6.439 \cdot 10^{-20}$	0
cHW	$5.605 \cdot 10^{-16}$	$5.605 \cdot 10^{-16}$	0	$4.012 \cdot 10^{-23}$	$4.012 \cdot 10^{-23}$	0
cHWB	$1.24 \cdot 10^{-7}$	$1.24 \cdot 10^{-7}$	0	$8.792 \cdot 10^{-9}$	$8.792 \cdot 10^{-9}$	0
cHl3	$6.63 \cdot 10^{-8}$	$6.63 \cdot 10^{-8}$	0	$3.022 \cdot 10^{-8}$	$3.022 \cdot 10^{-8}$	0
cHq3	$-2.834 \cdot 10^{-11}$	$-2.834 \cdot 10^{-11}$	0	$9.601 \cdot 10^{-14}$	$9.601 \cdot 10^{-14}$	0
cdHRe	$6.676 \cdot 10^{-17}$	$6.676 \cdot 10^{-17}$	0	$5.791 \cdot 10^{-25}$	$5.791 \cdot 10^{-25}$	0

ceHRe	$7.19 \cdot 10^{-18}$	$7.19 \cdot 10^{-18}$	0	$6.717 \cdot 10^{-27}  6.717 \cdot 10^{-27}$	0
cll1	$-3.316 \cdot 10^{-8}$	$-3.316 \cdot 10^{-8}$	0	$7.558 \cdot 10^{-9}$ $7.558 \cdot 10^{-9}$	0
cuHRe	$3.314 \cdot 10^{-18}$	$3.314 \cdot 10^{-18}$	0	$1.427 \cdot 10^{-27}$ $1.427 \cdot 10^{-27}$	0
sm	0	0	0	$5.169 \cdot 10^{-7}$ $5.169 \cdot 10^{-7}$	0

# 1.8 $HH \rightarrow z\bar{b}b$

		interfere	nce		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
сG	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
сН	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
cHB	$1.127 \cdot 10^{-16}$	$1.127 \cdot 10^{-16}$	0	$8.302 \cdot 10^{-24}$	$8.302 \cdot 10^{-24}$	0
cHDD	$-6.016 \cdot 10^{-15}$	$-6.016 \cdot 10^{-15}$	0	$2.926 \cdot 10^{-15}$	$2.926 \cdot 10^{-15}$	0
cHG	$2.209 \cdot 10^{-15}$	$2.209 \cdot 10^{-15}$	0	$2.516 \cdot 10^{-19}$	$2.516 \cdot 10^{-19}$	0
cHW	$-5.515 \cdot 10^{-17}$	$-5.515 \cdot 10^{-17}$	0	$1.567 \cdot 10^{-22}$	$1.567 \cdot 10^{-22}$	0
cHWB	$-7.554 \cdot 10^{-15}$	$-7.554 \cdot 10^{-15}$	0	$4.364 \cdot 10^{-15}$	$4.364 \cdot 10^{-15}$	0
cHd	$-1.689 \cdot 10^{-15}$	$-1.689 \cdot 10^{-15}$	0	$2.326 \cdot 10^{-16}$	$2.326 \cdot 10^{-16}$	0
сНе	$2.195 \cdot 10^{-13}$	$2.195 \cdot 10^{-13}$	0	$6.72 \cdot 10^{-16}$	$6.72 \cdot 10^{-16}$	0
cHl1	$-1.712 \cdot 10^{-15}$	$-1.712 \cdot 10^{-15}$	0	$2.39 \cdot 10^{-16}$	$2.39 \cdot 10^{-16}$	0
cH13	$2.352 \cdot 10^{-12}$	$2.352 \cdot 10^{-12}$	0	$7.717 \cdot 10^{-14}$	$7.717 \cdot 10^{-14}$	0
cHq1	$4.214 \cdot 10^{-15}$	$4.214 \cdot 10^{-15}$	0	$1.447 \cdot 10^{-15}$	$1.447 \cdot 10^{-15}$	0
cHq3	$-1.834 \cdot 10^{-12}$	$-1.834 \cdot 10^{-12}$	0	$4.693 \cdot 10^{-14}$	$4.693 \cdot 10^{-14}$	0
cHu	$2.283 \cdot 10^{-15}$	$2.283 \cdot 10^{-15}$	0	$4.248 \cdot 10^{-16}$	$4.248 \cdot 10^{-16}$	0
cHudRe	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
cW	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
cdBRe	$7.27 \cdot 10^{-16}$	$7.27 \cdot 10^{-16}$	0	$7.373 \cdot 10^{-21}$	$7.373 \cdot 10^{-21}$	0
cdGRe	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
cdHRe	$9.639 \cdot 10^{-17}$	$9.639 \cdot 10^{-17}$	0	$6.075 \cdot 10^{-2}$	$6.075 \cdot 10^{-24}$	$^{4}$ 0
cdWRe	$1.317 \cdot 10^{-15}$	$1.317 \cdot 10^{-15}$	0	$2.419 \cdot 10^{-2}$	$2.419 \cdot 10^{-20}$	0

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cledqRe $4.173 \cdot 10^{-27}$ 0 1 $2.429 \cdot 10^{-43}$ 0	1
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clequ3Re $-3.256 \cdot 10^{-29}$ 0 1 $8.637 \cdot 10^{-44}$ 0	1
cll $-3.256 \cdot 10^{-29}$ 0 1 $8.637 \cdot 10^{-44}$ 0	1
cll1 $-1.536 \cdot 10^{-12}  -1.536 \cdot 10^{-12}  0$ $3.292 \cdot 10^{-14}  3.292 \cdot 10^{-14}$	0
clq1 $-3.256 \cdot 10^{-29}$ 0 1 $8.637 \cdot 10^{-44}$ 0	1
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cqe $-3.256 \cdot 10^{-29}$ 0 1 $8.637 \cdot 10^{-44}$ 0	1
cqq1 $4.173 \cdot 10^{-27}$ 0 1 $2.429 \cdot 10^{-43}$ 0	1
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cqq3 $4.173 \cdot 10^{-27}$ 0 1 $2.429 \cdot 10^{-43}$ 0	1
cqq31 $4.173 \cdot 10^{-27}$ 0 1 $2.429 \cdot 10^{-43}$ 0	1
cqu1 $-3.256 \cdot 10^{-29}$ 0 1 $8.637 \cdot 10^{-44}$ 0	1
cqu8 $-3.256 \cdot 10^{-29}$ 0 1 $8.637 \cdot 10^{-44}$ 0	1
cquqd11Re $-3.256 \cdot 10^{-29}$ 0 1 $8.637 \cdot 10^{-44}$ 0	1
cquqd1Re $-3.256 \cdot 10^{-29}$ 0 1 $8.637 \cdot 10^{-44}$ 0	1

cquqd81Re	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
cquqd8Re	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
cuBRe	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
cuGRe	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
cuHRe	$4.786 \cdot 10^{-18}$	$4.786 \cdot 10^{-18}$	0	$1.497 \cdot 10^{-26}$	$1.497 \cdot 10^{-26}$	0
cuWRe	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
cud1	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
cud8	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
cuu	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
cuu1	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
sm	0	0	0	$1.547 \cdot 10^{-7}$	$1.547 \cdot 10^{-7}$	0

#### 1.9 $HH \rightarrow zc\bar{c}$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сG	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1		
сН	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1		
cHB	$6.945 \cdot 10^{-17}$	$6.945 \cdot 10^{-17}$	0	$2.604 \cdot 10^{-22}$	$2.604 \cdot 10^{-22}$	0		
cHDD	$-1.011 \cdot 10^{-13}$	$-1.011 \cdot 10^{-13}$	0	$3.025 \cdot 10^{-14}$	$3.025 \cdot 10^{-14}$	0		
cHG	$-3.635 \cdot 10^{-16}$	$-3.635 \cdot 10^{-16}$	0	$1.181 \cdot 10^{-21}$	$1.181 \cdot 10^{-21}$	0		
cHW	$9.074 \cdot 10^{-18}$	$9.074 \cdot 10^{-18}$	0	$7.355 \cdot 10^{-25}$	$7.355 \cdot 10^{-25}$	0		
cHWB	$-1.236 \cdot 10^{-13}$	$-1.236 \cdot 10^{-13}$	0	$4.511 \cdot 10^{-14}$	$4.511 \cdot 10^{-14}$	0		
cHd	$-2.851 \cdot 10^{-14}$	$-2.851 \cdot 10^{-14}$	0	$2.405 \cdot 10^{-15}$	$2.405 \cdot 10^{-15}$	0		
сНе	$-1.1 \cdot 10^{-13}$	$-1.1 \cdot 10^{-13}$	0	$9.455 \cdot 10^{-17}$	$9.455 \cdot 10^{-17}$	0		
cHl1	$-2.89 \cdot 10^{-14}$	$-2.89 \cdot 10^{-14}$	0	$2.471 \cdot 10^{-15}$	$2.471 \cdot 10^{-15}$	0		
cH13	$-1.179 \cdot 10^{-12}$	$-1.179 \cdot 10^{-12}$	0	$1.086 \cdot 10^{-14}$	$1.086 \cdot 10^{-14}$	0		
cHq1	$7.11\cdot 10^{-14}$	$7.11 \cdot 10^{-14}$	0	$1.496 \cdot 10^{-14}$	$1.496 \cdot 10^{-14}$	0		
сНq3	$9.196 \cdot 10^{-13}$	$9.196 \cdot 10^{-13}$	0	$6.603 \cdot 10^{-15}$	$6.603 \cdot 10^{-15}$	0		

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cHu	$3.853 \cdot 10^{-14}$ $3.853 \cdot 10^{-14}$	$0^{-14}$ 0		$.392 \cdot 10^{-15}$	0
cHudRe	$-5.493 \cdot 10^{-28}$ 0	1	$8.929 \cdot 10^{-43}$	0	1
cM	$-2.092 \cdot 10^{-27} \qquad \qquad 0$	1	$3.417 \cdot 10^{-44}$	0	1
cdBRe	$-3.645 \cdot 10^{-16}  -3.645 \cdot 1$	$0^{-16}$ 0	$1.037 \cdot 10^{-21}$ 1	$.037 \cdot 10^{-21}$	0
cdGRe	$-2.092 \cdot 10^{-27} \qquad \qquad 0$	1	$3.417 \cdot 10^{-44}$	0	1
cdHRe	$5.94 \cdot 10^{-17}$ $5.94 \cdot$	$10^{-17}$ 0	$1.905 \cdot 10^{-22}$	$1.905 \cdot 10^{-22}$	0
cdWRe	$-6.603 \cdot 10^{-16}$ $-6.603$	$\cdot 10^{-16}$ 0	$3.404 \cdot 10^{-21}$	$3.404 \cdot 10^{-21}$	0
cdd	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
cdd1	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
ceBRe	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
ceHRe	$6.398 \cdot 10^{-18}$ $6.398$	$10^{-18}$ 0	$2.21 \cdot 10^{-24}$	$2.21 \cdot 10^{-24}$	0
ceWRe	$-2.092 \cdot 10^{-27}$	) 1	$3.417 \cdot 10^{-44}$	0	1
ced	$-2.092 \cdot 10^{-27}$	) 1	$3.417 \cdot 10^{-44}$	0	1
cee	$-2.092 \cdot 10^{-27}$	) 1	$3.417 \cdot 10^{-44}$	0	1
ceu	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
cld	$-2.092 \cdot 10^{-27}$	) 1	$3.417 \cdot 10^{-44}$	0	1
cle	$-2.092 \cdot 10^{-27}$	) 1	$3.417 \cdot 10^{-44}$	0	1
cledqRe	$-2.092 \cdot 10^{-27}$	) 1	$3.417 \cdot 10^{-44}$	0	1
clequ1Re	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
clequ3Re	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
cll	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
cll1	$7.702 \cdot 10^{-13}$ $7.702$	$10^{-13}$ 0	$4.631 \cdot 10^{-15}$	$4.631 \cdot 10^{-15}$	0
clq1	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
clq3	$-2.092 \cdot 10^{-27}$	) 1	$3.417 \cdot 10^{-44}$	0	1
clu	$-5.493 \cdot 10^{-28}$	) 1	$8.929 \cdot 10^{-43}$	0	1
cqd1	$-2.092 \cdot 10^{-27}$	0 1	$3.417 \cdot 10^{-44}$	0	1
cqd8	$-2.092 \cdot 10^{-27}$	0 1	$3.417 \cdot 10^{-44}$	0	1
cqe	$-5.493 \cdot 10^{-28}$	0 1	$8.929 \cdot 10^{-43}$	0	1
cqq1	$-2.092 \cdot 10^{-27}$	0 1	$3.417 \cdot 10^{-44}$	0	1

cqq11	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
cqq3	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
cqq31	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
cqu1	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
cqu8	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
cquqd11Re	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
cquqd1Re	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
cquqd81Re	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
cquqd8Re	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
cuBRe	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
cuGRe	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
cuHRe		$2.949 \cdot 10^{-18}$	0	$4.696 \cdot 10^{-25}$	$4.696 \cdot 10^{-25}$	0
cuWRe	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
cud1	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
cud8	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
cuu	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
cuu1	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
sm	0	0	0	$3.434 \cdot 10^{-7}$	$3.434 \cdot 10^{-7}$	0

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сG	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
сН	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
сНВ	$1.546 \cdot 10^{-14}$	$1.546 \cdot 10^{-14}$	0	$8.127 \cdot 10^{-22}$	$8.127 \cdot 10^{-22}$	0	
cHDD	$5.205 \cdot 10^{-10}$	$5.205 \cdot 10^{-10}$	0	$6.825 \cdot 10^{-13}$	$6.825 \cdot 10^{-13}$	0	
cHG	$2.199 \cdot 10^{-13}$	$2.199 \cdot 10^{-13}$	0	$1.931 \cdot 10^{-18}$	$1.931 \cdot 10^{-18}$	0	
cHW	$-5.488 \cdot 10^{-15}$	$-5.488 \cdot 10^{-15}$	0	$1.203 \cdot 10^{-21}$	$1.203 \cdot 10^{-21}$	0	

cHWB	$5.405 \cdot 10^{-10}$ $5.40$	$5 \cdot 10^{-10}$	0	$6.904 \cdot 10^{-13}$	$6.904 \cdot 10^{-13}$	0
cHd	$1.739 \cdot 10^{-10}$ 1.73	$9 \cdot 10^{-10}$	0	$8.128 \cdot 10^{-14}$	$8.128 \cdot 10^{-14}$	0
сНе	$-6.643 \cdot 10^{-11}$ $-6.64$	$43 \cdot 10^{-11}$	0	$1.749 \cdot 10^{-13}$	$1.749 \cdot 10^{-13}$	0
cHl1	$1.763 \cdot 10^{-10}$ 1.76	$3 \cdot 10^{-10}$	0	$8.351 \cdot 10^{-14}$	$8.351 \cdot 10^{-14}$	0
cH13	$-6.335 \cdot 10^{-10}$ $-6.33$	$35 \cdot 10^{-10}$	0	$9.208 \cdot 10^{-11}$	$9.208 \cdot 10^{-11}$	0
cHq1	$-4.337 \cdot 10^{-10}$ $-4.33$	$37 \cdot 10^{-10}$	0	$5.056 \cdot 10^{-13}$	$5.056 \cdot 10^{-13}$	0
cHq3	$4.673 \cdot 10^{-10}$ $4.67$	$3 \cdot 10^{-10}$	0	$8.621 \cdot 10^{-11}$	$8.621 \cdot 10^{-11}$	0
cHu	$-2.35 \cdot 10^{-10}$ $-2.3$	$35 \cdot 10^{-10}$	0	$1.485 \cdot 10^{-13}$	$1.485 \cdot 10^{-13}$	0
cHudRe	$-3.611 \cdot 10^{-13}$ $-3.63$	$11 \cdot 10^{-13}$	0	$5.304 \cdot 10^{-19}$	$5.304 \cdot 10^{-19}$	0
cW	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cdBRe	$-2.201 \cdot 10^{-13}$ $-2.20$	$01 \cdot 10^{-13}$	0	$1.919 \cdot 10^{-18}$	$1.919 \cdot 10^{-18}$	0
cdGRe	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cdHRe	$1.323 \cdot 10^{-14}$ 1.	$323 \cdot 10^{-14}$	0	$5.946 \cdot 10^{-3}$	$5.946 \cdot 10^{-22}$	0
cdWRe	$-5.068 \cdot 10^{-13}$ $-5$	$5.068 \cdot 10^{-13}$	0	$2.874 \cdot 10^{-1}$	$2.874 \cdot 10^{-17}$	0
cdd	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-6}$	0   0	1
cdd1	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-6}$	0   0	1
ceBRe	$4.355 \cdot 10^{-24}$	0	1	$5.567\cdot 10^{-4}$	0   0	1
ceHRe	$1.425 \cdot 10^{-15}$ 1.	$425 \cdot 10^{-15}$	0	$6.897 \cdot 10^{-3}$	$6.897 \cdot 10^{-24}$	0
ceWRe	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-4}$	0   0	1
ced	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-6}$	0   0	1
cee	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-6}$	0   0	1
ceu	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-6}$	0   0	1
cld	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-6}$	0   0	1
cle	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-6}$	0   0	1
cledqRe	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-6}$	0   0	1
clequ1Re	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-6}$	0   0	1
clequ3Re	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-6}$	0   0	1
cll	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-6}$	0   0	1
cll1	$4.257 \cdot 10^{-10} \qquad 4.$	$257 \cdot 10^{-10}$	0	$2.985 \cdot 10^{-1}$	$2.985 \cdot 10^{-11}$	0

clq1	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
clq3	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
clu	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cqd1	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cqd8	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cqe	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cqq1	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cqq11	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cqq3	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cqq31	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cqu1	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cqu8	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cquqd11Re	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cquqd1Re	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cquqd81Re	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cquqd8Re	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cuBRe	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cuGRe	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cuHRe	$6.567 \cdot 10^{-16}$	$6.567 \cdot 10^{-16}$	0	$1.466 \cdot 10^{-24}$	$1.466 \cdot 10^{-24}$	0
cuWRe	$1.495 \cdot 10^{-9}$	$1.495 \cdot 10^{-9}$	0	$9.093 \cdot 10^{-12}$	$9.093 \cdot 10^{-12}$	0
cud1	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cud8	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
cuu	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
cuu1	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
sm	0	0	0	$2.832 \cdot 10^{-5}$	$2.832 \cdot 10^{-5}$	0

#### $\textbf{1.11} \quad HH \rightarrow zz$

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сG	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
сН	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
сНВ	$-2.903 \cdot 10^{-10}$	$-2.903 \cdot 10^{-10}$	0	$5.432 \cdot 10^{-16}$	$5.432 \cdot 10^{-16}$	0
cHDD	$-2.831 \cdot 10^{-6}$	$-2.831 \cdot 10^{-6}$	0	$6.655 \cdot 10^{-8}$	$6.655 \cdot 10^{-8}$	0
cHG	$1.153 \cdot 10^{-8}$	$1.153 \cdot 10^{-8}$	0	$7.587 \cdot 10^{-13}$	$7.587 \cdot 10^{-13}$	0
cHW	$-2.879 \cdot 10^{-10}$	$-2.879 \cdot 10^{-10}$	0	$4.727 \cdot 10^{-16}$	$4.727 \cdot 10^{-16}$	0
cHWB	$-3.457 \cdot 10^{-6}$	$-3.457 \cdot 10^{-6}$	0	$9.924 \cdot 10^{-8}$	$9.924 \cdot 10^{-8}$	0
cHd	$-7.981 \cdot 10^{-7}$	$-7.981 \cdot 10^{-7}$	0	$5.29 \cdot 10^{-9}$	$5.29 \cdot 10^{-9}$	0
сНе	$-8.535 \cdot 10^{-7}$	$-8.535 \cdot 10^{-7}$	0	$6.168 \cdot 10^{-9}$	$6.168 \cdot 10^{-9}$	0
cHl1	$-8.089 \cdot 10^{-7}$	$-8.089 \cdot 10^{-7}$	0	$5.435 \cdot 10^{-9}$	$5.435 \cdot 10^{-9}$	0
cH13	$-9.146 \cdot 10^{-6}$	$-9.146 \cdot 10^{-6}$	0	$7.084 \cdot 10^{-7}$	$7.084 \cdot 10^{-7}$	0
cHq1	$1.99 \cdot 10^{-6}$	$1.99 \cdot 10^{-6}$	0	$3.29 \cdot 10^{-8}$	$3.29 \cdot 10^{-8}$	0
сНq3	$7.132 \cdot 10^{-6}$	$7.132 \cdot 10^{-6}$	0	$4.308 \cdot 10^{-7}$	$4.308 \cdot 10^{-7}$	0
cHu	$1.079 \cdot 10^{-6}$	$1.079 \cdot 10^{-6}$	0	$9.662 \cdot 10^{-9}$	$9.662 \cdot 10^{-9}$	0
cHudRe	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cW	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cdBRe	$-2.827 \cdot 10^{-9}$	$-2.827 \cdot 10^{-9}$	0	$6.768 \cdot 10^{-14}$	$6.768 \cdot 10^{-14}$	0
cdGRe	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cdHRe	$-2.483 \cdot 10^{-1}$	$0 -2.483 \cdot 10^{-1}$	0 0	$3.975 \cdot 10^{-1}$	$6  3.975 \cdot 10^{-16}$	0
cdWRe	$-5.121 \cdot 10^{-9}$	$-5.121 \cdot 10^{-9}$	9 0	$2.221 \cdot 10^{-1}$	$3  2.221 \cdot 10^{-13}$	0
cdd	$-1.538 \cdot 10^{-2}$	0	1	$1.964 \cdot 10^{-3}$	0	1
cdd1	$-1.538 \cdot 10^{-2}$	0	1	$1.964 \cdot 10^{-3}$	0	1
ceBRe	$-1.538 \cdot 10^{-2}$	0	1	$1.964 \cdot 10^{-3}$	0	1
ceHRe	$-2.674 \cdot 10^{-1}$	$1  -2.674 \cdot 10^{-1}$	1 0	$4.61 \cdot 10^{-18}$	$4.61 \cdot 10^{-18}$	0
ceWRe	$-1.623 \cdot 10^{-2}$	0	1	$2.229 \cdot 10^{-3}$	0	1
ced	$-1.623 \cdot 10^{-2}$	0	1	$2.229 \cdot 10^{-3}$	0	1
cee	$-1.623 \cdot 10^{-2}$	0	1	$2.229 \cdot 10^{-3}$	0	1
ceu	$-1.538 \cdot 10^{-2}$	0	1	$1.964 \cdot 10^{-3}$	0	1

cld	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cle	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cledqRe	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
clequ1Re	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
clequ3Re	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cll	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cll1	$5.973 \cdot 10^{-6}$	$5.973 \cdot 10^{-6}$	0	$3.022 \cdot 10^{-7}$	$3.022 \cdot 10^{-7}$	0
clq1	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
clq3	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
clu	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cqd1	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cqd8	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cqe	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cqq1	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cqq11	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cqq3	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cqq31	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cqu1	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cqu8	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cquqd11Re	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cquqd1Re	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cquqd81Re	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cquqd8Re	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cuBRe	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cuGRe	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cuHRe	$-1.233 \cdot 10^{-11}$	$-1.233 \cdot 10^{-11}$	0	$9.797 \cdot 10^{-19}$	$9.797 \cdot 10^{-19}$	0
cuWRe	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cud1	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
cud8	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1

cuu	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
cuu1	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
sm	0	0	0	0.3519	0.3519	0

## 1.12 $HW^+ \rightarrow \gamma t \bar{b}$

		nce		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
сG	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
сН	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cHB	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cHDD	$1.597 \cdot 10^{-8}$	$1.597 \cdot 10^{-8}$	0	$8.354 \cdot 10^{-10}$	$8.354 \cdot 10^{-10}$	0
cHG	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cHW	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cHWB	$3.527 \cdot 10^{-8}$	$3.527 \cdot 10^{-8}$	0	$4.073 \cdot 10^{-9}$	$4.073 \cdot 10^{-9}$	0
cHd	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
сНе	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cHl1	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cH13	$2.034 \cdot 10^{-8}$	$2.034 \cdot 10^{-8}$	0	$7.85 \cdot 10^{-9}$	$7.85 \cdot 10^{-9}$	0
cHq1	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
сНqЗ	$-3.708 \cdot 10^{-11}$ -	$-3.708 \cdot 10^{-11}$	0	$2.379 \cdot 10^{-13}$	$2.379 \cdot 10^{-13}$	0
cHu	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cHudRe	$-1.761 \cdot 10^{-15}$ -	$-1.761 \cdot 10^{-15}$	0	$2.205 \cdot 10^{-21}$	$2.205 \cdot 10^{-21}$	0
cW	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cdBRe	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cdGRe	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cdHRe	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-4}$	0 - 0	1
cdWRe	$-9.574 \cdot 10^{-14}$	$-9.574 \cdot 10^{-14}$	0 - 0	$5.201 \cdot 10^{-1}$	$5.201 \cdot 10^{-19}$	0
cdd	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-4}$	0	1

	4.00 = 1.0-27	0	4	1 707 10-11	0	4
cdd1	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
ceBRe	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
ceHRe	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
ceWRe	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
ced	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cee	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
ceu	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cld	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cle	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cledqRe	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
clequ1Re	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
clequ3Re	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cll	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cll1	$-1.016 \cdot 10^{-8}$	$-1.016 \cdot 10^{-8}$	0	$1.962 \cdot 10^{-9}$	$1.962 \cdot 10^{-9}$	0
clq1	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
clq3	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
clu	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cqd1	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cqd8	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cqe	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cqq1	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cqq11	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cqq3	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cqq31	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cqu1	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cqu8	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cquqd11Re	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cquqd1Re	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cquqd81Re	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1

cquqd8Re	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cuBRe	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cuGRe	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cuHRe	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cuWRe	$7.289 \cdot 10^{-12}$	$7.289 \cdot 10^{-12}$	0	$3.781 \cdot 10^{-14}$	$3.781 \cdot 10^{-14}$	0
cud1	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cud8	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
cuu	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
cuu1	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
sm	0	0	0	$1.465 \cdot 10^{-7}$	$1.465 \cdot 10^{-7}$	0

# 1.13 $HW^+ \rightarrow \gamma u \bar{d}$

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$6.04 \cdot 10^{-11}$	$6.04 \cdot 10^{-11}$	0	$2.084 \cdot 10^{-13}$	$2.084 \cdot 10^{-13}$	0	
cHWB	$1.334 \cdot 10^{-10}$	$1.334 \cdot 10^{-10}$	0	$1.016 \cdot 10^{-12}$	$1.016 \cdot 10^{-12}$	0	
cHl3	$-1.509 \cdot 10^{-11}$	$-1.509 \cdot 10^{-11}$	0	$2.658 \cdot 10^{-13}$	$2.658 \cdot 10^{-13}$	0	
cHq3	$-3.6 \cdot 10^{-12}$	$-3.6 \cdot 10^{-12}$	0	$8.45 \cdot 10^{-14}$	$8.45 \cdot 10^{-14}$	0	
cll1	$6.646 \cdot 10^{-12}$	$6.646 \cdot 10^{-12}$	0	$1.055 \cdot 10^{-13}$	$1.055 \cdot 10^{-13}$	0	
sm	0	0	0	$1.35 \cdot 10^{-8}$	$1.35 \cdot 10^{-8}$	0	

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

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-1.254 \cdot 10^{-5}$	$-1.254 \cdot 10^{-5}$	0	$1.785 \cdot 10^{-9}$	$1.785 \cdot 10^{-9}$	0	
cHWB	$-2.768 \cdot 10^{-5}$	$-2.768 \cdot 10^{-5}$	0	$8.704 \cdot 10^{-9}$	$8.704 \cdot 10^{-9}$	0	
cH13	$-2.105 \cdot 10^{-6}$	$-2.105 \cdot 10^{-6}$	0	$4.024 \cdot 10^{-10}$	$4.024 \cdot 10^{-10}$	0	

cHq3	$-1.401 \cdot 10^{-11}$	$-1.401 \cdot 10^{-11}$	0	$5.661 \cdot 10^{-13}$	$5.661 \cdot 10^{-13}$	0
cll1	$1.052 \cdot 10^{-6}$	$1.052 \cdot 10^{-6}$	0	$1.01 \cdot 10^{-10}$	$1.01 \cdot 10^{-10}$	0
sm	0	0	0	0.02242	0.02242	0

## 1.15 $HW^- \rightarrow \gamma e^- \bar{\nu}_e$

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$	
cHDD	$-5.668 \cdot 10^{-10}$	$-5.668 \cdot 10^{-10}$	0	$1.709 \cdot 10^{-12}$	$1.709 \cdot 10^{-12}$	0	
cHWB	$-1.252 \cdot 10^{-9}$	$-1.252 \cdot 10^{-9}$	0	$8.333 \cdot 10^{-12}$	$8.333 \cdot 10^{-12}$	0	
cH13	$-2.263 \cdot 10^{-8}$	$-2.263 \cdot 10^{-8}$	0	$3.146 \cdot 10^{-10}$	$3.146 \cdot 10^{-10}$	0	
cHq3	$-7.896 \cdot 10^{-10}$	$-7.896 \cdot 10^{-10}$	0	$9.678 \cdot 10^{-13}$	$9.678 \cdot 10^{-13}$	0	
cll1	$1.112 \cdot 10^{-8}$	$1.112 \cdot 10^{-8}$	0	$7.642 \cdot 10^{-11}$	$7.642 \cdot 10^{-11}$	0	
sm	0	0	0	$7.491 \cdot 10^{-8}$	$7.491 \cdot 10^{-8}$	0	

## 1.16 $HW^- \rightarrow \mu^- \bar{\nu}_{\mu}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-4.232 \cdot 10^{-6}$	$-4.232 \cdot 10^{-6}$	0	$4.443 \cdot 10^{-9}$	$4.443 \cdot 10^{-9}$	0	
cHWB	$-9.345 \cdot 10^{-6}$	$-9.345 \cdot 10^{-6}$	0	$2.166 \cdot 10^{-8}$	$2.166 \cdot 10^{-8}$	0	
cH13	$-1.566 \cdot 10^{-6}$	$-1.566 \cdot 10^{-6}$	0	$5.989 \cdot 10^{-9}$	$5.989 \cdot 10^{-9}$	0	
сНq3	$-1.042 \cdot 10^{-11}$	$-1.042 \cdot 10^{-11}$	0	$4.22 \cdot 10^{-13}$	$4.22 \cdot 10^{-13}$	0	
cll1	$7.832 \cdot 10^{-7}$	$7.832 \cdot 10^{-7}$	0	$1.497 \cdot 10^{-9}$	$1.497 \cdot 10^{-9}$	0	
sm	0	0	0	0.007567	0.007567	0	

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

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сG	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
сН	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
сНВ	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
cHDD	$1.212 \cdot 10^{-11}$	$1.212 \cdot 10^{-11}$	0	$2.48 \cdot 10^{-13}$	$2.48 \cdot 10^{-13}$	0	
сHG	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
cHW	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
cHWB	$1.48 \cdot 10^{-11}$	$1.48 \cdot 10^{-11}$	0	$3.699 \cdot 10^{-13}$	$3.699 \cdot 10^{-13}$	0	
cHd	$3.416 \cdot 10^{-12}$	$3.416 \cdot 10^{-12}$	0	$1.971 \cdot 10^{-14}$	$1.971 \cdot 10^{-14}$	0	
сНе	$3.028 \cdot 10^{-12}$	$3.028 \cdot 10^{-12}$	0	$1.771 \cdot 10^{-14}$	$1.771 \cdot 10^{-14}$	0	
cHl1	$3.463 \cdot 10^{-12}$	$3.463 \cdot 10^{-12}$	0	$2.025 \cdot 10^{-14}$	$2.025 \cdot 10^{-14}$	0	
cH13	$3.244 \cdot 10^{-11}$	$3.244 \cdot 10^{-11}$	0	$2.034 \cdot 10^{-12}$	$2.034 \cdot 10^{-12}$	0	
cHq1	$-8.521 \cdot 10^{-12}$	$-8.521 \cdot 10^{-12}$	0	$1.226 \cdot 10^{-13}$	$1.226 \cdot 10^{-13}$	0	
сНqЗ	$-2.53 \cdot 10^{-11}$	$-2.53 \cdot 10^{-11}$	0	$1.237 \cdot 10^{-12}$	$1.237 \cdot 10^{-12}$	0	
cHu	$-4.617 \cdot 10^{-12}$	$-4.617 \cdot 10^{-12}$	0	$3.6 \cdot 10^{-14}$	$3.6 \cdot 10^{-14}$	0	
cHudRe	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
cW	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
cdBRe	$1.003 \cdot 10^{-14}$	$1.003 \cdot 10^{-14}$	0		$1.943 \cdot 10^{-19}$	0	
cdGRe	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
cdHRe	$6.583 \cdot 10^{-26}$		1	$7.32 \cdot 10^{-49}$		1	
cdWRe	$1.817 \cdot 10^{-14}$	$1.817 \cdot 10^{-14}$	0	$6.376 \cdot 10^{-1}$		9 0	
cdd	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-41}$		1	
cdd1	$6.583 \cdot 10^{-26}$		1	$7.32 \cdot 10^{-41}$		1	
ceBRe	$6.583 \cdot 10^{-26}$		1	$7.32 \cdot 10^{-41}$		1	
ceHRe	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-43}$		1	
ceWRe	$5.756 \cdot 10^{-26}$		1	$6.401 \cdot 10^{-4}$		1	
ced	$5.756 \cdot 10^{-26}$		1	$6.401 \cdot 10^{-4}$		1	
cee	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-4}$	0   0	1	

ceu	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cld	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cle	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cledqRe	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
clequ1Re	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
clequ3Re	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cll	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cll1	$-2.119 \cdot 10^{-11}$	$-2.119 \cdot 10^{-11}$	0		$6 \cdot 10^{-13}$ 0
clq1	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
clq3	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
clu	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cqd1	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cqd8	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cqe	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cqq1	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cqq11	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cqq3	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cqq31	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cqu1	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cqu8	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cquqd11Re	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cquqd1Re	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cquqd81Re	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cquqd8Re	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1
cuBRe	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cuGRe	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cuHRe	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cuWRe	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0 1
cud1	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0 1

cud8	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1
cuu	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
cuu1	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
sm	0	0	0	0.002818	0.002818	0

## 1.18 $Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$

		interfere	nce		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1	
сG	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
сН	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
cHB	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
cHDD	$2.089 \cdot 10^{-11}$	$2.089 \cdot 10^{-11}$	0	$4.269 \cdot 10^{-13}$	$4.269 \cdot 10^{-13}$	0	
cHG	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
cHW	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
cHWB	$2.551 \cdot 10^{-11}$	$2.551 \cdot 10^{-11}$	0	$6.368 \cdot 10^{-13}$	$6.368 \cdot 10^{-13}$	0	
cHd	$5.889 \cdot 10^{-12}$	$5.889 \cdot 10^{-12}$	0	$3.393 \cdot 10^{-14}$	$3.393 \cdot 10^{-14}$	0	
сНе	$7.668 \cdot 10^{-12}$	$7.668 \cdot 10^{-12}$	0	$4.478 \cdot 10^{-14}$	$4.478 \cdot 10^{-14}$	0	
cHl1	$5.97 \cdot 10^{-12}$	$5.97 \cdot 10^{-12}$	0	$3.486 \cdot 10^{-14}$	$3.486 \cdot 10^{-14}$	0	
cH13	$8.217 \cdot 10^{-11}$	$8.217 \cdot 10^{-11}$	0	$5.142 \cdot 10^{-12}$	$5.142 \cdot 10^{-12}$	0	
cHq1	$-1.469 \cdot 10^{-11}$	$-1.469 \cdot 10^{-11}$	0	$2.111 \cdot 10^{-13}$	$2.111 \cdot 10^{-13}$	0	
cHq3	$-6.408 \cdot 10^{-11}$	$-6.408 \cdot 10^{-11}$	0	$3.127 \cdot 10^{-12}$	$3.127 \cdot 10^{-12}$	0	
cHu	$-7.959 \cdot 10^{-12}$	$-7.959 \cdot 10^{-12}$	0	$6.198 \cdot 10^{-14}$	$6.198 \cdot 10^{-14}$	0	
cHudRe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
cW	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
cdBRe	$2.54 \cdot 10^{-14}$	$2.54 \cdot 10^{-14}$	0	$4.913 \cdot 10^{-19}$	$4.913 \cdot 10^{-19}$	0	
cdGRe	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
cdHRe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-4}$	0	1	
cdWRe	$4.601 \cdot 10^{-14}$	$4.601 \cdot 10^{-14}$	0	$1.612 \cdot 10^{-1}$	$1.612 \cdot 10^{-18}$	0	

cdd	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cdd1	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
ceBRe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
ceHRe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
ceWRe	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
ced	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cee	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
ceu	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cld	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cle	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cledqRe	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
clequ1Re	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
clequ3Re	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cll	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cll1	$-5.367 \cdot 10^{-11}$	$-5.367 \cdot 10^{-11}$	0	$2.193 \cdot 10^{-12}$	$2.193 \cdot 10^{-12}$	0
clq1	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
clq3	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
clu	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cqd1	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cqd8	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cqe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cqq1	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cqq11	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cqq3	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cqq31	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cqu1	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cqu8	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cquqd11Re	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cquqd1Re	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1

cquqd81Re	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cquqd8Re	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cuBRe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cuGRe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cuHRe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cuWRe	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cud1	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cud8	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
cuu	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
cuu1	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
sm	0	0	0	0.004855	0.004855	0

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

		interfere	ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
сG	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1		
сН	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1		
сНВ	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1		
cHDD	$5.742 \cdot 10^{-11}$	$5.742 \cdot 10^{-11}$	0	$1.174 \cdot 10^{-12}$	$1.174 \cdot 10^{-12}$	0		
cHG	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1		
cHW	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1		
cHWB	$7.012 \cdot 10^{-11}$	$7.012 \cdot 10^{-11}$	0	$1.751 \cdot 10^{-12}$	$1.751 \cdot 10^{-12}$	0		
cHd	$1.619 \cdot 10^{-11}$	$1.619 \cdot 10^{-11}$	0	$9.332 \cdot 10^{-14}$	$9.332 \cdot 10^{-14}$	0		
сНе	$1.788 \cdot 10^{-11}$	$1.788 \cdot 10^{-11}$	0	$1.045 \cdot 10^{-13}$	$1.045 \cdot 10^{-13}$	0		
cHl1	$1.641 \cdot 10^{-11}$	$1.641 \cdot 10^{-11}$	0	$9.588 \cdot 10^{-14}$	$9.588 \cdot 10^{-14}$	0		
cH13	$1.916 \cdot 10^{-10}$	$1.916 \cdot 10^{-10}$	0	$1.2 \cdot 10^{-11}$	$1.2 \cdot 10^{-11}$	0		
cHq1	$-4.037 \cdot 10^{-11}$	$-4.037 \cdot 10^{-11}$	0	$5.805 \cdot 10^{-13}$	$5.805 \cdot 10^{-13}$	0		
сHq3	$-1.494 \cdot 10^{-10}$	$-1.494 \cdot 10^{-10}$	0	$7.296 \cdot 10^{-12}$	$7.296 \cdot 10^{-12}$	0		

сНи	$-2.188 \cdot 10^{-11}$ -	$-2.188 \cdot 10^{-11}$	0	$1.705 \cdot 10^{-13}$ $1.705 \cdot 10^{-13}$	0
cHudRe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
cW	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
cdBRe	$5.922 \cdot 10^{-14}$	$5.922 \cdot 10^{-14}$	0	$1.146 \cdot 10^{-18}  1.146 \cdot 10^{-18}$	0
cdGRe	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
cdHRe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
cdWRe	$1.073 \cdot 10^{-13}$	$1.073 \cdot 10^{-13}$	0	$3.761 \cdot 10^{-18}  3.761 \cdot 10^{-18}$	0
cdd	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
cdd1	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
ceBRe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
ceHRe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
ceWRe	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
ced	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
cee	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
ceu	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
cld	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
cle	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
cledqRe	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
clequ1Re	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
clequ3Re	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
cll	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
cll1	$-1.251 \cdot 10^{-10}$	$-1.251 \cdot 10^{-10}$	0	$5.117 \cdot 10^{-12}  5.117 \cdot 10^{-12}$	0
clq1	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
clq3	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
clu	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
cqd1	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
cqd8	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1
cqe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
cqq1	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$ 0	1

cqq11	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
cqq3	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
cqq31	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
cqu1	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cqu8	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cquqd11Re	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cquqd1Re	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cquqd81Re	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
cquqd8Re	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
cuBRe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cuGRe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cuHRe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cuWRe	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cud1	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
cud8	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
cuu	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
cuu1	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
sm	0	0	0	0.01335	0.01335	0

#### 1.20 $Hz \rightarrow t\bar{t}$

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сG	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
сН	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
сНВ	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1	
cHDD	$-4.736 \cdot 10^{-8}$	$-4.736 \cdot 10^{-8}$	0	$3.34 \cdot 10^{-10}$	$3.34 \cdot 10^{-10}$	0	
cHG	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
cHW	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	

cHWB	$6.869 \cdot 10^{-8}$	$6.869 \cdot 10^{-8}$	0	$9.356 \cdot 10^{-10}$	$9.356 \cdot 10^{-10}$	0
cHd	$-4.95 \cdot 10^{-8}$ -	$-4.95 \cdot 10^{-8}$	0	$8.996 \cdot 10^{-11}$	$8.996 \cdot 10^{-11}$	0
сНе	$-4.195 \cdot 10^{-8}$ -	$4.195 \cdot 10^{-8}$	0	$9.244 \cdot 10^{-11}$	$9.244 \cdot 10^{-11}$	0
cHl1	$-5.017 \cdot 10^{-8}$ -	$5.017 \cdot 10^{-8}$	0	$9.243 \cdot 10^{-11}$	$9.243 \cdot 10^{-11}$	0
cH13	$-1.258 \cdot 10^{-6}$ -	$1.258 \cdot 10^{-6}$	0	$7.327 \cdot 10^{-8}$	$7.327 \cdot 10^{-8}$	0
cHq1	$1.234 \cdot 10^{-7}$ 1	$.234 \cdot 10^{-7}$	0	$5.596 \cdot 10^{-10}$	$5.596 \cdot 10^{-10}$	0
cHq3	$1.256 \cdot 10^{-6}$ 1	$.256 \cdot 10^{-6}$	0	$7.226 \cdot 10^{-8}$	$7.226 \cdot 10^{-8}$	0
сНu	$6.689 \cdot 10^{-8}$	$6.689 \cdot 10^{-8}$	0	$1.643 \cdot 10^{-10}$	$1.643 \cdot 10^{-10}$	0
cHudRe	$4.803 \cdot 10^{-10}$ 4	$.803 \cdot 10^{-10}$	0	$9.011 \cdot 10^{-15}$	$9.011 \cdot 10^{-15}$	0
cW	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cdBRe	$-1.389 \cdot 10^{-10}$ $-1.389 \cdot 10^{-10}$	$1.389 \cdot 10^{-10}$	0	$1.014 \cdot 10^{-15}$	$1.014 \cdot 10^{-15}$	0
cdGRe	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cdHRe	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cdWRe	$8.634 \cdot 10^{-10}$	$8.634 \cdot 10^{-10}$	0	$3.275 \cdot 10^{-14}$	$3.275 \cdot 10^{-14}$	0
cdd	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cdd1	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
ceBRe	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
ceHRe	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
ceWRe	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
ced	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cee	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
ceu	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cld	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cle	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cledqRe	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
clequ1Re	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
clequ3Re	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$		1
cll	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cll1	$6.976 \cdot 10^{-7}$	$6.976 \cdot 10^{-7}$	0	$2.276 \cdot 10^{-8}$	$2.276 \cdot 10^{-8}$	0

clq1	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
clq3	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
clu	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cqd1	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cqd8	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cqe	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cqq1	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cqq11	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cqq3	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cqq31	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cqu1	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cqu8	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cquqd11Re	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cquqd1Re	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cquqd81Re	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cquqd8Re	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cuBRe	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cuGRe	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cuHRe	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cuWRe	$-1.989 \cdot 10^{-6}$	$-1.989 \cdot 10^{-6}$	0	$1.545 \cdot 10^{-7}$	$1.545 \cdot 10^{-7}$	0
cud1	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cud8	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
cuu	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
cuu1	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
sm	0	0	0	2.872	2.872	0

#### 1.21 $W^+W^- \rightarrow Hb\bar{b}$

interference square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сG	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
сН	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
сНВ	$1.568 \cdot 10^{-15}$	$1.568 \cdot 10^{-15}$	0	$2.068 \cdot 10^{-21}$	$2.068 \cdot 10^{-21}$	0
cHDD	$8.503 \cdot 10^{-6}$	$8.503 \cdot 10^{-6}$	0	$2.38 \cdot 10^{-7}$	$2.38 \cdot 10^{-7}$	0
cHG	$-8.858 \cdot 10^{-16}$	$-8.858 \cdot 10^{-16}$	0	$4.607 \cdot 10^{-19}$	$4.607 \cdot 10^{-19}$	0
cHW	$2.211 \cdot 10^{-17}$	$2.211 \cdot 10^{-17}$	0	$2.87 \cdot 10^{-22}$	$2.87 \cdot 10^{-22}$	0
cHWB	$1.878 \cdot 10^{-5}$	$1.878 \cdot 10^{-5}$	0	$1.161 \cdot 10^{-6}$	$1.161 \cdot 10^{-6}$	0
cHd	$6.812 \cdot 10^{-11}$	$6.812 \cdot 10^{-11}$	0	$3.091 \cdot 10^{-14}$	$3.091 \cdot 10^{-14}$	0
сНе	$-4.485 \cdot 10^{-11}$	$-4.485 \cdot 10^{-11}$	0	$8.039 \cdot 10^{-14}$	$8.039 \cdot 10^{-14}$	0
cHl1	$6.905 \cdot 10^{-11}$	$6.905 \cdot 10^{-11}$	0	$3.176 \cdot 10^{-14}$	$3.176 \cdot 10^{-14}$	0
cH13	$1.475 \cdot 10^{-6}$	$1.475 \cdot 10^{-6}$	0	$1.473 \cdot 10^{-7}$	$1.473 \cdot 10^{-7}$	0
cHq1	$-1.699 \cdot 10^{-10}$	$-1.699 \cdot 10^{-10}$	0	$1.923 \cdot 10^{-13}$	$1.923 \cdot 10^{-13}$	0
сНq3	$-6.244 \cdot 10^{-10}$	$-6.244 \cdot 10^{-10}$	0	$7.156 \cdot 10^{-11}$	$7.156 \cdot 10^{-11}$	0
cHu	$-9.207 \cdot 10^{-11}$	$-9.207 \cdot 10^{-11}$	0	$5.646 \cdot 10^{-14}$	$5.646 \cdot 10^{-14}$	0
cHudRe	$-5.014 \cdot 10^{-12}$	$-5.014 \cdot 10^{-12}$	0	$7.343 \cdot 10^{-18}$	$7.343 \cdot 10^{-18}$	0
cW	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cdBRe	$-1.486 \cdot 10^{-13}$	$-1.486 \cdot 10^{-13}$	0	$8.82 \cdot 10^{-19}$	$8.82 \cdot 10^{-19}$	0
cdGRe	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cdHRe	$1.341 \cdot 10^{-15}$	$1.341 \cdot 10^{-15}$	0	$1.513 \cdot 10^{-2}$	$1.513 \cdot 10^{-21}$	0
cdWRe	$-1.611 \cdot 10^{-13}$	$^2$ $-1.611 \cdot 10^{-13}$	0 - 0	$4.053 \cdot 10^{-1}$	$4.053 \cdot 10^{-17}$	7 0
cdd	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-4}$	0	1
cdd1	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-4}$	0	1
ceBRe	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-4}$	0	1
ceHRe	$1.444 \cdot 10^{-16}$	$1.444 \cdot 10^{-16}$	$6.924 \cdot 10^{-8}$	$1.755 \cdot 10^{-2}$	$1.755 \cdot 10^{-23}$	0
ceWRe	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-4}$	0	1
ced	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-4}$	0	1
cee	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-4}$	0	1
ceu	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-4}$	0	1

cld	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cle	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cledqRe	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
clequ1Re	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
clequ3Re	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cll	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cll1	$-7.376 \cdot 10^{-7}$	$-7.376 \cdot 10^{-7}$	0	$3.681 \cdot 10^{-8}$	$3.681 \cdot 10^{-8}$	0
clq1	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
clq3	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
clu	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cqd1	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cqd8	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cqe	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cqq1	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cqq11	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cqq3	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cqq31	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cqu1	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cqu8	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cquqd11Re	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cquqd1Re	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cquqd81Re	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cquqd8Re	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cuBRe	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cuGRe	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cuHRe	$6.657 \cdot 10^{-17}$	$6.657 \cdot 10^{-17}$	$2.403 \cdot 10^{-7}$	$3.729 \cdot 10^{-24}$	$3.729 \cdot 10^{-24}$	0
cuWRe	$2.076 \cdot 10^{-8}$	$2.076 \cdot 10^{-8}$	0	$1.259 \cdot 10^{-10}$		0
cud1	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
cud8	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1

cuu	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
cuu1	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
sm	0	0	0	$9.096 \cdot 10^{-5}$	$9.096 \cdot 10^{-5}$	0

#### 1.22 $W^+W^- \rightarrow Hc\bar{c}$

		interfere	nce	square	square			
	mod1	mod2	$1-{\tt mod2/mod1}$		mod2/mod1			
сG	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$ 0	1			
сН	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$ 0	1			
сНВ	$-2.716 \cdot 10^{-18}$	$-2.716 \cdot 10^{-18}$	$7.364 \cdot 10^{-8}$	$2.901 \cdot 10^{-23}$ $2.901 \cdot 10^{-23}$	0			
cHDD	$4.192 \cdot 10^{-8}$	$4.192 \cdot 10^{-8}$	0	$1.075 \cdot 10^{-9}$ $1.075 \cdot 10^{-9}$	0			
cHG	$5.061 \cdot 10^{-16}$	$5.061 \cdot 10^{-16}$	0	$1.012 \cdot 10^{-19}  1.012 \cdot 10^{-19}$	0			
cHW	$-1.263 \cdot 10^{-17}$	$-1.263 \cdot 10^{-17}$	0	$6.305 \cdot 10^{-23}  6.305 \cdot 10^{-23}$	0			
cHWB	$9.259 \cdot 10^{-8}$	$9.259 \cdot 10^{-8}$	0	$5.241 \cdot 10^{-9}$ $5.241 \cdot 10^{-9}$	0			
cHd	$-7.603 \cdot 10^{-12}$	$-7.603 \cdot 10^{-12}$	0	$5.664 \cdot 10^{-14}  5.664 \cdot 10^{-14}$	0			
сНе	$-1.082 \cdot 10^{-11}$	$-1.082 \cdot 10^{-11}$	0	$1.397 \cdot 10^{-13}$ $1.397 \cdot 10^{-13}$	0			
cHl1	$-7.707 \cdot 10^{-12}$	$-7.707 \cdot 10^{-12}$	0	$5.819 \cdot 10^{-14}  5.819 \cdot 10^{-14}$	0			
cH13	$1.242 \cdot 10^{-7}$	$1.242 \cdot 10^{-7}$	0	$3.785 \cdot 10^{-9}$ $3.785 \cdot 10^{-9}$	0			
cHq1	$1.896 \cdot 10^{-11}$	$1.896 \cdot 10^{-11}$	0	$3.523 \cdot 10^{-13}  3.523 \cdot 10^{-13}$	0			
cHq3	$4.774 \cdot 10^{-11}$	$4.774 \cdot 10^{-11}$	0	$8.918 \cdot 10^{-12}  8.918 \cdot 10^{-12}$	0			
cHu	$1.028 \cdot 10^{-11}$	$1.028 \cdot 10^{-11}$	0	$1.035 \cdot 10^{-13}  1.035 \cdot 10^{-13}$	0			
cHudRe	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$ 0	1			
cW	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$ 0	1			
cdBRe	$-3.585 \cdot 10^{-14}$	$-3.585 \cdot 10^{-14}$	0	$1.533 \cdot 10^{-18}  1.533 \cdot 10^{-18}$	0			
cdGRe	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$ 0	1			
cdHRe	$-2.323 \cdot 10^{-1}$	$-2.323 \cdot 10^{-1}$	$8.608 \cdot 10^{-8}$	$2.123 \cdot 10^{-23}  2.123 \cdot 10^{-23}$	0			
cdWRe	$-6.493 \cdot 10^{-1}$	$-6.493 \cdot 10^{-1}$	4 0	$5.03 \cdot 10^{-18}$ $5.03 \cdot 10^{-18}$	0			
cdd	$-1.465 \cdot 10^{-2}$	25 0	1	$2.103 \cdot 10^{-41}$ 0	1			

cdd1	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
ceBRe	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
ceHRe	$-2.502 \cdot 10^{-19}$	$-2.502 \cdot 10^{-19}$	$5.995 \cdot 10^{-7}$	$2.462 \cdot 10^{-25}$	$2.462 \cdot 10^{-25}$	0
ceWRe	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
ced	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cee	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
ceu	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cld	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cle	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cledqRe	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
clequ1Re	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
clequ3Re	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cll	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cll1	$-6.208 \cdot 10^{-8}$	$-6.208 \cdot 10^{-8}$	0		$9.481 \cdot 10^{-10}$	0
clq1	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
clq3	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
clu	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cqd1	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cqd8	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cqe	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cqq1	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cqq11	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cqq3	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cqq31	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cqu1	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cqu8	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cquqd11Re	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cquqd1Re	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cquqd81Re	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1

cquqd8Re	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cuBRe	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cuGRe	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cuHRe	$-1.153 \cdot 10^{-19}$	$-1.153 \cdot 10^{-19}$	$1.214 \cdot 10^{-6}$	$5.232 \cdot 10^{-26}$	$5.232 \cdot 10^{-26}$	0
cuWRe	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cud1	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cud8	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
cuu	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
cuu1	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
sm	0	0	0	$5.211 \cdot 10^{-7}$	$5.211 \cdot 10^{-7}$	0

#### 1.23 $W^+W^- \rightarrow Hd\bar{d}$

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
сG	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1		
сН	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1		
сНВ	$-1.91 \cdot 10^{-21}$	$-1.91 \cdot 10^{-21}$	0.0004669	$4.741 \cdot 10^{-26}$	$4.741 \cdot 10^{-26}$	0		
cHDD	$5.366 \cdot 10^{-7}$	$5.366 \cdot 10^{-7}$	0	$1.071 \cdot 10^{-8}$	$1.071 \cdot 10^{-8}$	0		
cHG	$1.963 \cdot 10^{-21}$	$1.963 \cdot 10^{-21}$	$2.604 \cdot 10^{-5}$	$1.581 \cdot 10^{-24}$	$1.581 \cdot 10^{-24}$	0		
cHW	$-4.894 \cdot 10^{-23}$	$-4.899 \cdot 10^{-23}$	-0.001046	$9.851 \cdot 10^{-28}$	$9.851 \cdot 10^{-28}$	0		
cHWB	$1.185 \cdot 10^{-6}$	$1.185 \cdot 10^{-6}$	0	$5.223 \cdot 10^{-8}$	$5.223 \cdot 10^{-8}$	0		
cHd	$-4.629 \cdot 10^{-11}$	$-4.629 \cdot 10^{-11}$	0	$8.743 \cdot 10^{-13}$	$8.743 \cdot 10^{-13}$	0		
сНе	$2.692 \cdot 10^{-12}$	$2.692 \cdot 10^{-12}$	0	$1.167 \cdot 10^{-14}$	$1.167 \cdot 10^{-14}$	0		
cHl1	$-4.692 \cdot 10^{-11}$	$-4.692 \cdot 10^{-11}$	0	$8.983 \cdot 10^{-13}$	$8.983 \cdot 10^{-13}$	0		
cH13	$1.328 \cdot 10^{-8}$	$1.328 \cdot 10^{-8}$	0	$2.855 \cdot 10^{-10}$	$2.855 \cdot 10^{-10}$	0		
cHq1	$1.155 \cdot 10^{-10}$	$1.155 \cdot 10^{-10}$	0	$5.439 \cdot 10^{-12}$	$5.439 \cdot 10^{-12}$	0		
сНq3	$-3.353 \cdot 10^{-11}$	$-3.353 \cdot 10^{-11}$	0	$6.814 \cdot 10^{-13}$	$6.814 \cdot 10^{-13}$	0		
cHu	$6.256 \cdot 10^{-11}$	$6.256 \cdot 10^{-11}$	0	$1.597 \cdot 10^{-12}$	$1.597 \cdot 10^{-12}$	0		

cHudRe	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cW	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cdBRe	$8.917 \cdot 10^{-15}$	$8.917 \cdot 10^{-15}$	0	$1.28 \cdot 10^{-19}$	$1.28 \cdot 10^{-19}$	0
cdGRe	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cdHRe	$-1.634 \cdot 10^{-21}$	$-1.633 \cdot 10^{-21}$	0.0005458	$3.469 \cdot 10^{-26}$	$3.469 \cdot 10^{-26}$	0
cdWRe	$1.615 \cdot 10^{-14}$	$1.615 \cdot 10^{-14}$	0	$4.2 \cdot 10^{-19}$	$4.2 \cdot 10^{-19}$	0
cdd	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cdd1	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
ceBRe	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
ceHRe	$-1.768 \cdot 10^{-22}$	$-1.759 \cdot 10^{-22}$	0.005045	$4.023 \cdot 10^{-28}$	$4.023 \cdot 10^{-28}$	0
ceWRe	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
ced	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cee	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$		1
ceu	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$		1
cld	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$		1
cle	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$		1
cledqRe	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$		1
clequ1Re	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
clequ3Re	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$		1
cll	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cll1	$-6.648 \cdot 10^{-9}$	$-6.648 \cdot 10^{-9}$	0	$7.159 \cdot 10^{-11}$		0
clq1	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
clq3	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$		1
clu	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$		1
cqd1	$5.118 \cdot 10^{-26}$		1	$4.216 \cdot 10^{-4}$		1
cqd8	$5.118 \cdot 10^{-26}$		1	$4.216 \cdot 10^{-4}$		1
cqe	$-8.92 \cdot 10^{-25}$		1	$3.247 \cdot 10^{-4}$		1
cqq1	$5.118 \cdot 10^{-26}$		1	$4.216 \cdot 10^{-4}$		1
cqq11	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-4}$	0	1

cqq3	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cqq31	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cqu1	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cqu8	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cquqd11Re	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cquqd1Re	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cquqd81Re	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cquqd8Re	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cuBRe	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cuGRe	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cuHRe	$-8.199 \cdot 10^{-23}$	$-8.11 \cdot 10^{-23}$	0.01088	$8.55 \cdot 10^{-29}$	$8.55 \cdot 10^{-29}$	0
cuWRe	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cud1	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cud8	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
cuu	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
cuu1	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
sm	0	0	0	$9.587 \cdot 10^{-6}$	$9.587 \cdot 10^{-6}$	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сG	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
сН	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
сНВ	$-1.2 \cdot 10^{-8}$	$-1.2 \cdot 10^{-8}$	0	$2.125 \cdot 10^{-13}$	$2.125 \cdot 10^{-13}$	0	
cHDD	$-9.796 \cdot 10^{-5}$	$-9.796 \cdot 10^{-5}$	0	$2.596 \cdot 10^{-6}$	$2.596 \cdot 10^{-6}$	0	
сHG	$7.863 \cdot 10^{-6}$	$7.863 \cdot 10^{-6}$	0	$2.906 \cdot 10^{-10}$	$2.906 \cdot 10^{-10}$	0	
cHW	$-1.963 \cdot 10^{-7}$	$-1.963 \cdot 10^{-7}$	0	$1.811 \cdot 10^{-13}$	$1.811 \cdot 10^{-13}$	0	
cHWB	-0.0001196	-0.0001196	0	$3.871 \cdot 10^{-6}$	$3.871 \cdot 10^{-6}$	0	

cHd	$-2.762 \cdot 10^{-5}$ -1	$2.762 \cdot 10^{-5}$	0	$2.063 \cdot 10^{-7}$	$2.063 \cdot 10^{-7}$	0
сНе	-0.001581	-0.001581	0	$9.088 \cdot 10^{-6}$	$9.088 \cdot 10^{-6}$	0
cHl1	$-2.8 \cdot 10^{-5}$	$-2.8 \cdot 10^{-5}$	0	$2.12 \cdot 10^{-7}$	$2.12 \cdot 10^{-7}$	0
cH13	-0.01695	-0.01695	0	0.001044	0.001044	0
cHq1	$6.888 \cdot 10^{-5}$ 6	$6.888 \cdot 10^{-5}$	0	$1.283 \cdot 10^{-6}$	$1.283 \cdot 10^{-6}$	0
cHq3	0.01322	0.01322	0	0.0006346	0.0006346	0
cHu	$3.733 \cdot 10^{-5}$ 3	$3.733 \cdot 10^{-5}$	0	$3.768 \cdot 10^{-7}$	$3.768 \cdot 10^{-7}$	0
cHudRe	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cW	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cdBRe	$-5.238 \cdot 10^{-6}$ -	$5.238 \cdot 10^{-6}$	0	$9.97 \cdot 10^{-11}$	$9.97 \cdot 10^{-11}$	0
cdGRe	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cdHRe	$-1.027 \cdot 10^{-8}$	$-1.027 \cdot 10^{-8}$	0	$1.555 \cdot 10^{-13}$	$1.555 \cdot 10^{-13}$	0
cdWRe	$-9.489 \cdot 10^{-6}$	$-9.489 \cdot 10^{-6}$	0	$3.272 \cdot 10^{-10}$	$3.272 \cdot 10^{-10}$	0
cdd	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cdd1	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
ceBRe	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
ceHRe	$-1.106 \cdot 10^{-9}$	$-1.106 \cdot 10^{-9}$	0	$1.804 \cdot 10^{-15}$	$1.804 \cdot 10^{-15}$	0
ceWRe	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
ced	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cee	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
ceu	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cld	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cle	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cledqRe	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
clequ1Re	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
clequ3Re	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cll	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cll1	0.01107	0.01107	0	0.0004451	0.0004451	0
clq1	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1

clq3	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
clu	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cqd1	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cqd8	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cqe	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cqq1	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cqq11	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cqq3	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cqq31	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cqu1	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cqu8	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cquqd11Re	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cquqd1Re	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cquqd81Re	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cquqd8Re	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cuBRe	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cuGRe	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cuHRe	$-5.097 \cdot 10^{-10}$	$-5.097 \cdot 10^{-10}$	0	$3.833 \cdot 10^{-16}$	$3.833 \cdot 10^{-16}$	0
cuWRe	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cud1	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cud8	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
cuu	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
cuu1	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
sm	0	0	0	7.986	7.986	0

## 1.25 $W^+W^- \rightarrow \gamma\gamma$

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

cHDD	0.01445	0.01445	0	$3.465 \cdot 10^{-5}$ $3.465 \cdot 10^{-5}$	0
cHWB	0.03191	0.03191	0	$0.000169 \qquad 0.000169$	0
cH13	0.2049	0.2049	0	$0.001144 \qquad 0.001144$	0
сНqЗ	$-4.479 \cdot 10^{-5}$	$-4.479 \cdot 10^{-5}$	0	$1.791 \cdot 10^{-6}$ $1.791 \cdot 10^{-6}$	0
cll1	-0.1024	-0.1024	0	$0.0002873 \qquad 0.0002873$	0
sm	0	0	0	1.868 1.868	0

### 1.26 $W^+W^- \rightarrow \gamma\gamma\gamma$

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$1.774 \cdot 10^{-8}$	$1.774 \cdot 10^{-8}$	0	$1.131 \cdot 10^{-10}$	$1.131 \cdot 10^{-10}$	0	
cHWB	$3.918 \cdot 10^{-8}$	$3.918 \cdot 10^{-8}$	0	$5.515 \cdot 10^{-10}$	$5.515 \cdot 10^{-10}$	0	
cH13	$2.374 \cdot 10^{-8}$	$2.374 \cdot 10^{-8}$	0	$1.39 \cdot 10^{-10}$	$1.39 \cdot 10^{-10}$	0	
cHq3	$-1.501 \cdot 10^{-12}$	$-1.501 \cdot 10^{-12}$	0	$2.175 \cdot 10^{-13}$	$2.175 \cdot 10^{-13}$	0	
cll1	$-1.187 \cdot 10^{-8}$	$-1.187 \cdot 10^{-8}$	0	$3.489 \cdot 10^{-11}$	$3.489 \cdot 10^{-11}$	0	
sm	0	0	0	$1.187 \cdot 10^{-6}$	$1.187 \cdot 10^{-6}$	0	

#### 1.27 $\bar{b}t \rightarrow \bar{d}u$

		interfere	ence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cHDD	$-1.212 \cdot 10^{-5}$	$-1.212 \cdot 10^{-5}$	0	$1.7 \cdot 10^{-9}$	$1.7 \cdot 10^{-9}$	0	
cHWB	$-2.677 \cdot 10^{-5}$	$-2.677 \cdot 10^{-5}$	0	$8.29 \cdot 10^{-9}$	$8.29 \cdot 10^{-9}$	0	
cH13	$-1.523 \cdot 10^{-5}$	$-1.523 \cdot 10^{-5}$	0	$2.618 \cdot 10^{-9}$	$2.618 \cdot 10^{-9}$	0	
сНq3	$-1.013 \cdot 10^{-10}$	$-1.013 \cdot 10^{-10}$	0	$4.096 \cdot 10^{-12}$	$4.096 \cdot 10^{-12}$	0	
cll1	$7.615 \cdot 10^{-6}$	$7.615 \cdot 10^{-6}$	0	$6.572 \cdot 10^{-10}$	$6.572 \cdot 10^{-10}$	0	
sm	0	0	0	0.02168	0.02168	0	

## 1.28 $\nu_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$

		interfere	nce		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
сG	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
сН	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cHB	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cHDD	$3.975 \cdot 10^{-11}$	$3.975 \cdot 10^{-11}$	0	$8.123 \cdot 10^{-13}$	$8.123 \cdot 10^{-13}$	0
cHG	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cHW	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cHWB	$4.855 \cdot 10^{-11}$	$4.855 \cdot 10^{-11}$	0	$1.212 \cdot 10^{-12}$	$1.212 \cdot 10^{-12}$	0
cHd	$1.121 \cdot 10^{-11}$	$1.121 \cdot 10^{-11}$	0	$6.456 \cdot 10^{-14}$	$6.456 \cdot 10^{-14}$	0
сНе	$9.839 \cdot 10^{-12}$	$9.839 \cdot 10^{-12}$	0	$5.746 \cdot 10^{-14}$	$5.746 \cdot 10^{-14}$	0
cHl1	$1.136 \cdot 10^{-11}$	$1.136 \cdot 10^{-11}$	0	$6.634 \cdot 10^{-14}$	$6.634 \cdot 10^{-14}$	0
cH13	$1.054 \cdot 10^{-10}$	$1.054 \cdot 10^{-10}$	0	$6.598 \cdot 10^{-12}$	$6.598 \cdot 10^{-12}$	0
cHq1	$-2.795 \cdot 10^{-11}$	$-2.795 \cdot 10^{-11}$	0	$4.016 \cdot 10^{-13}$	$4.016 \cdot 10^{-13}$	0
cHq3	$-8.222 \cdot 10^{-11}$	$-8.222 \cdot 10^{-11}$	0	$4.013 \cdot 10^{-12}$	$4.013 \cdot 10^{-12}$	0
cHu	$-1.515 \cdot 10^{-11}$	$-1.515 \cdot 10^{-11}$	0	$1.179 \cdot 10^{-13}$	$1.179 \cdot 10^{-13}$	0
cHudRe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cW	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cdBRe	$3.259 \cdot 10^{-14}$	$3.259 \cdot 10^{-14}$	0	$6.304 \cdot 10^{-19}$	$6.304 \cdot 10^{-19}$	0
cdGRe	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cdHRe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-4}$	0	1
cdWRe	$5.904 \cdot 10^{-14}$	$5.904 \cdot 10^{-14}$	0	$2.069 \cdot 10^{-1}$	$2.069 \cdot 10^{-18}$	0
cdd	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-4}$		1
cdd1	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-4}$		1
ceBRe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-4}$		1
ceHRe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-4}$		1
ceWRe	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-4}$	0	1

ced	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cee	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
ceu	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cld	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cle	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cledqRe	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
clequ1Re	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
clequ3Re	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cll	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cll1	$-6.886 \cdot 10^{-11}$	$-6.886 \cdot 10^{-11}$	0		$14 \cdot 10^{-12}$	0
clq1	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
clq3	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
clu	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cqd1	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cqd8	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cqe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cqq1	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cqq11	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cqq3	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cqq31	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cqu1	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cqu8	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cquqd11Re	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cquqd1Re	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cquqd81Re	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cquqd8Re	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cuBRe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cuGRe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cuHRe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1

cuWRe	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cud1	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cud8	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
cuu	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
cuu1	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
sm	0	0	0	0.009237	0.009237	0

# $1.29 \quad b\bar{b} \to \mu^+\mu^-$

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сG	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	
сН	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	
cHB	$8.153 \cdot 10^{-25}$	$7.989 \cdot 10^{-25}$	0.02011	$3.312 \cdot 10^{-26}$	$3.312 \cdot 10^{-26}$	0	
cHDD	$3.018 \cdot 10^{-12}$	$3.018 \cdot 10^{-12}$	0	$5.258 \cdot 10^{-14}$	$5.258 \cdot 10^{-14}$	0	
cHG	$-2.886 \cdot 10^{-23}$	$-2.889 \cdot 10^{-23}$	-0.0008915	$4.626 \cdot 10^{-23}$	$4.626 \cdot 10^{-23}$	0	
cHW	$7.468 \cdot 10^{-25}$	$7.21 \cdot 10^{-25}$	0.03445	$2.882 \cdot 10^{-26}$	$2.882 \cdot 10^{-26}$	0	
cHWB	$3.685 \cdot 10^{-12}$	$3.685 \cdot 10^{-12}$	0	$7.842 \cdot 10^{-14}$	$7.842 \cdot 10^{-14}$	0	
cHd	$8.507 \cdot 10^{-13}$	$8.507 \cdot 10^{-13}$	0	$4.179 \cdot 10^{-15}$	$4.179 \cdot 10^{-15}$	0	
сНе	$1.353 \cdot 10^{-12}$	$1.353 \cdot 10^{-12}$	0	$4.8 \cdot 10^{-15}$	$4.8 \cdot 10^{-15}$	0	
cHl1	$8.623 \cdot 10^{-13}$	$8.623 \cdot 10^{-13}$	0	$4.294 \cdot 10^{-15}$	$4.294 \cdot 10^{-15}$	0	
cH13	$1.45 \cdot 10^{-11}$	$1.45 \cdot 10^{-11}$	0	$5.512 \cdot 10^{-13}$	$5.512 \cdot 10^{-13}$	0	
cHq1	$-2.122 \cdot 10^{-12}$	$-2.122 \cdot 10^{-12}$	0	$2.6 \cdot 10^{-14}$	$2.6 \cdot 10^{-14}$	0	
сНq3	$-1.131 \cdot 10^{-11}$	$-1.131 \cdot 10^{-11}$	0	$3.352 \cdot 10^{-13}$	$3.352 \cdot 10^{-13}$	0	
cHu	$-1.15 \cdot 10^{-12}$	$-1.15 \cdot 10^{-12}$	0	$7.633 \cdot 10^{-15}$	$7.633 \cdot 10^{-15}$	0	
cHudRe	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1	
cW	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	
cdBRe	$4.483 \cdot 10^{-15}$	$4.483 \cdot 10^{-15}$	0	$5.266 \cdot 10^{-20}$	$5.266 \cdot 10^{-20}$	0	
cdGRe	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	

	2-	~~		2.0	2.0	
cdHRe	$6.998 \cdot 10^{-25}$	$6.834 \cdot 10^{-25}$	0.02343	$2.423 \cdot 10^{-26}$	$2.423 \cdot 10^{-26}$	0
cdWRe	$8.12 \cdot 10^{-15}$	$8.12 \cdot 10^{-15}$	0	$1.728 \cdot 10^{-19}$	$1.728 \cdot 10^{-19}$	0
cdd	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cdd1	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
ceBRe	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
ceHRe	$8.999 \cdot 10^{-26}$	$7.36 \cdot 10^{-26}$	0.1822	$2.811 \cdot 10^{-28}$	$2.811 \cdot 10^{-28}$	0
ceWRe	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
ced	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cee	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
ceu	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cld	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cle	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cledqRe	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
clequ1Re	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
clequ3Re	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cll	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cll1	$-9.472 \cdot 10^{-12}$	$-9.472 \cdot 10^{-12}$	0	$2.351 \cdot 10^{-13}$	$2.351 \cdot 10^{-13}$	0
clq1	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
clq3	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
clu	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cqd1	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cqd8	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cqe	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cqq1	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cqq11	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cqq3	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cqq31	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cqu1	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cqu8	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1

cquqd11Re	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cquqd1Re	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cquqd81Re	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cquqd8Re	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cuBRe	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cuGRe	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cuHRe	$5.032 \cdot 10^{-26}$	$3.393 \cdot 10^{-26}$	0.3258	$5.973 \cdot 10^{-29}$	$5.973 \cdot 10^{-29}$	0
cuWRe	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cud1	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cud8	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
cuu	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
cuu1	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
sm	0	0	0	0.001059	0.001059	0

# 1.30 $b\bar{b} \rightarrow \nu_e \bar{\nu}_e$

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cG	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1		
сН	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1		
cHB	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1		
cHDD	$1.465 \cdot 10^{-12}$	$1.465 \cdot 10^{-12}$	0	$2.994 \cdot 10^{-14}$	$2.994 \cdot 10^{-14}$	0		
cHG	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1		
cHW	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1		
cHWB	$1.789 \cdot 10^{-12}$	$1.789 \cdot 10^{-12}$	0	$4.466 \cdot 10^{-14}$	$4.466 \cdot 10^{-14}$	0		
cHd	$4.13 \cdot 10^{-13}$	$4.13 \cdot 10^{-13}$	0	$2.38 \cdot 10^{-15}$	$2.38 \cdot 10^{-15}$	0		
сНе	$2.389 \cdot 10^{-12}$	$2.389 \cdot 10^{-12}$	0	$1.395 \cdot 10^{-14}$	$1.395 \cdot 10^{-14}$	0		
cHl1	$4.187 \cdot 10^{-13}$	$4.187 \cdot 10^{-13}$	0	$2.445 \cdot 10^{-15}$	$2.445 \cdot 10^{-15}$	0		
cH13	$2.56 \cdot 10^{-11}$	$2.56 \cdot 10^{-11}$	0	$1.602 \cdot 10^{-12}$	$1.602 \cdot 10^{-12}$	0		

alla1	$-1.03 \cdot 10^{-12}$	$-1.03 \cdot 10^{-12}$	0	$1.48 \cdot 10^{-14}$ $1.48 \cdot 10^{-14}$	0
сНq1 cHq3		$-1.03 \cdot 10$ $-1.997 \cdot 10^{-11}$	0	$9.744 \cdot 10^{-13}$ $9.744 \cdot 10^{-13}$	0
<del>-</del>		$-5.582 \cdot 10^{-13}$	0	$4.347 \cdot 10^{-15}$ $4.347 \cdot 10^{-15}$	0
cHu			0		1
cHudRe	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
сW	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
cdBRe		$7.914 \cdot 10^{-15}$	0	$1.531 \cdot 10^{-19}$ $1.531 \cdot 10^{-19}$	0
cdGRe	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
cdHRe	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
cdWRe	$1.434 \cdot 10^{-14}$	$1.434 \cdot 10^{-14}$	0	$5.023 \cdot 10^{-19}  5.023 \cdot 10^{-19}$	0
cdd	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
cdd1	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
ceBRe	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
ceHRe	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
ceWRe	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
ced	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
cee	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
ceu	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
cld	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
cle	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
cledqRe	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
clequ1Re	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
clequ3Re	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
cll	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
cll1	$-1.672 \cdot 10^{-11}$	$-1.672 \cdot 10^{-11}$	0	$6.834 \cdot 10^{-13}$ $6.834 \cdot 10^{-13}$	0
clq1	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
clq3	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
clu	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
cqd1	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
cqd8	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$ 0	1
-					

- 050 40 27			0.00 - 10.49		
	0	1		0	1
$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
0	0	0	0.0003405	0.0003405	0
	$4.542 \cdot 10^{-26}$ $4.542 \cdot 10^{-26}$ $7.959 \cdot 10^{-27}$ $7.959 \cdot 10^{-27}$ $7.959 \cdot 10^{-27}$ $7.959 \cdot 10^{-27}$ $4.542 \cdot 10^{-26}$ $4.542 \cdot 10^{-26}$ $7.959 \cdot 10^{-27}$ $4.542 \cdot 10^{-26}$ $4.542 \cdot 10^{-26}$ $4.542 \cdot 10^{-26}$ $7.959 \cdot 10^{-27}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

# 1.31 $b\bar{b} \rightarrow b\bar{b}$

	interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cG	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
сН	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
сНВ	$4.338 \cdot 10^{-17}$	$4.338 \cdot 10^{-17}$	0	$3.047 \cdot 10^{-22}$	$3.047 \cdot 10^{-22}$	0
cHDD	$-7.281 \cdot 10^{-11}$	$-7.281 \cdot 10^{-11}$	0	$3.055 \cdot 10^{-13}$	$3.055 \cdot 10^{-13}$	0

cHG	$-4.032 \cdot 10^{-15}$ $-4.032$	$10^{-15}$ 0	$8.612 \cdot 10^{-19}$	$8.612 \cdot 10^{-19}$	0
cHW	$1.006 \cdot 10^{-16}$ $1.006 \cdot$	$10^{-16}$ 0	$5.366 \cdot 10^{-22}$	$5.366 \cdot 10^{-22}$	0
cHWB	$-8.893 \cdot 10^{-11}$ $-8.893$	$10^{-11}$ 0	$4.557 \cdot 10^{-13}$	$4.557 \cdot 10^{-13}$	0
cHd	$-2.053 \cdot 10^{-11}$ $-2.053$	$10^{-11}$ 0	$2.428 \cdot 10^{-14}$	$2.428 \cdot 10^{-14}$	0
сНе	$-4.373 \cdot 10^{-10}$ $-4.373$	$10^{-10}$ 0	$4.784 \cdot 10^{-13}$	$4.784 \cdot 10^{-13}$	0
cHl1	$-2.081 \cdot 10^{-11}$ $-2.081$	$10^{-11}$ 0	$2.495 \cdot 10^{-14}$	$2.495 \cdot 10^{-14}$	0
cH13	$-4.686 \cdot 10^{-9}$ $-4.686$	$\cdot 10^{-9}$ 0	$5.494 \cdot 10^{-11}$	$5.494 \cdot 10^{-11}$	0
cHq1	$5.12 \cdot 10^{-11}$ $5.12 \cdot 1$	$0^{-11}$ 0	$1.51 \cdot 10^{-13}$	$1.51 \cdot 10^{-13}$	0
cHq3	$3.654 \cdot 10^{-9}$ $3.654 \cdot$	$10^{-9}$ 0	$3.341 \cdot 10^{-11}$	$3.341 \cdot 10^{-11}$	0
cHu	$2.774 \cdot 10^{-11}$ $2.774 \cdot$	$10^{-11}$ 0	$4.435 \cdot 10^{-14}$	$4.435 \cdot 10^{-14}$	0
cHudRe	$-3.956 \cdot 10^{-25}$	1	$9.016 \cdot 10^{-42}$	0	1
cW	$-8.313 \cdot 10^{-24}$ 0	1	$1.729 \cdot 10^{-40}$	0	1
cdBRe	$-1.448 \cdot 10^{-12}$ $-1.448$	$10^{-12}$ 0	$5.249 \cdot 10^{-18}$	$5.249 \cdot 10^{-18}$	0
cdGRe	$-8.313 \cdot 10^{-24}$ 0	1	$1.729 \cdot 10^{-40}$	0	1
cdHRe	$3.711 \cdot 10^{-17}$ $3.711$	$-2.695 \cdot 1$	$0^{-8}   2.229 \cdot 10^{-2}$	$2.229 \cdot 10^{-22}$	0
cdWRe	$-2.624 \cdot 10^{-12}$ $-2.62$	$4 \cdot 10^{-12}$ 0	$1.722 \cdot 10^{-1}$	$7  1.722 \cdot 10^{-17}$	0
cdd	$-3.956 \cdot 10^{-25}$	0 1	$9.016 \cdot 10^{-4}$	0	1
cdd1	$-3.956 \cdot 10^{-25}$	0 1	$9.016 \cdot 10^{-4}$	0	1
ceBRe	$-3.956 \cdot 10^{-25}$	0 1	$9.016 \cdot 10^{-4}$	0	1
ceHRe	$3.997 \cdot 10^{-18}$ $3.99$	$7 \cdot 10^{-18}$ $-1.001 \cdot 1$	$0^{-7}$ $2.586 \cdot 10^{-2}$	$4  2.586 \cdot 10^{-24}$	0
ceWRe	$-8.313 \cdot 10^{-24}$	0 1	$1.729 \cdot 10^{-4}$	0	1
ced	$-8.313 \cdot 10^{-24}$	0 1	$1.729 \cdot 10^{-4}$	0	1
cee	$-8.313 \cdot 10^{-24}$	0 1	$1.729 \cdot 10^{-4}$	0	1
ceu	$-3.956 \cdot 10^{-25}$	0 1	$9.016 \cdot 10^{-4}$	0	1
cld	$-8.313 \cdot 10^{-24}$	0 1	$1.729 \cdot 10^{-4}$	0	1
cle	$-8.313 \cdot 10^{-24}$	0 1	$1.729 \cdot 10^{-4}$	0	1
cledqRe	$-8.313 \cdot 10^{-24}$	0 1	$1.729 \cdot 10^{-4}$		1
clequ1Re	$-3.956 \cdot 10^{-25}$	0 1	$9.016 \cdot 10^{-4}$		1
clequ3Re	$-3.956 \cdot 10^{-25}$	0 1	$9.016 \cdot 10^{-4}$	0	1

#### 1.32 $b\bar{b} \rightarrow t\bar{t}$

		interfere	nce	square
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	$\verb mod1  & \verb mod2  & 1-\verb mod2/mod1 $
сG	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$ 0 1
сН	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$ 0 1
сНВ	$-8.811 \cdot 10^{-14}$	$-8.811 \cdot 10^{-14}$	$-1.135 \cdot 10^{-8}$	$2.339 \cdot 10^{-19}  2.339 \cdot 10^{-19}  0$
cHDD	25.95	25.95	0	0.4018 $0.4018$ $0$
cHG	$2.606 \cdot 10^{-13}$	$2.606 \cdot 10^{-13}$	0	$3.267 \cdot 10^{-16}  3.267 \cdot 10^{-16} \qquad 0$
cHW	$-6.504 \cdot 10^{-15}$	$-6.504 \cdot 10^{-15}$	0	$2.035 \cdot 10^{-19}  2.035 \cdot 10^{-19}  0$
cHWB	57.31	57.31	0	1.959 $1.959$ $0$
cHd	$4.716 \cdot 10^{-8}$	$4.716 \cdot 10^{-8}$	0	$4.222 \cdot 10^{-14}  4.222 \cdot 10^{-14} \qquad 0$
сНе	$5.99 \cdot 10^{-10}$	$5.99 \cdot 10^{-10}$	0	$3.63 \cdot 10^{-14}$ $3.63 \cdot 10^{-14}$ 0
cHl1	$4.781 \cdot 10^{-8}$	$4.781 \cdot 10^{-8}$	0	$4.338 \cdot 10^{-14}  4.338 \cdot 10^{-14} \qquad 0$
cH13	0.08886	0.08886	0	$0.001416 \qquad 0.001416 \qquad 0$
cHq1	$-1.176 \cdot 10^{-7}$	$-1.176 \cdot 10^{-7}$	0	$2.626 \cdot 10^{-13}  2.626 \cdot 10^{-13}  0$
сНqЗ	$-1.244 \cdot 10^{-6}$	$-1.244 \cdot 10^{-6}$	0	$1.022 \cdot 10^{-7}$ $1.022 \cdot 10^{-7}$ 0
cHu	$-6.374 \cdot 10^{-8}$	$-6.374 \cdot 10^{-8}$	0	$7.712 \cdot 10^{-14}  7.712 \cdot 10^{-14} \qquad 0$
cHudRe	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$ 0 1
cW	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$ 0 1
cdBRe	$1.984 \cdot 10^{-12}$	$1.984 \cdot 10^{-12}$	0	$3.983 \cdot 10^{-19}  3.983 \cdot 10^{-19} \qquad 0$
cdGRe	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$ 0 1
cdHRe		$4  -7.537 \cdot 10^{-14}$	$-1.327 \cdot 10^{-8}$	$1.712 \cdot 10^{-19}  1.712 \cdot 10^{-19} \qquad 0$
cdWRe	$3.594 \cdot 10^{-12}$	$3.594 \cdot 10^{-12}$	0	$1.307 \cdot 10^{-18}  1.307 \cdot 10^{-18} \qquad 0$
cdd	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$ 0 1
cdd1	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$ 0 1
ceBRe	$9.089 \cdot 10^{-22}$		1	$1.568 \cdot 10^{-41}$ 0 1
ceHRe	$-8.117 \cdot 10^{-1}$		$-1.109 \cdot 10^{-7}$	$1.985 \cdot 10^{-21}  1.985 \cdot 10^{-21} \qquad 0$
ceWRe	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$ 0 1
ced	$1.139 \cdot 10^{-23}$		1	$1.312 \cdot 10^{-41}$ 0 1
cee	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$ 0 1

$\begin{array}{cccccccccccccccccccccccccccccccccccc$							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	ceu	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cld	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cle	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cledqRe	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	clequ1Re	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cll	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cll1		-0.04443	0		0.0003541	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	clq1	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	clq3	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	clu		0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqd1		0	1		0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqd8	$1.139 \cdot 10^{-23}$	0	1		0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqe		0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqq1		0	1		0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqq11	$1.139 \cdot 10^{-23}$	0	1		0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqq3		0	1	$1.312 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqq31		0	1		0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqu1		0	1		0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cqu8	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cquqd11Re		0	1		0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cquqd1Re		0	1		0	1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	cquqd81Re		0	1	$1.312 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cquqd8Re	$1.139 \cdot 10^{-23}$	0	1		0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	cuBRe		0	1		0	1
cuWRe $9.089 \cdot 10^{-22}$ 0 1 $1.568 \cdot 10^{-41}$ 0	cuGRe		0	1		· ·	1
	cuHRe		$-3.742 \cdot 10^{-15}$	$-2.405 \cdot 10^{-7}$		$4.219 \cdot 10^{-22}$	0
cud1 $1.139 \cdot 10^{-23}$ 0 1 $1.312 \cdot 10^{-41}$ 0	cuWRe		0	1		0	1
	cud1	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1

cud8	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
cuu	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
cuu1	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
sm	0	0	0	420.9	420.9	0

# 1.33 $b\bar{t} \rightarrow e^-\bar{\nu}_e$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
cHDD	$-5.117 \cdot 10^{-6}$	$-5.117 \cdot 10^{-6}$	0	$7.175 \cdot 10^{-10}$	$7.175 \cdot 10^{-10}$	0		
cHWB	$-1.13 \cdot 10^{-5}$	$-1.13 \cdot 10^{-5}$	0	$3.498 \cdot 10^{-9}$	$3.498 \cdot 10^{-9}$	0		
cH13	$-5.947 \cdot 10^{-6}$	$-5.947 \cdot 10^{-6}$	0	$1.022 \cdot 10^{-9}$	$1.022 \cdot 10^{-9}$	0		
сНq3	$-3.957 \cdot 10^{-11}$	$-3.957 \cdot 10^{-11}$	0	$1.599 \cdot 10^{-12}$	$1.599 \cdot 10^{-12}$	0		
cll1	$2.973 \cdot 10^{-6}$	$2.973 \cdot 10^{-6}$	0	$2.566 \cdot 10^{-10}$	$2.566 \cdot 10^{-10}$	0		
sm	0	0	0	0.00915	0.00915	0		

# $1.34 \quad c\bar{c} \rightarrow \mu^+ \mu^-$

		interfere	ence		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
сG	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1		
сН	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1		
сНВ	$1.389 \cdot 10^{-25}$	$7.703 \cdot 10^{-26}$	0.4453	$3.057 \cdot 10^{-27}$	$3.057 \cdot 10^{-27}$	0		
cHDD	$1.138 \cdot 10^{-11}$	$1.138 \cdot 10^{-11}$	0	$6.058 \cdot 10^{-14}$	$6.058 \cdot 10^{-14}$	0		
сHG	$-2.727 \cdot 10^{-24}$	$-2.712 \cdot 10^{-24}$	0.005365	$4.27 \cdot 10^{-24}$	$4.27 \cdot 10^{-24}$	0		
cHW	$5.307 \cdot 10^{-26}$	$6.77 \cdot 10^{-26}$	-0.2757	$2.661 \cdot 10^{-27}$	$2.661 \cdot 10^{-27}$	0		
cHWB	$1.39 \cdot 10^{-11}$	$1.39 \cdot 10^{-11}$	0	$9.036 \cdot 10^{-14}$	$9.036 \cdot 10^{-14}$	0		
cHd	$3.209 \cdot 10^{-12}$	$3.209 \cdot 10^{-12}$	0	$4.815 \cdot 10^{-15}$	$4.815 \cdot 10^{-15}$	0		
сНе	$-7.695 \cdot 10^{-13}$	$-7.695 \cdot 10^{-13}$	0	$3.552 \cdot 10^{-15}$	$3.552 \cdot 10^{-15}$	0		

cHl1	$3.253 \cdot 10^{-12}$ 3	$6.253 \cdot 10^{-12}$	0	$4.947 \cdot 10^{-15}$	$4.947 \cdot 10^{-15}$	0
cH13	$-8.247 \cdot 10^{-12}$ -	$8.247 \cdot 10^{-12}$	0	$4.079 \cdot 10^{-13}$	$4.079 \cdot 10^{-13}$	0
cHq1	$-8.003 \cdot 10^{-12}$ -	$8.003 \cdot 10^{-12}$	0	$2.995 \cdot 10^{-14}$	$2.995 \cdot 10^{-14}$	0
cHq3	$6.431 \cdot 10^{-12}$ 6	$6.431 \cdot 10^{-12}$	0	$2.481 \cdot 10^{-13}$	$2.481 \cdot 10^{-13}$	0
cHu	$-4.337 \cdot 10^{-12}$ -	$4.337 \cdot 10^{-12}$	0	$8.795 \cdot 10^{-15}$	$8.795 \cdot 10^{-15}$	0
cHudRe	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cW	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cdBRe	$-2.549 \cdot 10^{-15}$ -	$2.549 \cdot 10^{-15}$	0	$3.897 \cdot 10^{-20}$	$3.897 \cdot 10^{-20}$	0
cdGRe	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cdHRe	$1.277 \cdot 10^{-25}$	$6.589 \cdot 10^{-26}$	0.4841	$2.237 \cdot 10^{-27}$	$2.237 \cdot 10^{-27}$	0
cdWRe	$-4.617 \cdot 10^{-15}$	$-4.617 \cdot 10^{-15}$	0	$1.279 \cdot 10^{-19}$	$1.279 \cdot 10^{-19}$	0
cdd	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cdd1	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
ceBRe	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
ceHRe	$6.893 \cdot 10^{-26}$	$7.096 \cdot 10^{-27}$	0.8971	$2.595 \cdot 10^{-29}$	$2.595 \cdot 10^{-29}$	0
ceWRe	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
ced	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cee	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
ceu	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cld	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cle	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cledqRe	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
clequ1Re	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
clequ3Re	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cll	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cll1	$5.386 \cdot 10^{-12}$	$5.386 \cdot 10^{-12}$	0	$1.74 \cdot 10^{-13}$	$1.74 \cdot 10^{-13}$	0
clq1	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
clq3	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
clu	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1

cqd1	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cqd8	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cqe	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cqq1	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cqq11	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cqq3	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cqq31	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cqu1	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cqu8	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cquqd11Re	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cquqd1Re	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cquqd81Re	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cquqd8Re	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cuBRe	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cuGRe	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cuHRe	$6.511 \cdot 10^{-26}$	$3.271 \cdot 10^{-27}$	0.9498	$5.514 \cdot 10^{-30}$	$5.514 \cdot 10^{-30}$	0
cuWRe	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cud1	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cud8	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
cuu	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
cuu1	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
sm	0	0	0	0.004643	0.004643	0

### $1.35 \quad c\bar{s} \to \tau^+ \nu_{\tau}$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-1.588 \cdot 10^{-6}$	$-1.588 \cdot 10^{-6}$	0	$2.235 \cdot 10^{-10}$	$2.235 \cdot 10^{-10}$	0		
cHWB	$-3.506 \cdot 10^{-6}$	$-3.506 \cdot 10^{-6}$	0	$1.09 \cdot 10^{-9}$	$1.09 \cdot 10^{-9}$	0		

cHl3	$-2.355 \cdot 10^{-6}$	$-2.355 \cdot 10^{-6}$	0	$4.061 \cdot 10^{-10}  4.061 \cdot 10^{-10}$	0
сНqЗ	$-1.567 \cdot 10^{-11}$	$-1.567 \cdot 10^{-11}$	0	$6.335 \cdot 10^{-13}  6.335 \cdot 10^{-13}$	0
cll1	$1.178 \cdot 10^{-6}$	$1.178 \cdot 10^{-6}$	0	$1.019 \cdot 10^{-10}$ $1.019 \cdot 10^{-10}$	0
sm	0	0	0	0.002839 $0.002839$	0

# 1.36 $d\bar{d} \rightarrow c\bar{c}$

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сG	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1	
сН	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1	
cHB	$8.231 \cdot 10^{-26}$	$5.102 \cdot 10^{-28}$	0.9938	$1.792 \cdot 10^{-29}$	$1.792 \cdot 10^{-29}$	0	
cHDD	$1.506 \cdot 10^{-11}$	$1.506 \cdot 10^{-11}$	0	$2.232 \cdot 10^{-13}$	$2.232 \cdot 10^{-13}$	0	
cHG	$2.7 \cdot 10^{-26}$	$-1.441 \cdot 10^{-26}$	1.534	$2.503 \cdot 10^{-26}$	$2.503 \cdot 10^{-26}$	0	
cHW	$4.177 \cdot 10^{-26}$	$3.597 \cdot 10^{-28}$	0.9914	$1.559 \cdot 10^{-29}$	$1.559 \cdot 10^{-29}$	0	
cHWB	$1.839 \cdot 10^{-11}$	$1.839 \cdot 10^{-11}$	0	$3.33 \cdot 10^{-13}$	$3.33 \cdot 10^{-13}$	0	
cHd	$4.245 \cdot 10^{-12}$	$4.245 \cdot 10^{-12}$	0	$1.774 \cdot 10^{-14}$	$1.774 \cdot 10^{-14}$	0	
сНе	$2.178 \cdot 10^{-12}$	$2.178 \cdot 10^{-12}$	0	$1.25 \cdot 10^{-14}$	$1.25 \cdot 10^{-14}$	0	
cHl1	$4.303 \cdot 10^{-12}$	$4.303 \cdot 10^{-12}$	0	$1.823 \cdot 10^{-14}$	$1.823 \cdot 10^{-14}$	0	
cH13	$2.334 \cdot 10^{-11}$	$2.334 \cdot 10^{-11}$	0	$1.436 \cdot 10^{-12}$	$1.436 \cdot 10^{-12}$	0	
cHq1	$-1.059 \cdot 10^{-11}$	$-1.059 \cdot 10^{-11}$	0	$1.104 \cdot 10^{-13}$	$1.104 \cdot 10^{-13}$	0	
cHq3	$-1.82 \cdot 10^{-11}$	$-1.82 \cdot 10^{-11}$	0	$8.73 \cdot 10^{-13}$	$8.73 \cdot 10^{-13}$	0	
cHu	$-5.737 \cdot 10^{-12}$	$-5.737 \cdot 10^{-12}$	0	$3.241 \cdot 10^{-14}$	$3.241 \cdot 10^{-14}$	0	
cHudRe	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1	
cW	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1	
cdBRe	$7.215 \cdot 10^{-15}$	$7.215 \cdot 10^{-15}$	0	$1.372 \cdot 10^{-19}$	$1.372 \cdot 10^{-19}$	0	
cdGRe	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1	
cdHRe	$8.224 \cdot 10^{-26}$	$4.364 \cdot 10^{-28}$	0.9947	$1.311 \cdot 10^{-1}$	$1.311 \cdot 10^{-29}$	9 0	
cdWRe	$1.307 \cdot 10^{-14}$	$1.307 \cdot 10^{-14}$	0	$4.501 \cdot 10^{-1}$	$4.501 \cdot 10^{-19}$	9 0	

cdd	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cdd1	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
ceBRe	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
ceHRe	$8.185 \cdot 10^{-26}$	$4.7 \cdot 10^{-29}$	0.9994	$1.521 \cdot 10^{-31}$ $1.521 \cdot 10^{-31}$	0
ceWRe	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
ced	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cee	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
ceu	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cld	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cle	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cledqRe	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
clequ1Re	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
clequ3Re	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cll	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cll1	$-1.524 \cdot 10^{-11}$	$-1.524 \cdot 10^{-11}$	0	$6.123 \cdot 10^{-13}  6.123 \cdot 10^{-13}$	0
clq1	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
clq3	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
clu	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cqd1	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cqd8	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cqe	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cqq1	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cqq11	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cqq3	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cqq31	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$ 0	1
cqu1	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cqu8	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cquqd11Re	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1
cquqd1Re	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$ 0	1

cquqd81Re	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
cquqd8Re	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
cuBRe	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
cuGRe	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
cuHRe	$8.182 \cdot 10^{-26}$	$2.167 \cdot 10^{-29}$	0.9997	$3.231 \cdot 10^{-32}$	$3.231 \cdot 10^{-32}$	0
cuWRe	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
cud1	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
cud8	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
cuu	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
cuu1	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
sm	0	0	0	0.5083	0.5083	0

# $1.37 \quad e^+\nu_\mu \to e^+\nu_\mu$

		rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cG	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1	
сН	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1	
сНВ	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1	
cHDD	$7.998 \cdot 10^{-9}$	$7.998 \cdot 10^{-9}$	0	$1.634 \cdot 10^{-10}$	$1.634 \cdot 10^{-10}$	0	
cHG	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1	
cHW	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1	
cHWB	$9.768 \cdot 10^{-9}$	$9.768 \cdot 10^{-9}$	0	$2.438 \cdot 10^{-10}$	$2.438 \cdot 10^{-10}$	0	
cHd	$2.255 \cdot 10^{-9}$	$2.255 \cdot 10^{-9}$	0	$1.299 \cdot 10^{-11}$	$1.299 \cdot 10^{-11}$	0	
сНе	$7.207 \cdot 10^{-7}$	$7.207 \cdot 10^{-7}$	0	$4.209 \cdot 10^{-9}$	$4.209 \cdot 10^{-9}$	0	
cHl1	$2.286 \cdot 10^{-9}$	$2.286 \cdot 10^{-9}$	0	$1.335 \cdot 10^{-11}$	$1.335 \cdot 10^{-11}$	0	
cH13	$7.724 \cdot 10^{-6}$	$7.724 \cdot 10^{-6}$	0	$4.833 \cdot 10^{-7}$	$4.833 \cdot 10^{-7}$	0	
cHq1	$-5.624 \cdot 10^{-9}$	$-5.624 \cdot 10^{-9}$	0	$8.081 \cdot 10^{-11}$	$8.081 \cdot 10^{-11}$	0	
cHq3	$-6.023 \cdot 10^{-6}$	$-6.023 \cdot 10^{-6}$	0	$2.939 \cdot 10^{-7}$	$2.939 \cdot 10^{-7}$	0	

cHu	$-3.047 \cdot 10^{-9}$ -	$-3.047 \cdot 10^{-9}$	0	$2.373 \cdot 10^{-11}$ $2.373 \cdot 10^{-11}$	0
cHudRe	$4.345 \cdot 10^{-23}$	0.017 10	1	$4.824 \cdot 10^{-39}$ 0	1
cW	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$ 0	1
cdBRe		$2.387 \cdot 10^{-9}$	0	$4.618 \cdot 10^{-14}  4.618 \cdot 10^{-14}$	0
cdGRe	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$ 0	1
cddne	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39} \qquad 0$	1
cdWRe	$4.325 \cdot 10^{-9}$	$4.325 \cdot 10^{-9}$	0	$1.515 \cdot 10^{-13}$ $1.515 \cdot 10^{-13}$	0
cdd	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39} \qquad 0$	1
cdd1	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0	1
ceBRe	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0	1
ceHRe	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0	1
ceWRe	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	1
ced	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$ 0	1
cee	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$ 0	1
ceu	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0	1
cld	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$ 0	1
clu	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10$ 0 0 $1.521 \cdot 10^{-36}$ 0	1
	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$ 0	1
cledqRe clequ1Re	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0	1
	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0	1
clequ3Re cll	$4.345 \cdot 10$ $4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10$ 0 0 $4.824 \cdot 10^{-39}$ 0	1
cll1	$-5.044 \cdot 10^{-6}$	$-5.044 \cdot 10^{-6}$	0	$2.062 \cdot 10^{-7}$ $2.062 \cdot 10^{-7}$	0
clq1	$-3.044 \cdot 10$ $4.345 \cdot 10^{-23}$	$-3.044 \cdot 10$	1	$2.002 \cdot 10$ $2.002 \cdot 10$ $4.824 \cdot 10^{-39}$ 0	1
-	$1.37 \cdot 10^{-20}$	0	1		1
clq3	$4.345 \cdot 10^{-23}$	0	1	$1.521 \cdot 10^{-30}$ 0 $4.824 \cdot 10^{-39}$ 0	1
clu	$1.37 \cdot 10^{-20}$	_	1	96	1
cqd1		0	1	9.0	1
cqd8	$1.37 \cdot 10^{-20}$	0	1		1
cqe	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0	1
cqq1	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$ 0	1

cqq11	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
cqq3	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
cqq31	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
cqu1	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cqu8	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cquqd11Re	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cquqd1Re	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cquqd81Re	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
cquqd8Re	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
cuBRe	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cuGRe	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cuHRe	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cuWRe	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cud1	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
cud8	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
cuu	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
cuu1	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
sm	0	0	0	0.1166	0.1166	0

# $1.38 \quad e^+\nu_e \to \mu^+\nu_\mu$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cHDD	$-1.751 \cdot 10^{-5}$	$-1.751 \cdot 10^{-5}$	0	$2.455 \cdot 10^{-9}$	$2.455 \cdot 10^{-9}$	0		
cHWB	$-3.867 \cdot 10^{-5}$	$-3.867 \cdot 10^{-5}$	0	$1.197 \cdot 10^{-8}$	$1.197 \cdot 10^{-8}$	0		
cHl3	$-1.937 \cdot 10^{-6}$	$-1.937 \cdot 10^{-6}$	0	$3.329 \cdot 10^{-10}$	$3.329 \cdot 10^{-10}$	0		
сНq3	$-1.289 \cdot 10^{-11}$	$-1.289 \cdot 10^{-11}$	0	$5.209 \cdot 10^{-13}$	$5.209 \cdot 10^{-13}$	0		
cll1	$9.684 \cdot 10^{-7}$	$9.684 \cdot 10^{-7}$	0	$8.356 \cdot 10^{-11}$	$8.356 \cdot 10^{-11}$	0		
sm	0	0	0	0.03131	0.03131	0		

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

		ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	1 - mod2/mod1
сG	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
сН	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
сНВ	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cHDD	$-3.18 \cdot 10^{-5}$	$-3.18 \cdot 10^{-5}$	0	$2.027 \cdot 10^{-9}$	$2.027 \cdot 10^{-9}$	0
сНG	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cHW	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cHWB	$-7.024 \cdot 10^{-5}$ -	$-7.024 \cdot 10^{-5}$	0	$9.54 \cdot 10^{-9}$	$9.54 \cdot 10^{-9}$	0
cHd	$2.895 \cdot 10^{-9}$	$2.895 \cdot 10^{-9}$	0	$9.781 \cdot 10^{-12}$	$9.781 \cdot 10^{-12}$	0
сНе	$4.293 \cdot 10^{-9}$	$4.293 \cdot 10^{-9}$	0	$1.511 \cdot 10^{-11}$	$1.511 \cdot 10^{-11}$	0
cHl1	$2.934 \cdot 10^{-9}$	$2.934 \cdot 10^{-9}$	0	$1.005 \cdot 10^{-11}$	$1.005 \cdot 10^{-11}$	0
cH13	$-4.362 \cdot 10^{-5}$ -	$-4.362 \cdot 10^{-5}$	0	$4.535 \cdot 10^{-9}$	$4.535 \cdot 10^{-9}$	0
cHq1	$-7.219 \cdot 10^{-9}$ -	$-7.219 \cdot 10^{-9}$	0	$6.084 \cdot 10^{-11}$	$6.084 \cdot 10^{-11}$	0
сНqЗ	$-3.73 \cdot 10^{-8}$	$-3.73 \cdot 10^{-8}$	0	$9.657 \cdot 10^{-10}$	$9.657 \cdot 10^{-10}$	0
сНи	$-3.912 \cdot 10^{-9}$ -	$-3.912 \cdot 10^{-9}$	0	$1.787 \cdot 10^{-11}$	$1.787 \cdot 10^{-11}$	0
cHudRe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cM	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cdBRe	$1.422 \cdot 10^{-11}$	$1.422 \cdot 10^{-11}$	0	$1.657 \cdot 10^{-16}$	$1.657 \cdot 10^{-16}$	0
cdGRe	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cdHRe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-3}$	0	1
cdWRe	$2.576 \cdot 10^{-11}$	$2.576 \cdot 10^{-11}$	0 - 0	$5.438 \cdot 10^{-1}$	$5.438 \cdot 10^{-16}$	0
cdd	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-3}$	0	1
cdd1	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-3}$	0	1
ceBRe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-3}$	0	1
ceHRe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-3}$	0	1
ceWRe	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-3}$	0	1

ced	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cee	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
ceu	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cld	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cle	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cledqRe	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
clequ1Re	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
clequ3Re	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cll	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cll1	$2.18\cdot 10^{-5}$	$2.18\cdot10^{-5}$	0	$1.402 \cdot 10^{-9}$	$1.402 \cdot 10^{-9}$	0
clq1	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
clq3	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
clu	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cqd1	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cqd8	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cqe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cqq1	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cqq11	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cqq3	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cqq31	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cqu1	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cqu8	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cquqd11Re	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cquqd1Re	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cquqd81Re	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cquqd8Re	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cuBRe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cuGRe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cuHRe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1

cuWRe	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cud1	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cud8	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
cuu	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
cuu1	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
sm	0	0	0	0.1892	0.1892	0

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

		interfere	ence		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
сG	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1	
сН	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1	
сНВ	$-3.722 \cdot 10^{-25}$	$1.15 \cdot 10^{-29}$	1	$4.538 \cdot 10^{-31}$	$4.538 \cdot 10^{-31}$	0	
cHDD	$-6.85 \cdot 10^{-11}$	$-6.85 \cdot 10^{-11}$	0	$2.985 \cdot 10^{-13}$	$2.985 \cdot 10^{-13}$	0	
cHG	$-5.195 \cdot 10^{-25}$	$-5.195 \cdot 10^{-28}$	0.999	$7.567 \cdot 10^{-28}$	$7.567 \cdot 10^{-28}$	0	
cHW	$-5.19 \cdot 10^{-25}$	$1.297 \cdot 10^{-29}$	1	$4.715 \cdot 10^{-31}$	$4.715 \cdot 10^{-31}$	0	
cHWB	$-8.366 \cdot 10^{-11}$	$-8.366 \cdot 10^{-11}$	0	$4.452 \cdot 10^{-13}$	$4.452 \cdot 10^{-13}$	0	
cHd	$-1.931 \cdot 10^{-11}$	$-1.931 \cdot 10^{-11}$	0	$2.372 \cdot 10^{-14}$	$2.372 \cdot 10^{-14}$	0	
сНе	$-2.73 \cdot 10^{-11}$	$-2.73 \cdot 10^{-11}$	0	$3.586 \cdot 10^{-14}$	$3.586 \cdot 10^{-14}$	0	
cHl1	$-1.958 \cdot 10^{-11}$	$-1.958 \cdot 10^{-11}$	0	$2.437 \cdot 10^{-14}$	$2.437 \cdot 10^{-14}$	0	
cH13	$-2.925 \cdot 10^{-10}$	$-2.925 \cdot 10^{-10}$	0	$4.118 \cdot 10^{-12}$	$4.118 \cdot 10^{-12}$	0	
cHq1	$4.817 \cdot 10^{-11}$	$4.817 \cdot 10^{-11}$	0	$1.476 \cdot 10^{-13}$	$1.476 \cdot 10^{-13}$	0	
сНqЗ	$2.281 \cdot 10^{-10}$	$2.281 \cdot 10^{-10}$	0	$2.504 \cdot 10^{-12}$	$2.504 \cdot 10^{-12}$	0	
cHu	$2.61 \cdot 10^{-11}$	$2.61 \cdot 10^{-11}$	0	$4.333 \cdot 10^{-14}$	$4.333 \cdot 10^{-14}$	0	
cHudRe	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1	
cW	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1	
cdBRe	$-9.042 \cdot 10^{-14}$	$-9.042 \cdot 10^{-14}$	0	$3.935 \cdot 10^{-19}$	$3.935 \cdot 10^{-19}$	0	
cdGRe	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1	

$-3.722 \cdot 10^{-25}$	$9.841 \cdot 10^{-30}$	1	$3.321 \cdot 10^{-31}$	$3.321 \cdot 10^{-31}$	0
$-1.638 \cdot 10^{-13}$	$-1.638 \cdot 10^{-13}$	0	$1.291 \cdot 10^{-18}$	$1.291 \cdot 10^{-18}$	0
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$-3.722 \cdot 10^{-25}$	$1.06 \cdot 10^{-30}$	1	$3.851 \cdot 10^{-33}$	$3.851 \cdot 10^{-33}$	0
$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$1.911 \cdot 10^{-10}$	$1.911 \cdot 10^{-10}$	0	$1.757 \cdot 10^{-12}$	$1.757 \cdot 10^{-12}$	0
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
	0	1	$1.296 \cdot 10^{-41}$	0	1
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
	0	1			1
	0	1			1
	0	1			1
	0	1			1
	0	1			1
$-5.19 \cdot 10^{-25}$	0	1			1
$-3.722 \cdot 10^{-25}$	0	1			1
$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
	$-1.638 \cdot 10^{-13}$ $-3.722 \cdot 10^{-25}$ $-5.19 \cdot 10^{-25}$ $-3.722 \cdot 10^{-25}$ $-3.722 \cdot 10^{-25}$ $-3.722 \cdot 10^{-25}$ $-3.722 \cdot 10^{-25}$ $-1.911 \cdot 10^{-10}$ $-3.722 \cdot 10^{-25}$ $-5.19 \cdot 10^{-25}$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

cquqd11Re	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
cquqd1Re	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
cquqd81Re	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
cquqd8Re	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
cuBRe	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
cuGRe	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
cuHRe	$-3.722 \cdot 10^{-25}$	$4.886 \cdot 10^{-31}$	1	$8.185 \cdot 10^{-34}$	$8.185 \cdot 10^{-34}$	$1.222 \cdot 10^{-8}$
cuWRe	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
cud1	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
cud8	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
cuu	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
cuu1	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
sm	0	0	0	0.01065	0.01065	0

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

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$		
сG	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1		
сН	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1		
сНВ	$3.378 \cdot 10^{-25}$	$3.707 \cdot 10^{-32}$	1	$1.485 \cdot 10^{-33}$	$1.485 \cdot 10^{-33}$	0		
cHDD	$6.217 \cdot 10^{-11}$	$6.217 \cdot 10^{-11}$	0	$1.946 \cdot 10^{-13}$	$1.946 \cdot 10^{-13}$	0		
сHG	$-3.03 \cdot 10^{-26}$	$-1.34 \cdot 10^{-30}$	1	$2.074 \cdot 10^{-30}$	$2.074 \cdot 10^{-30}$	0		
cHW	$-3.029 \cdot 10^{-26}$	$3.345 \cdot 10^{-32}$	1	$1.292 \cdot 10^{-33}$	$1.292 \cdot 10^{-33}$	0		
cHWB	$7.593 \cdot 10^{-11}$	$7.593 \cdot 10^{-11}$	0	$2.903 \cdot 10^{-13}$	$2.903 \cdot 10^{-13}$	0		
cHd	$1.753 \cdot 10^{-11}$	$1.753 \cdot 10^{-11}$	0	$1.547 \cdot 10^{-14}$	$1.547 \cdot 10^{-14}$	0		
сНе	$-1.594 \cdot 10^{-12}$	$-1.594 \cdot 10^{-12}$	0	$8.914 \cdot 10^{-15}$	$8.914 \cdot 10^{-15}$	0		
cHl1	$1.777 \cdot 10^{-11}$	$1.777 \cdot 10^{-11}$	0	$1.589 \cdot 10^{-14}$	$1.589 \cdot 10^{-14}$	0		
cH13	$-1.708 \cdot 10^{-11}$	$-1.708 \cdot 10^{-11}$	0	$1.024 \cdot 10^{-12}$	$1.024 \cdot 10^{-12}$	0		

cHq1	$-4.371 \cdot 10^{-11}$ $-4$	$3.371 \cdot 10^{-11}$	0	$9.621 \cdot 10^{-14}$ 9.	$621 \cdot 10^{-14}$	0
cHq3	$1.332 \cdot 10^{-11}$ 1.3	$332 \cdot 10^{-11}$	0	$6.225 \cdot 10^{-13}$ 6.	$225 \cdot 10^{-13}$	0
сHu	$-2.369 \cdot 10^{-11}$ $-2$	$2.369 \cdot 10^{-11}$	0	$2.825 \cdot 10^{-14}$ 2.	$825 \cdot 10^{-14}$	0
cHudRe	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cW	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cdBRe	$-5.278 \cdot 10^{-15}$ $-5$	$5.278 \cdot 10^{-15}$	0	$9.779 \cdot 10^{-20}$ 9.	$779 \cdot 10^{-20}$	0
cdGRe	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cdHRe	$3.378 \cdot 10^{-25}$	$3.171 \cdot 10^{-32}$	1	$1.087 \cdot 10^{-33}$	$1.087 \cdot 10^{-33}$	0
cdWRe	$-9.561 \cdot 10^{-15}$	$-9.561 \cdot 10^{-15}$	0	$3.209 \cdot 10^{-19}$	$3.209 \cdot 10^{-19}$	0
cdd	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cdd1	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
ceBRe	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
ceHRe	$3.378 \cdot 10^{-25}$	$3.415 \cdot 10^{-33}$	1	$1.26 \cdot 10^{-35}$	$1.26 \cdot 10^{-35}$	$4.761 \cdot 10^{-7}$
ceWRe	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
ced	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cee	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
ceu	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cld	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cle	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cledqRe	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
clequ1Re	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
clequ3Re	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cll	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cll1	$1.115 \cdot 10^{-11}$	$1.115 \cdot 10^{-11}$	0	$4.366 \cdot 10^{-13}$	$4.366 \cdot 10^{-13}$	0
clq1	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
clq3	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
clu	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cqd1	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cqd8	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1

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cqe	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cqq1	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cqq11	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cqq3	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cqq31	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cqu1	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cqu8	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cquqd11Re	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cquqd1Re	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cquqd81Re	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cquqd8Re	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cuBRe	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cuGRe	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cuHRe	$3.378 \cdot 10^{-25}$	$1.574 \cdot 10^{-33}$	1	$2.678 \cdot 10^{-36}$	$2.678 \cdot 10^{-36}$	$2.128 \cdot 10^{-6}$
cuWRe	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cud1	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cud8	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
cuu	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
cuu1	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
sm	0	0	0	0.03185	0.03185	0

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

	interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сG	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1	
сН	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1	
сНВ	$8.482 \cdot 10^{-24}$	$1.042 \cdot 10^{-23}$	-0.229	$6.068 \cdot 10^{-38}$	$6.295 \cdot 10^{-38}$	-0.03746	
cHDD	$-3.576 \cdot 10^{-10}$	$-3.576 \cdot 10^{-10}$	0	$1.992 \cdot 10^{-12}$	$1.992 \cdot 10^{-12}$	0	
cHG	$-6.805 \cdot 10^{-22}$	$-6.744 \cdot 10^{-22}$	0.009006	$1.648 \cdot 10^{-34}$	$1.646 \cdot 10^{-34}$	0.0009157	

cHW	$1.071 \cdot 10^{-23}$ 1.6	$83 \cdot 10^{-23}$	-0.5725	$9.907 \cdot 10^{-38}$	$1.026 \cdot 10^{-37}$	-0.03539
cHWB	$-4.367 \cdot 10^{-10}$ $-4.$	$367 \cdot 10^{-10}$	0	$2.971 \cdot 10^{-12}$	$2.971 \cdot 10^{-12}$	0
cHd	$-1.008 \cdot 10^{-10}  -1.$	$008 \cdot 10^{-10}$	0	$1.583 \cdot 10^{-13}$	$1.583 \cdot 10^{-13}$	0
сНе		$224 \cdot 10^{-10}$	0	$7.044 \cdot 10^{-13}$	$7.044 \cdot 10^{-13}$	0
cHl1	$-1.022 \cdot 10^{-10}  -1.$	$022 \cdot 10^{-10}$	0	$1.626 \cdot 10^{-13}$	$1.626 \cdot 10^{-13}$	0
cH13	$-3.455 \cdot 10^{-9}$ $-3.$	$455 \cdot 10^{-9}$	0	$8.089 \cdot 10^{-11}$	$8.089 \cdot 10^{-11}$	0
cHq1	$2.514 \cdot 10^{-10} \qquad 2.5$	$14 \cdot 10^{-10}$	0	$9.847 \cdot 10^{-13}$	$9.847 \cdot 10^{-13}$	0
сНq3	$2.694 \cdot 10^{-9}$ 2.6	$694 \cdot 10^{-9}$	0	$4.92 \cdot 10^{-11}$	$4.92 \cdot 10^{-11}$	0
сНи	$1.362 \cdot 10^{-10}$ 1.3	$62 \cdot 10^{-10}$	0	$2.891 \cdot 10^{-13}$	$2.891 \cdot 10^{-13}$	0
cHudRe	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cM	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cdBRe	$-1.068 \cdot 10^{-12}$ $-1.$	$068 \cdot 10^{-12}$	0	$7.729 \cdot 10^{-18}$	$7.729 \cdot 10^{-18}$	0
cdGRe	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cdHRe	$6.974 \cdot 10^{-24}$	$8.917 \cdot 10^{-24}$	-0.2785	$4.413 \cdot 10^{-3}$	$8  4.606 \cdot 10^{-38}$	-0.04387
cdWRe	$-1.934 \cdot 10^{-12}$ -	$-1.934 \cdot 10^{-12}$	0	$2.536 \cdot 10^{-1}$		0
cdd	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-4}$	0	1
cdd1	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-4}$	0	1
ceBRe	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-4}$	0	1
ceHRe		$9.603 \cdot 10^{-25}$	1.978	$3.782 \cdot 10^{-4}$		-0.4126
ceWRe	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-4}$	0	1
ced	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-4}$		1
cee	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-4}$		1
ceu	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-4}$		1
cld	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-4}$	0	1
cle	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-4}$		1
cledqRe	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-4}$		1
clequ1Re	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-4}$		1
clequ3Re	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-4}$		1
cll	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-4}$	0	1

cll1	$2.256 \cdot 10^{-9}$	$2.256 \cdot 10^{-9}$	0	$3.451 \cdot 10^{-11}$	$3.451 \cdot 10^{-11}$	0
clq1	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
clq3	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
clu	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cqd1	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cqd8	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cqe	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cqq1	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cqq11	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cqq3	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cqq31	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cqu1	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cqu8	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cquqd11Re	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cquqd1Re	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cquqd81Re	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cquqd8Re	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cuBRe	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cuGRe	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cuHRe	$-1.5 \cdot 10^{-24}$	$4.427 \cdot 10^{-25}$	1.295	$7.329 \cdot 10^{-41}$	$1.135 \cdot 10^{-40}$	-0.5492
cuWRe	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cud1	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cud8	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
cuu	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
cuu1	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
sm	0	0	0	0.02839	0.02839	0

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

		interfere	nce		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
сG	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
сН	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
сНВ	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cHDD	$1.76 \cdot 10^{-11}$	$1.76 \cdot 10^{-11}$	0	$3.597 \cdot 10^{-13}$	$3.597 \cdot 10^{-13}$	0
сHG	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cHW	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cHWB	$2.15 \cdot 10^{-11}$	$2.15 \cdot 10^{-11}$	0	$5.365 \cdot 10^{-13}$	$5.365 \cdot 10^{-13}$	0
cHd	$4.962 \cdot 10^{-12}$	$4.962 \cdot 10^{-12}$	0	$2.859 \cdot 10^{-14}$	$2.859 \cdot 10^{-14}$	0
сНе	$3.135 \cdot 10^{-12}$	$3.135 \cdot 10^{-12}$	0	$1.831 \cdot 10^{-14}$	$1.831 \cdot 10^{-14}$	0
cHl1	$5.03 \cdot 10^{-12}$	$5.03 \cdot 10^{-12}$	0	$2.937 \cdot 10^{-14}$		0
cH13	$3.359 \cdot 10^{-11}$	$3.359 \cdot 10^{-11}$	0	$2.102 \cdot 10^{-12}$	$2.102 \cdot 10^{-12}$	0
cHq1	$-1.238 \cdot 10^{-11}$	$-1.238 \cdot 10^{-11}$	0	$1.778 \cdot 10^{-13}$	$1.778 \cdot 10^{-13}$	0
сНqЗ	$-2.62 \cdot 10^{-11}$	$-2.62 \cdot 10^{-11}$	0	$1.278 \cdot 10^{-12}$	$1.278 \cdot 10^{-12}$	0
cHu	$-6.706 \cdot 10^{-12}$	$-6.706 \cdot 10^{-12}$	0	$5.222 \cdot 10^{-14}$	$5.222 \cdot 10^{-14}$	0
cHudRe	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cW	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cdBRe	$1.038 \cdot 10^{-14}$	$1.038 \cdot 10^{-14}$	0	$2.008 \cdot 10^{-19}$	$2.008 \cdot 10^{-19}$	0
cdGRe	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cdHRe	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-4}$	0	1
cdWRe	$1.881 \cdot 10^{-14}$	$1.881 \cdot 10^{-14}$	0	$6.591 \cdot 10^{-1}$		9 0
cdd	$9.562 \cdot 10^{-26}$		1	$1.062 \cdot 10^{-4}$		1
cdd1	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-4}$	0	1
ceBRe	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-4}$	1 0	1
ceHRe	$9.562 \cdot 10^{-26}$		1	$1.062 \cdot 10^{-4}$		1
ceWRe	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-4}$	0	1
ced	$5.959 \cdot 10^{-26}$		1	$6.616 \cdot 10^{-4}$	0	1
cee	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-4}$	0	1

ceu	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cld	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cle	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cledqRe	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
clequ1Re	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
clequ3Re	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cll	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cll1	$-2.194 \cdot 10^{-11}$	$-2.194 \cdot 10^{-11}$	0	$8.967 \cdot 10^{-13}$ $8.9$	$067 \cdot 10^{-13}$	0
clq1	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
clq3	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
clu	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cqd1	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cqd8	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cqe	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cqq1	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cqq11	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cqq3	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cqq31	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cqu1	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cqu8	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cquqd11Re	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cquqd1Re	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cquqd81Re	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cquqd8Re	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cuBRe	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cuGRe	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cuHRe	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cuWRe	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cud1	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1

cud8	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
cuu	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
cuu1	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
sm	0	0	0	0.00409	0.00409	0

#### 1.44 $s\bar{s} \rightarrow s\bar{s}$

	interference				square		
	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cG	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1	
сН	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1	
сНВ	$1.901 \cdot 10^{-20}$	$1.901 \cdot 10^{-20}$	$-5.104 \cdot 10^{-6}$	$6.674 \cdot 10^{-29}$	$6.674 \cdot 10^{-29}$	$-1.199 \cdot 10^{-7}$	
cHDD	$-1.786 \cdot 10^{-11}$	$-1.786 \cdot 10^{-11}$	0	$1.649 \cdot 10^{-13}$	$1.649 \cdot 10^{-13}$	0	
cHG	$-1.601 \cdot 10^{-18}$	$-1.601 \cdot 10^{-18}$	$3.061 \cdot 10^{-6}$	$1.762 \cdot 10^{-25}$	$1.762 \cdot 10^{-25}$	0	
cHW	$3.995 \cdot 10^{-20}$	$3.996 \cdot 10^{-20}$	-0.0001227	$1.098 \cdot 10^{-28}$	$1.098 \cdot 10^{-28}$	$-9.108 \cdot 10^{-8}$	
cHWB	$-2.181 \cdot 10^{-11}$	$-2.181 \cdot 10^{-11}$	0	$2.46 \cdot 10^{-13}$	$2.46 \cdot 10^{-13}$	0	
cHd	$-5.034 \cdot 10^{-12}$	$-5.034 \cdot 10^{-12}$	0	$1.311 \cdot 10^{-14}$	$1.311 \cdot 10^{-14}$	0	
сНе	$-2.58 \cdot 10^{-10}$	$-2.58 \cdot 10^{-10}$	0	$2.586 \cdot 10^{-13}$	$2.586 \cdot 10^{-13}$	0	
cHl1	$-5.103 \cdot 10^{-12}$	$-5.103 \cdot 10^{-12}$	0	$1.347 \cdot 10^{-14}$	$1.347 \cdot 10^{-14}$	0	
cH13	$-2.764 \cdot 10^{-9}$	$-2.764 \cdot 10^{-9}$	0	$2.97 \cdot 10^{-11}$	$2.97 \cdot 10^{-11}$	0	
cHq1	$1.256 \cdot 10^{-11}$	$1.256 \cdot 10^{-11}$	0	$8.155 \cdot 10^{-14}$	$8.155 \cdot 10^{-14}$	0	
cHq3	$2.156 \cdot 10^{-9}$	$2.156 \cdot 10^{-9}$	0	$1.806 \cdot 10^{-11}$	$1.806 \cdot 10^{-11}$	0	
сHu	$6.803 \cdot 10^{-12}$	$6.803 \cdot 10^{-12}$	0	$2.395 \cdot 10^{-14}$	$2.395 \cdot 10^{-14}$	0	
cHudRe	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1	
cM	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1	
cdBRe	$-8.544 \cdot 10^{-13}$	$-8.544 \cdot 10^{-13}$	0	$2.838 \cdot 10^{-18}$	$2.838 \cdot 10^{-18}$	0	
cdGRe	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1	
cdHRe	$1.626 \cdot 10^{-20}$	$1.626 \cdot 10^{-20}$	$-5.966 \cdot 10^{-6}$	$4.884 \cdot 10^{-2}$	$4.884 \cdot 10^{-2}$	$9 -1.433 \cdot 10^{-7}$	
cdWRe	$-1.548 \cdot 10^{-1}$	$-1.548 \cdot 10^{-13}$	0 - 0	$9.311 \cdot 10^{-1}$	9.311 $\cdot$ 10 <sup>-1</sup>	8 0	

cdd	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cdd1	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
ceBRe	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
ceHRe	$1.751 \cdot 10^{-21}$	$1.751 \cdot 10^{-21}$	$-5.54 \cdot 10^{-5}$	$5.664 \cdot 10^{-31}$	$5.664 \cdot 10^{-31}$	$-1.342 \cdot 10^{-6}$
ceWRe	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
ced	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cee	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
ceu	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cld	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cle	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cledqRe	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
clequ1Re	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
clequ3Re	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cll	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cll1	$1.805 \cdot 10^{-9}$	$1.805 \cdot 10^{-9}$	0	$1.267 \cdot 10^{-11}$	$1.267 \cdot 10^{-11}$	0
clq1	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
clq3	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
clu	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cqd1	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cqd8	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cqe	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cqq1	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cqq11	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cqq3	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cqq31	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cqu1	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$		1
cqu8	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$		1
cquqd11Re	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$		1
cquqd1Re	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1

cquqd81Re	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cquqd8Re	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cuBRe	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cuGRe	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cuHRe	$8.07 \cdot 10^{-22}$	$8.071 \cdot 10^{-22}$	-0.0001202	$1.204 \cdot 10^{-31}$	$1.204 \cdot 10^{-31}$	$-2.825 \cdot 10^{-6}$
cuWRe	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cud1	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cud8	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
cuu	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
cuu1	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
sm	0	0	0	2.033	2.033	0

### 1.45 $t\bar{t} \rightarrow t\bar{t}$

		interfere	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
сG	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1	
сН	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1	
сНВ	$-6.464 \cdot 10^{-13}$	$-6.464 \cdot 10^{-13}$	0	$4.123 \cdot 10^{-16}$	$4.123 \cdot 10^{-16}$	0	
cHDD	$-1.314 \cdot 10^{-9}$	$-1.314 \cdot 10^{-9}$	0	$1.809 \cdot 10^{-11}$	$1.809 \cdot 10^{-11}$	0	
cHG	$6.179 \cdot 10^{-11}$	$6.179 \cdot 10^{-11}$	0	$3.162 \cdot 10^{-12}$	$3.162 \cdot 10^{-12}$	0	
cHW	$-1.542 \cdot 10^{-12}$	$-1.542 \cdot 10^{-12}$	0	$1.97 \cdot 10^{-15}$	$1.97 \cdot 10^{-15}$	0	
cHWB	$-1.604 \cdot 10^{-9}$	$-1.604 \cdot 10^{-9}$	0	$2.693 \cdot 10^{-11}$	$2.693 \cdot 10^{-11}$	0	
cHd	$-3.706 \cdot 10^{-10}$	$-3.706 \cdot 10^{-10}$	0	$1.438 \cdot 10^{-12}$	$1.438 \cdot 10^{-12}$	0	
сНе	$-8.83 \cdot 10^{-10}$	$-8.83 \cdot 10^{-10}$	0	$8.14 \cdot 10^{-12}$	$8.14 \cdot 10^{-12}$	0	
cHl1	$-3.756 \cdot 10^{-10}$	$-3.756 \cdot 10^{-10}$	0	$1.478 \cdot 10^{-12}$	$1.478 \cdot 10^{-12}$	0	
cH13	$-9.464 \cdot 10^{-9}$	$-9.464 \cdot 10^{-9}$	0	$9.349 \cdot 10^{-10}$	$9.349 \cdot 10^{-10}$	0	
cHq1	$9.243 \cdot 10^{-10}$	$9.243 \cdot 10^{-10}$	0	$8.947 \cdot 10^{-12}$	$8.947 \cdot 10^{-12}$	0	
сНqЗ	$7.379 \cdot 10^{-9}$	$7.379 \cdot 10^{-9}$	0	$5.684 \cdot 10^{-10}$	$5.684 \cdot 10^{-10}$	0	

cHu	$5.009 \cdot 10^{-10}$ $5.009 \cdot 10^{-10}$	0	$2.627 \cdot 10^{-12}  2.627 \cdot 10^{-12}$	0
cHudRe	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$ 0	1
cW	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
cdBRe	$-2.925 \cdot 10^{-12}  -2.925 \cdot 10^{-12}$	0	$8.93 \cdot 10^{-17}$ $8.93 \cdot 10^{-17}$	0
cdGRe	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
cdHRe	$-5.529 \cdot 10^{-13}  -5.529 \cdot 10^{-13}$	0	$3.017 \cdot 10^{-16}  3.017 \cdot 10^{-16}$	0
cdWRe	$-5.298 \cdot 10^{-12}  -5.298 \cdot 10^{-12}$	0	$2.93 \cdot 10^{-16}$ $2.93 \cdot 10^{-16}$	0
cdd	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$ 0	1
cdd1	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$ 0	1
ceBRe	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$	1
ceHRe	$-5.955 \cdot 10^{-14}  -5.955 \cdot 10^{-14}$	0	$3.499 \cdot 10^{-18}  3.499 \cdot 10^{-18}$	0
ceWRe	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
ced	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
cee	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
ceu	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$	1
cld	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
cle	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
cledqRe	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
clequ1Re	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$	1
clequ3Re	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$	1
cll	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$	1
cll1	$6.181 \cdot 10^{-9}$ $6.181 \cdot 10^{-9}$	0	$3.988 \cdot 10^{-10}  3.988 \cdot 10^{-10}$	0
clq1	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$	1
clq3	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
clu	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$ 0	1
cqd1	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
cqd8	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1
cqe	$-7.142 \cdot 10^{-24}$ 0	1	$5.341 \cdot 10^{-40}$ 0	1
cqq1	$-1.679 \cdot 10^{-23}$ 0	1	$2.942 \cdot 10^{-39}$ 0	1

cqq11	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
cqq3	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
cqq31	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
cqu1	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
cqu8	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
cquqd11Re	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
cquqd1Re	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
cquqd81Re	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
cquqd8Re	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
cuBRe	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
cuGRe	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
cuHRe	$-2.745 \cdot 10^{-14}$	$-2.745 \cdot 10^{-14}$	0	$7.436 \cdot 10^{-19}$	$7.436 \cdot 10^{-19}$	0
cuWRe	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
cud1	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
cud8	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
cuu	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
cuu1	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
sm	0	0	0	1.624	1.624	0

#### 1.46 $tg \rightarrow bW^+$

		interfer	rence	square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
cG	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1	
сН	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1	
сНВ	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1	
cHDD	$1.889 \cdot 10^{-9}$	$1.889 \cdot 10^{-9}$	0	$1.073 \cdot 10^{-11}$	$1.073 \cdot 10^{-11}$	0	
cHG	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1	
cHW	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1	

cHWB		$4.172 \cdot 10^{-9}$	0	$5.23 \cdot 10^{-11}$	$5.23 \cdot 10^{-11}$	0
cHd	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
сНе	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
cHl1	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
cH13	$-3.892 \cdot 10^{-8}$ -	$-3.892 \cdot 10^{-8}$	0	$2.175 \cdot 10^{-9}$	$2.175 \cdot 10^{-9}$	0
cHq1	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
сНq3	$4.36 \cdot 10^{-8}$	$4.36 \cdot 10^{-8}$	0	$2.729 \cdot 10^{-9}$	$2.729 \cdot 10^{-9}$	0
сHu	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
cHudRe	$7.079 \cdot 10^{-12}$	$7.079 \cdot 10^{-12}$	0	$1.506 \cdot 10^{-16}$	$1.506 \cdot 10^{-16}$	0
cW	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
cdBRe	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
cdGRe	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
cdHRe	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
cdWRe	$5.371 \cdot 10^{-11}$	$5.371 \cdot 10^{-11}$	0	$4.141 \cdot 10^{-15}$	$4.141 \cdot 10^{-15}$	0
cdd	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
cdd1	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
ceBRe	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
ceHRe	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
ceWRe	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
ced	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
cee	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
ceu	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
cld	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
cle	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
cledqRe	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
clequ1Re	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
clequ3Re	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
cll	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
cll1	$1.946 \cdot 10^{-8}$	$1.946 \cdot 10^{-8}$	0	$5.438 \cdot 10^{-10}$	$5.438 \cdot 10^{-10}$	0

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## 1.47 $u\bar{d} \rightarrow c\bar{s}$

cHDD	$-1.065 \cdot 10^{-7}$	$-1.065 \cdot 10^{-7}$	0	$1.493 \cdot 10^{-11}$	$1.493 \cdot 10^{-11}$	0
cHWB	$-2.351 \cdot 10^{-7}$	$-2.351 \cdot 10^{-7}$	0	$7.278 \cdot 10^{-11}$	$7.278 \cdot 10^{-11}$	0
cH13	$-2.66 \cdot 10^{-7}$	$-2.66 \cdot 10^{-7}$	0	$4.573 \cdot 10^{-11}$	$4.573 \cdot 10^{-11}$	0
cHq3	$-1.77 \cdot 10^{-12}$	$-1.77 \cdot 10^{-12}$	0	$7.155 \cdot 10^{-14}$	$7.155 \cdot 10^{-14}$	0
cll1	$1.33 \cdot 10^{-7}$	$1.33 \cdot 10^{-7}$	0	$1.148 \cdot 10^{-11}$	$1.148 \cdot 10^{-11}$	0
sm	0	0	0	0.0001904	0.0001904	0

### 1.48 $u\bar{u} \rightarrow \nu_e \bar{\nu}_e$

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
cG	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1		
сН	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1		
cHB	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1		
cHDD	$3.494 \cdot 10^{-12}$	$3.494 \cdot 10^{-12}$	0	$7.14 \cdot 10^{-14}$	$7.14 \cdot 10^{-14}$	0		
cHG	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1		
cHW	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1		
cHWB	$4.267 \cdot 10^{-12}$	$4.267 \cdot 10^{-12}$	0	$1.065 \cdot 10^{-13}$	$1.065 \cdot 10^{-13}$	0		
cHd	$9.85 \cdot 10^{-13}$	$9.85 \cdot 10^{-13}$	0	$5.675 \cdot 10^{-15}$	$5.675 \cdot 10^{-15}$	0		
сНе	$2.209 \cdot 10^{-12}$	$2.209 \cdot 10^{-12}$	0	$1.29 \cdot 10^{-14}$	$1.29 \cdot 10^{-14}$	0		
cHl1	$9.985 \cdot 10^{-13}$	$9.985 \cdot 10^{-13}$	0	$5.831 \cdot 10^{-15}$	$5.831 \cdot 10^{-15}$	0		
cH13	$2.367 \cdot 10^{-11}$	$2.367 \cdot 10^{-11}$	0	$1.481 \cdot 10^{-12}$	$1.481 \cdot 10^{-12}$	0		
cHq1	$-2.457 \cdot 10^{-12}$	$-2.457 \cdot 10^{-12}$	0	$3.53 \cdot 10^{-14}$	$3.53 \cdot 10^{-14}$	0		
сНqЗ	$-1.846 \cdot 10^{-11}$	$-1.846 \cdot 10^{-11}$	0	$9.008 \cdot 10^{-13}$	$9.008 \cdot 10^{-13}$	0		
cHu	$-1.331 \cdot 10^{-12}$	$-1.331 \cdot 10^{-12}$	0	$1.037 \cdot 10^{-14}$	$1.037 \cdot 10^{-14}$	0		
cHudRe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1		
cW	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1		
cdBRe	$7.316 \cdot 10^{-15}$	$7.316 \cdot 10^{-15}$	0	$1.415 \cdot 10^{-19}$	$1.415 \cdot 10^{-19}$	0		
cdGRe	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1		

cdHRe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cdWRe	$1.325 \cdot 10^{-14}$	$1.325 \cdot 10^{-14}$	0	$4.644 \cdot 10^{-19}$	$4.644 \cdot 10^{-19}$	0
cdd	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cdd1	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
ceBRe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
ceHRe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
ceWRe	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
ced	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
cee	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
ceu	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cld	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
cle	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
cledqRe	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
clequ1Re	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
clequ3Re	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cll	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cll1	$-1.546 \cdot 10^{-11}$	$-1.546 \cdot 10^{-11}$	0	$6.318 \cdot 10^{-13}$	$6.318 \cdot 10^{-13}$	0
clq1	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
clq3	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
clu	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cqd1	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
cqd8	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$		1
cqe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$		1
cqq1	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$		1
cqq11	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$		1
cqq3	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$		1
cqq31	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$		1
cqu1	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$		1
cqu8	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1

cquqd11Re	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cquqd1Re	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cquqd81Re	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
cquqd8Re	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
cuBRe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cuGRe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cuHRe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cuWRe	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cud1	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
cud8	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
cuu	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
cuu1	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
sm	0	0	0	0.000812	0.000812	0

#### **1.49** $u\bar{u} \rightarrow u\bar{u}$

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
cG	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
сН	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
сНВ	$2.919 \cdot 10^{-23}$	$3.026 \cdot 10^{-23}$	-0.03634	$2.492 \cdot 10^{-35}$	$2.493 \cdot 10^{-35}$	-0.0003764
cHDD	$-1.953 \cdot 10^{-10}$	$-1.953 \cdot 10^{-10}$	0	$8.067 \cdot 10^{-13}$	$8.067 \cdot 10^{-13}$	0
cHG	$-4.023 \cdot 10^{-20}$	$-3.964 \cdot 10^{-20}$	0.01476	$7.166 \cdot 10^{-31}$	$7.166 \cdot 10^{-31}$	$1.32 \cdot 10^{-5}$
cHW	$3.958 \cdot 10^{-22}$	$9.894 \cdot 10^{-22}$	-1.5	$4.463 \cdot 10^{-34}$	$4.465 \cdot 10^{-34}$	-0.0003533
cHWB	$-2.385 \cdot 10^{-10}$	$-2.385 \cdot 10^{-10}$	0	$1.203 \cdot 10^{-12}$	$1.203 \cdot 10^{-12}$	0
cHd	$-5.506 \cdot 10^{-11}$	$-5.506 \cdot 10^{-11}$	0	$6.411 \cdot 10^{-14}$	$6.411 \cdot 10^{-14}$	0
сНе	$-3.123 \cdot 10^{-8}$	$-3.123 \cdot 10^{-8}$	0	$2.116 \cdot 10^{-10}$	$2.116 \cdot 10^{-10}$	0
cHl1	$-5.581 \cdot 10^{-11}$	$-5.581 \cdot 10^{-11}$	0	$6.587 \cdot 10^{-14}$	$6.587 \cdot 10^{-14}$	0
cH13	$-3.346 \cdot 10^{-7}$	$-3.346 \cdot 10^{-7}$	0	$2.43 \cdot 10^{-8}$	$2.43 \cdot 10^{-8}$	0

cHq1	$1.373 \cdot 10^{-10}$ $1.373 \cdot 1$	$0^{-10}$ 0	$3.988 \cdot 10^{-13}$ 3.9	$988 \cdot 10^{-13}$	0
cHq3	$2.61 \cdot 10^{-7}$ $2.61 \cdot 1$			$478 \cdot 10^{-8}$	0
сHu	$7.441 \cdot 10^{-11}$ $7.441 \cdot 1$	$0^{-11}$ 0	$1.171 \cdot 10^{-13}$ 1.3	$171 \cdot 10^{-13}$	0
cHudRe	$-1.061 \cdot 10^{-24}$ 0	1	$2.381 \cdot 10^{-41}$	0	1
cW	$-5.937 \cdot 10^{-22}$	1	$7.647 \cdot 10^{-38}$	0	1
cdBRe	$-1.034 \cdot 10^{-10}  -1.034 \cdot$	$10^{-10}$ 0	$2.321 \cdot 10^{-15}$ 2.3	$321 \cdot 10^{-15}$	0
cdGRe	$-5.937 \cdot 10^{-22}$ 0	1	$7.647 \cdot 10^{-38}$	0	1
cdHRe	$2.482 \cdot 10^{-23}$ 2.588	$\cdot10^{-23}$ $-0.04275$	$1.823 \cdot 10^{-35}$	$1.824 \cdot 10^{-35}$	-0.0004398
cdWRe	$-1.874 \cdot 10^{-10}$ $-1.874$	$4 \cdot 10^{-10}$ 0	$7.617 \cdot 10^{-15}$	$7.617 \cdot 10^{-15}$	0
cdd	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
cdd1	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
ceBRe	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
ceHRe	$1.726 \cdot 10^{-24} \qquad 2.787$	$\cdot 10^{-24}$ $-0.6146$	$2.107 \cdot 10^{-37}$	$2.115 \cdot 10^{-37}$	-0.003998
ceWRe	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1
ced	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1
cee	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1
ceu	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
cld	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1
cle	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1
cledqRe	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1
clequ1Re	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
clequ3Re	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
cll	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
cll1	$2.185 \cdot 10^{-7}$ 2.185	$\cdot 10^{-7}$ 0	$1.036 \cdot 10^{-8}$	$1.036 \cdot 10^{-8}$	0
clq1	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
clq3	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1
clu	$-1.061 \cdot 10^{-24}$	0 1	$2.381 \cdot 10^{-41}$	0	1
cqd1	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1
cqd8	$-5.937 \cdot 10^{-22}$	0 1	$7.647 \cdot 10^{-38}$	0	1

cqe	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cqq1	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
cqq11	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
cqq3	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
cqq31	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
cqu1	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cqu8	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cquqd11Re	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cquqd1Re	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cquqd81Re	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
cquqd8Re	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
cuBRe	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cuGRe	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cuHRe	$2.239 \cdot 10^{-25}$	$1.285 \cdot 10^{-24}$	-4.738	$4.458 \cdot 10^{-38}$	$4.496 \cdot 10^{-38}$	-0.008423
cuWRe	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cud1	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
cud8	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1
cuu	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
cuu1	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1
sm	0	0	0	2.664	2.664	0

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

		interfer	rence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1 - \mathtt{mod}2/\mathtt{mod}1$		
cHB	$-1.18 \cdot 10^{-7}$	$-1.18 \cdot 10^{-7}$	0	$5.521 \cdot 10^{-14}$	$5.521 \cdot 10^{-14}$	0		
cHDD	-6.146	-6.146	0	0.31	0.31	0		
cHG	$4.409 \cdot 10^{-6}$	$4.409 \cdot 10^{-6}$	0	$7.711 \cdot 10^{-11}$	$7.711 \cdot 10^{-11}$	0		
cHW	$-1.1 \cdot 10^{-7}$	$-1.1 \cdot 10^{-7}$	0	$4.805 \cdot 10^{-14}$	$4.805 \cdot 10^{-14}$	0		

cHWB	-13.57	-13.57	0	1.512	1.512	0
cHl3	-7.501	-7.501	0	0.4623	0.4623	0
cHq3	0.01038	0.01038	0	0.0004122	0.0004122	0
cdHRe	$-1.009 \cdot 10^{-7}$	$-1.009 \cdot 10^{-7}$	0	$4.04 \cdot 10^{-14}$	$4.04 \cdot 10^{-14}$	0
ceHRe	$-1.087 \cdot 10^{-8}$	$-1.087 \cdot 10^{-8}$	0	$4.686 \cdot 10^{-16}$	$4.686 \cdot 10^{-16}$	0
cll1	3.753	3.753	0	0.1158	0.1158	0
cuHRe	$-5.01 \cdot 10^{-9}$	$-5.01 \cdot 10^{-9}$	0	$9.958 \cdot 10^{-17}$	$9.958 \cdot 10^{-17}$	0
sm	0	0	0	32.49	32.49	0

# 2 By parameter point

### 2.1 cG

		$\mathrm{int}\epsilon$	erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar{b} b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
HH  o zt ar t	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
$W^+W^- \to Hb\bar{b}$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1	
$W^+W^- \to H c \bar c$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1	
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1	

$b\bar{b}  o \mu^+\mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b} \to t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

## 2.2 cH

		interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar{b} b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH  o zt\bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz  o  u_{ au} \bar{ u}_{ au}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	

$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^-  o Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+\mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

### 2.3 cHB

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

HH  o HH	$-5.376 \cdot 10^{-14}$	$-5.376 \cdot 10^{-14}$	0	$2.904 \cdot 10^{-16}  2.904 \cdot 10^{-16}$	0
$HH \to H \tau^+ \tau^-$	$-1.655 \cdot 10^{-20}$ -	$-1.655 \cdot 10^{-20}$	0	$8.294 \cdot 10^{-22}$ $8.294 \cdot 10^{-22}$	0
$HH  o Hbar{b}$	$-5.146 \cdot 10^{-22}$	$-5.146 \cdot 10^{-22}$	0	$5.179 \cdot 10^{-23}$ $5.179 \cdot 10^{-23}$	0
$HH \rightarrow W^+W^-$	$-4.357 \cdot 10^{-10}$ -	$-4.357 \cdot 10^{-10}$	0	$1.095 \cdot 10^{-15}$ $1.095 \cdot 10^{-15}$	0
$HH \to W^+W^-\gamma$	$-1.732 \cdot 10^{-15}$	$-1.732 \cdot 10^{-15}$	0	$2.434 \cdot 10^{-21}$ $2.434 \cdot 10^{-21}$	0
$HH \to W^+ e^- \bar{\nu}_e$	$1.559 \cdot 10^{-16}$	$1.559 \cdot 10^{-16}$	0	$1.866 \cdot 10^{-23}$ $1.866 \cdot 10^{-23}$	0
$HH \to W^- u \bar{d}$	$7.805 \cdot 10^{-17}$	$7.805 \cdot 10^{-17}$	0	$7.915 \cdot 10^{-25}$ $7.915 \cdot 10^{-25}$	0
$HH \to z\bar{b}b$	$1.127 \cdot 10^{-16}$	$1.127 \cdot 10^{-16}$	0	$8.302 \cdot 10^{-24}  8.302 \cdot 10^{-24}$	0
$HH \to zc\bar{c}$	$6.945 \cdot 10^{-17}$	$6.945 \cdot 10^{-17}$	0	$2.604 \cdot 10^{-22}$ $2.604 \cdot 10^{-22}$	0
$HH \to z t \bar{t}$	$1.546 \cdot 10^{-14}$	$1.546 \cdot 10^{-14}$	0	$8.127 \cdot 10^{-22}  8.127 \cdot 10^{-22}$	0
$HH \rightarrow zz$	$-2.903 \cdot 10^{-10}$ -	$-2.903 \cdot 10^{-10}$	0	$5.432 \cdot 10^{-16}$ $5.432 \cdot 10^{-16}$	0
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$ 0	1
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$ 0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$ 0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$ 0	1
$W^+W^-  o Hbar{b}$	$1.568 \cdot 10^{-15}$	$1.568 \cdot 10^{-15}$	0	$2.068 \cdot 10^{-21}  2.068 \cdot 10^{-21}$	0
$W^+W^- \to H c \bar{c}$	$-2.716 \cdot 10^{-18}$	$-2.716 \cdot 10^{-18}$	$7.364 \cdot 10^{-8}$	$2.901 \cdot 10^{-23}  2.901 \cdot 10^{-23}$	0
$W^+W^-  o Hd\bar{d}$	$-1.91 \cdot 10^{-21}$	$-1.91 \cdot 10^{-21}$	0.0004669	$4.741 \cdot 10^{-26}  4.741 \cdot 10^{-26}$	0
$W^+W^- \to W^+W^-$	$-1.2 \cdot 10^{-8}$	$-1.2 \cdot 10^{-8}$	0	$2.125 \cdot 10^{-13}  2.125 \cdot 10^{-13}$	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$ 0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$8.153 \cdot 10^{-25}$	$7.989 \cdot 10^{-25}$	0.02011	$3.312 \cdot 10^{-26}  3.312 \cdot 10^{-26}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0	1
$b\bar{b}  o b\bar{b}$	$4.338 \cdot 10^{-17}$	$4.338 \cdot 10^{-17}$	0	$3.047 \cdot 10^{-22}  3.047 \cdot 10^{-22}$	0
$b\bar{b}  o t\bar{t}$	$-8.811 \cdot 10^{-14}$	$-8.811 \cdot 10^{-14}$	$-1.135 \cdot 10^{-8}$	$2.339 \cdot 10^{-19}  2.339 \cdot 10^{-19}$	0
$c\bar{c} \to \mu^+ \mu^-$	$1.389 \cdot 10^{-25}$	$7.703 \cdot 10^{-26}$	0.4453	$3.057 \cdot 10^{-27}  3.057 \cdot 10^{-27}$	0
$d\bar{d} \to c\bar{c}$	$8.231 \cdot 10^{-26}$	$5.102 \cdot 10^{-28}$	0.9938	$1.792 \cdot 10^{-29}$ $1.792 \cdot 10^{-29}$	0
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$ 0	1

$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	$1.15 \cdot 10^{-29}$	1	$4.538 \cdot 10^{-31}$	$4.538 \cdot 10^{-31}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	$3.707 \cdot 10^{-32}$	1	$1.485 \cdot 10^{-33}$	$1.485 \cdot 10^{-33}$	0
$e^+e^- \rightarrow e^+e^-$	$8.482 \cdot 10^{-24}$	$1.042 \cdot 10^{-23}$	-0.229	$6.068 \cdot 10^{-38}$	$6.295 \cdot 10^{-38}$	-0.03746
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$1.901 \cdot 10^{-20}$	$1.901 \cdot 10^{-20}$	$-5.104 \cdot 10^{-6}$	$6.674 \cdot 10^{-29}$	$6.674 \cdot 10^{-29}$	$-1.199 \cdot 10^{-7}$
$t\bar{t} \to t\bar{t}$	$-6.464 \cdot 10^{-13}$	$-6.464 \cdot 10^{-13}$	0	$4.123 \cdot 10^{-16}$	$4.123 \cdot 10^{-16}$	0
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$2.919 \cdot 10^{-23}$	$3.026 \cdot 10^{-23}$	-0.03634	$2.492 \cdot 10^{-35}$	$2.493 \cdot 10^{-35}$	-0.0003764
$zz  o W^+W^-$	$-1.18 \cdot 10^{-7}$	$-1.18 \cdot 10^{-7}$	0	$5.521 \cdot 10^{-14}$	$5.521 \cdot 10^{-14}$	0

#### 2.4 cHDD

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to HH$	$1.127 \cdot 10^{-14}$	$1.127 \cdot 10^{-14}$	0	$1.278 \cdot 10^{-17}$	$1.278 \cdot 10^{-17}$	0	
$HH \to H  au^+  au^-$	$3.472 \cdot 10^{-21}$	$3.472 \cdot 10^{-21}$	0	$3.648 \cdot 10^{-23}$	$3.648 \cdot 10^{-23}$	0	
$HH  o Hbar{b}$	$1.079 \cdot 10^{-22}$	$1.079 \cdot 10^{-22}$	0	$2.278 \cdot 10^{-24}$	$2.278 \cdot 10^{-24}$	0	
$HH \to W^+W^-$	0.8637	0.8637	0	0.5076	0.5076	0	
$HH  o W^+W^-\gamma$	$1.71\cdot 10^{-7}$	$1.71\cdot 10^{-7}$	0	$6.815 \cdot 10^{-7}$	$6.815 \cdot 10^{-7}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$1.328 \cdot 10^{-8}$	$1.328 \cdot 10^{-8}$	0	$8.888 \cdot 10^{-9}$	$8.888 \cdot 10^{-9}$	0	
$HH \to W^- u \bar{d}$	$5.618 \cdot 10^{-8}$	$5.618 \cdot 10^{-8}$	0	$1.803 \cdot 10^{-9}$	$1.803 \cdot 10^{-9}$	0	
$HH  o z \bar{b} b$	$-6.016 \cdot 10^{-15}$	$-6.016 \cdot 10^{-15}$	0	$2.926 \cdot 10^{-15}$	$2.926 \cdot 10^{-15}$	0	
$HH \to zc\bar{c}$	$-1.011 \cdot 10^{-13}$	$-1.011 \cdot 10^{-13}$	0	$3.025 \cdot 10^{-14}$	$3.025 \cdot 10^{-14}$	0	
$HH \to z t \bar{t}$	$5.205 \cdot 10^{-10}$	$5.205 \cdot 10^{-10}$	0	$6.825 \cdot 10^{-13}$	$6.825 \cdot 10^{-13}$	0	
$HH \rightarrow zz$	$-2.831 \cdot 10^{-6}$	$-2.831 \cdot 10^{-6}$	0	$6.655 \cdot 10^{-8}$	$6.655 \cdot 10^{-8}$	0	
$HW^+ \to \gamma t \bar{b}$	$1.597 \cdot 10^{-8}$	$1.597 \cdot 10^{-8}$	0	$8.354 \cdot 10^{-10}$	$8.354 \cdot 10^{-10}$	0	
$HW^+ \rightarrow \gamma u \bar{d}$	$6.04 \cdot 10^{-11}$	$6.04 \cdot 10^{-11}$	0	$2.084 \cdot 10^{-13}$	$2.084 \cdot 10^{-13}$	0	
$HW^+  o u \bar d$	$-1.254 \cdot 10^{-5}$	$-1.254 \cdot 10^{-5}$	0	$1.785 \cdot 10^{-9}$	$1.785 \cdot 10^{-9}$	0	

$HW^- \to \gamma e^- \bar{\nu}_e$	$-5.668 \cdot 10^{-10}$ $-5.668 \cdot 10^{-}$	10 0	$1.709 \cdot 10^{-12}$ $1.709 \cdot 10^{-12}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$	$-4.232 \cdot 10^{-6}$ $-4.232 \cdot 10^{-}$	-6 0	$4.443 \cdot 10^{-9}$ $4.443 \cdot 10^{-9}$	0
$Hz \rightarrow \mu^{+}\mu^{-}$	$1.212 \cdot 10^{-11}$ $1.212 \cdot 10^{-11}$	0	$2.48 \cdot 10^{-13}$ $2.48 \cdot 10^{-13}$	0
$Hz  o  u_{ au} \bar{ u}_{ au}$	$2.089 \cdot 10^{-11}$ $2.089 \cdot 10^{-11}$		$4.269 \cdot 10^{-13}  4.269 \cdot 10^{-13}$	0
$Hz \to s\bar{s}$	$5.742 \cdot 10^{-11}$ $5.742 \cdot 10$	-11 0	$1.174 \cdot 10^{-12}$ $1.174 \cdot 10^{-12}$	0
$Hz \to t\bar{t}$	$-4.736 \cdot 10^{-8}$ $-4.736 \cdot 1$	$0^{-8}$ 0	$3.34 \cdot 10^{-10}$ $3.34 \cdot 10^{-10}$	0
$W^+W^- \to H b \bar b$	$8.503 \cdot 10^{-6}$ $8.503 \cdot 10^{-6}$	$0^{-6}$ 0	$2.38 \cdot 10^{-7}$ $2.38 \cdot 10^{-7}$	0
$W^+W^-  o Hc\bar{c}$	$4.192 \cdot 10^{-8}$ $4.192 \cdot 10^{-8}$	$0^{-8}$ 0	$1.075 \cdot 10^{-9}$ $1.075 \cdot 10^{-9}$	0
$W^+W^- \to H d\bar{d}$	$5.366 \cdot 10^{-7}$ $5.366 \cdot 10^{-7}$	$0^{-7}$ 0	$1.071 \cdot 10^{-8}$ $1.071 \cdot 10^{-8}$	0
$W^+W^-  o W^+W^-$	$-9.796 \cdot 10^{-5}$ $-9.796 \cdot 1$	$0^{-5}$ 0	$2.596 \cdot 10^{-6}$ $2.596 \cdot 10^{-6}$	0
$W^+W^-  o \gamma\gamma$	0.01445 $0.01445$	5 0	$3.465 \cdot 10^{-5}$ $3.465 \cdot 10^{-5}$	0
$W^+W^-  o \gamma\gamma\gamma$	$1.774 \cdot 10^{-8}$ $1.774 \cdot 10^{-8}$		$1.131 \cdot 10^{-10}$ $1.131 \cdot 10^{-10}$	0
$\bar{b}t \to \bar{d}u$	$-1.212 \cdot 10^{-5}$ $-1.212 \cdot 1$		$1.7 \cdot 10^{-9}$ $1.7 \cdot 10^{-9}$	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$3.975 \cdot 10^{-11}$ $3.975 \cdot 10$		$8.123 \cdot 10^{-13}  8.123 \cdot 10^{-13}$	
$b\bar{b} \to \mu^+ \mu^-$	$3.018 \cdot 10^{-12}$ $3.018 \cdot 10$		$5.258 \cdot 10^{-14}  5.258 \cdot 10^{-14}$	
$b\bar{b}  o  u_e \bar{ u}_e$	$1.465 \cdot 10^{-12} \qquad 1.465 \cdot 10$		$2.994 \cdot 10^{-14}$ $2.994 \cdot 10^{-14}$	0
$b\bar{b}  o b\bar{b}$	$-7.281 \cdot 10^{-11}$ $-7.281 \cdot 10^{-1}$	$0^{-11}$ 0	$3.055 \cdot 10^{-13}  3.055 \cdot 10^{-13}$	0
$b\bar{b}  o t\bar{t}$	25.95 25.95	0	0.4018 $0.4018$	0
$b\bar{t} \to e^- \bar{\nu}_e$	$-5.117 \cdot 10^{-6}$ $-5.117 \cdot 1$		$7.175 \cdot 10^{-10}  7.175 \cdot 10^{-10}$	0
$c\bar{c} \to \mu^+ \mu^-$	$1.138 \cdot 10^{-11}$ $1.138 \cdot 10$	$^{-11}$ 0	$6.058 \cdot 10^{-14}  6.058 \cdot 10^{-14}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-1.588 \cdot 10^{-6}$ $-1.588 \cdot 1$	$0^{-6}$ 0	$2.235 \cdot 10^{-10}$ $2.235 \cdot 10^{-10}$	0
$d\bar{d} \to c\bar{c}$	$1.506 \cdot 10^{-11} \qquad 1.506 \cdot 10$		$2.232 \cdot 10^{-13}$ $2.232 \cdot 10^{-13}$	_
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$7.998 \cdot 10^{-9}$ $7.998 \cdot 10^{-9}$		$1.634 \cdot 10^{-10}$ $1.634 \cdot 10^{-10}$	
$e^+\nu_e \to \mu^+\nu_\mu$	$-1.751 \cdot 10^{-5}$ $-1.751 \cdot 1$	$0^{-5}$ 0	$2.455 \cdot 10^{-9} \qquad 2.455 \cdot 10^{-9}$	0
$e^+\nu_e \to e^+\nu_e$	$-3.18 \cdot 10^{-5}$ $-3.18 \cdot 10^{-5}$		$2.027 \cdot 10^{-9}$ $2.027 \cdot 10^{-9}$	0
$e^+\tau^- \to e^+\tau^-$	$-6.85 \cdot 10^{-11}$ $-6.85 \cdot 10$	$0^{-11}$ 0	$2.985 \cdot 10^{-13}$ $2.985 \cdot 10^{-13}$	0
$e^+e^-  o \mu^+\mu^-$	$6.217 \cdot 10^{-11} \qquad 6.217 \cdot 10$	$^{-11}$ 0	$1.946 \cdot 10^{-13}$ $1.946 \cdot 10^{-13}$	
$e^+e^- \rightarrow e^+e^-$	$-3.576 \cdot 10^{-10}$ $-3.576 \cdot 10^{-10}$	$0^{-10}$ 0	$1.992 \cdot 10^{-12}$ $1.992 \cdot 10^{-12}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$1.76 \cdot 10^{-11}$ $1.76 \cdot 10^{-11}$	-11 0	$3.597 \cdot 10^{-13}  3.597 \cdot 10^{-13}$	0

$s\bar{s} \to s\bar{s}$	$-1.786 \cdot 10^{-11}  -1.786 \cdot 10^{-11}$	0	$1.649 \cdot 10^{-13}  1.649 \cdot 10^{-13}$
$t\bar{t} \to t\bar{t}$	$-1.314 \cdot 10^{-9}$ $-1.314 \cdot 10^{-9}$	0	$1.809 \cdot 10^{-11}  1.809 \cdot 10^{-11} \qquad 0$
$tg \to bW^+$	$1.889 \cdot 10^{-9}$ $1.889 \cdot 10^{-9}$	0	$1.073 \cdot 10^{-11}  1.073 \cdot 10^{-11} \qquad 0$
$u\bar{d} \to c\bar{s}$	$-1.065 \cdot 10^{-7}$ $-1.065 \cdot 10^{-7}$	0	$1.493 \cdot 10^{-11}  1.493 \cdot 10^{-11} \qquad 0$
$u\bar{u} \to \nu_e \bar{\nu}_e$	$3.494 \cdot 10^{-12}$ $3.494 \cdot 10^{-12}$	0	$7.14 \cdot 10^{-14}$ $7.14 \cdot 10^{-14}$ 0
$u\bar{u} \to u\bar{u}$	$-1.953 \cdot 10^{-10}  -1.953 \cdot 10^{-10}$	0	$8.067 \cdot 10^{-13}  8.067 \cdot 10^{-13}$
$zz \to W^+W^-$	-6.146 $-6.146$	0	0.31 $0.31$ $0$

#### 2.5 cHG

	interference				square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
HH  o HH	$1.628 \cdot 10^{-12}$	$1.628 \cdot 10^{-12}$	0	$3.211 \cdot 10^{-13}$	$3.211 \cdot 10^{-13}$	0		
$HH  o H  au^+  au^-$	$-5.507 \cdot 10^{-21}$	$-5.507 \cdot 10^{-21}$	0	$2.06 \cdot 10^{-20}$	$2.06 \cdot 10^{-20}$	0		
$HH  o Hbar{b}$	$3.146 \cdot 10^{-20}$	$3.146 \cdot 10^{-20}$	0	$4.513 \cdot 10^{-20}$	$4.513 \cdot 10^{-20}$	0		
$HH  o W^+W^-$	$2.934 \cdot 10^{-8}$	$2.934 \cdot 10^{-8}$	0	$1.529 \cdot 10^{-12}$	$1.529 \cdot 10^{-12}$	0		
$HH \to W^+W^-\gamma$	$8.839 \cdot 10^{-14}$	$8.839 \cdot 10^{-14}$	0	$3.231 \cdot 10^{-18}$	$3.231 \cdot 10^{-18}$	0		
$HH  o W^+ e^- \bar{\nu}_e$	$-1.92 \cdot 10^{-15}$	$-1.92 \cdot 10^{-15}$	0	$2.691 \cdot 10^{-22}$	$2.691 \cdot 10^{-22}$	0		
$HH \to W^- u \bar{d}$	$-2.246 \cdot 10^{-14}$	$-2.246 \cdot 10^{-14}$	0	$6.439 \cdot 10^{-20}$	$6.439 \cdot 10^{-20}$	0		
$HH \to z\bar{b}b$	$2.209 \cdot 10^{-15}$	$2.209 \cdot 10^{-15}$	0	$2.516 \cdot 10^{-19}$	$2.516 \cdot 10^{-19}$	0		
$HH \to zc\bar{c}$	$-3.635 \cdot 10^{-16}$	$-3.635 \cdot 10^{-16}$	0	$1.181 \cdot 10^{-21}$	$1.181 \cdot 10^{-21}$	0		
$HH \to z t \bar{t}$	$2.199 \cdot 10^{-13}$	$2.199 \cdot 10^{-13}$	0	$1.931 \cdot 10^{-18}$	$1.931 \cdot 10^{-18}$	0		
$HH \rightarrow zz$	$1.153 \cdot 10^{-8}$	$1.153 \cdot 10^{-8}$	0	$7.587 \cdot 10^{-13}$	$7.587 \cdot 10^{-13}$	0		
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1		
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1		
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1		
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1		
$W^+W^- \to H b \bar b$	$-8.858 \cdot 10^{-16}$	$-8.858 \cdot 10^{-16}$	0	$4.607 \cdot 10^{-19}$	$4.607 \cdot 10^{-19}$	0		

$W^+W^- \to H c \bar c$	$5.061 \cdot 10^{-16}$	$5.061 \cdot 10^{-16}$	0	$1.012 \cdot 10^{-19}$ 1	$.012 \cdot 10^{-19}$	0
$W^+W^-  o H d \bar d$	$1.963 \cdot 10^{-21}$	$1.963 \cdot 10^{-21}$	$2.604 \cdot 10^{-5}$	$1.581 \cdot 10^{-24}$	$1.581 \cdot 10^{-24}$	0
$W^+W^- \to W^+W^-$	$7.863 \cdot 10^{-6}$	$7.863 \cdot 10^{-6}$	0	$2.906 \cdot 10^{-10}$	$2.906 \cdot 10^{-10}$	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$-2.886 \cdot 10^{-23}$	$-2.889 \cdot 10^{-23}$	-0.0008915	$4.626 \cdot 10^{-23}$	$4.626 \cdot 10^{-23}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-4.032 \cdot 10^{-15}$	$-4.032 \cdot 10^{-15}$	0	$8.612 \cdot 10^{-19}$	$8.612 \cdot 10^{-19}$	0
$b\bar{b}  o t\bar{t}$	$2.606 \cdot 10^{-13}$	$2.606 \cdot 10^{-13}$	0	$3.267 \cdot 10^{-16}$	$3.267 \cdot 10^{-16}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-2.727 \cdot 10^{-24}$	$-2.712 \cdot 10^{-24}$	0.005365	$4.27 \cdot 10^{-24}$	$4.27 \cdot 10^{-24}$	0
$d\bar{d} \to c\bar{c}$	$2.7 \cdot 10^{-26}$	$-1.441 \cdot 10^{-26}$	1.534	$2.503 \cdot 10^{-26}$	$2.503 \cdot 10^{-26}$	0
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.195 \cdot 10^{-25}$	$-5.195 \cdot 10^{-28}$	0.999	$7.567 \cdot 10^{-28}$	$7.567 \cdot 10^{-28}$	0
$e^+e^- \to \mu^+\mu^-$	$-3.03 \cdot 10^{-26}$	$-1.34 \cdot 10^{-30}$	1	$2.074 \cdot 10^{-30}$	$2.074 \cdot 10^{-30}$	0
$e^+e^- \rightarrow e^+e^-$	$-6.805 \cdot 10^{-22}$	$-6.744 \cdot 10^{-22}$	0.009006	$1.648 \cdot 10^{-34}$	$1.646 \cdot 10^{-34}$	0.0009157
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-1.601 \cdot 10^{-18}$	$-1.601 \cdot 10^{-18}$	$3.061 \cdot 10^{-6}$	$1.762 \cdot 10^{-25}$	$1.762 \cdot 10^{-25}$	0
$t\bar{t} \to t\bar{t}$	$6.179 \cdot 10^{-11}$	$6.179 \cdot 10^{-11}$	0	$3.162 \cdot 10^{-12}$	$3.162 \cdot 10^{-12}$	0
$tg \rightarrow bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-4.023 \cdot 10^{-20}$	$-3.964 \cdot 10^{-20}$	0.01476	$7.166 \cdot 10^{-31}$	$7.166 \cdot 10^{-31}$	$1.32 \cdot 10^{-5}$
$zz \to W^+W^-$	$4.409 \cdot 10^{-6}$	$4.409 \cdot 10^{-6}$	0	$7.711 \cdot 10^{-11}$	$7.711 \cdot 10^{-11}$	0

#### 2.6 cHW

$HH  o Hbar{b}$	$-7.853 \cdot 10^{-22}  -7.853 \cdot 10^{-22}$	0	$2.812 \cdot 10^{-23}$ $2.812 \cdot 10^{-23}$	0
$HH \rightarrow W^+W^-$	$-7.324 \cdot 10^{-10}$ $-7.324 \cdot 10^{-10}$	0	$9.526 \cdot 10^{-16}$ $9.526 \cdot 10^{-16}$	0
$HH \to W^+W^-\gamma$	$-2.206 \cdot 10^{-15}  -2.206 \cdot 10^{-15}$	0	$2.013 \cdot 10^{-21}  2.013 \cdot 10^{-21}$	0
$HH \rightarrow W^+ e^- \bar{\nu}_e$	$4.793 \cdot 10^{-17}$ $4.793 \cdot 10^{-17}$	0	$1.677 \cdot 10^{-25}$ $1.677 \cdot 10^{-25}$	0
$HH \to W^- u \bar{d}$	$5.605 \cdot 10^{-16}$ $5.605 \cdot 10^{-16}$	0	$4.012 \cdot 10^{-23}  4.012 \cdot 10^{-23}$	0
$HH  o z \bar{b} b$	$-5.515 \cdot 10^{-17}  -5.515 \cdot 10^{-17}$	0	$1.567 \cdot 10^{-22}$ $1.567 \cdot 10^{-22}$	0
$HH \to zc\bar{c}$	$9.074 \cdot 10^{-18}$ $9.074 \cdot 10^{-18}$	0	$7.355 \cdot 10^{-25}$ $7.355 \cdot 10^{-25}$	0
$HH \to z t \bar{t}$	$-5.488 \cdot 10^{-15}  -5.488 \cdot 10^{-15}$	0	$1.203 \cdot 10^{-21}$ $1.203 \cdot 10^{-21}$	0
$HH \rightarrow zz$	$-2.879 \cdot 10^{-10}  -2.879 \cdot 10^{-10}$	0	$4.727 \cdot 10^{-16}  4.727 \cdot 10^{-16}$	0
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$ 0	1	$2.873 \cdot 10^{-43}$ 0	1
$Hz \to \mu^+ \mu^-$	$5.756 \cdot 10^{-26}$ 0	1	$6.401 \cdot 10^{-42}$ 0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$ 0	1	$1.618 \cdot 10^{-41}$ 0	1
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	1	$3.776 \cdot 10^{-41}$ 0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$ 0	1	$1.251 \cdot 10^{-37}$ 0	1
$W^+W^- \to H b \bar b$	$2.211 \cdot 10^{-17}$ $2.211 \cdot 10^{-17}$	0	$2.87 \cdot 10^{-22} \qquad 2.87 \cdot 10^{-22}$	0
$W^+W^- \to Hc\bar{c}$	$-1.263 \cdot 10^{-17}  -1.263 \cdot 10^{-17}$	0	$6.305 \cdot 10^{-23}  6.305 \cdot 10^{-23}$	0
$W^+W^-  o Hd\bar{d}$	$-4.894 \cdot 10^{-23}  -4.899 \cdot 10^{-23}$	-0.001046	$9.851 \cdot 10^{-28}  9.851 \cdot 10^{-28}$	0
$W^+W^- \to W^+W^-$	$-1.963 \cdot 10^{-7}$ $-1.963 \cdot 10^{-7}$	0	$1.811 \cdot 10^{-13}$ $1.811 \cdot 10^{-13}$	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$ 0	1	$2.077 \cdot 10^{-41}$ 0	1
$b\bar{b} \to \mu^+\mu^-$	$7.468 \cdot 10^{-25} \qquad 7.21 \cdot 10^{-25}$	0.03445	$2.882 \cdot 10^{-26}$ $2.882 \cdot 10^{-26}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	1	$5.043 \cdot 10^{-42}$ 0	1
$b\bar{b}  o b\bar{b}$	$1.006 \cdot 10^{-16}$ $1.006 \cdot 10^{-16}$	0	$5.366 \cdot 10^{-22}$ $5.366 \cdot 10^{-22}$	0
$b\bar{b}  o t\bar{t}$	$-6.504 \cdot 10^{-15}  -6.504 \cdot 10^{-15}$	0	$2.035 \cdot 10^{-19}  2.035 \cdot 10^{-19}$	0
$c\bar{c} \to \mu^+ \mu^-$	$5.307 \cdot 10^{-26} \qquad 6.77 \cdot 10^{-26}$	-0.2757	$2.661 \cdot 10^{-27}$ $2.661 \cdot 10^{-27}$	0
$d\bar{d} \to c\bar{c}$	$4.177 \cdot 10^{-26} \qquad 3.597 \cdot 10^{-28}$	0.9914	$1.559 \cdot 10^{-29}$ $1.559 \cdot 10^{-29}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	1	$1.521 \cdot 10^{-36}$ 0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	1	$5.459 \cdot 10^{-39}$ 0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25} \qquad 1.297 \cdot 10^{-29}$	1	$4.715 \cdot 10^{-31}  4.715 \cdot 10^{-31}$	0
$e^+e^- \to \mu^+\mu^-$	$-3.029 \cdot 10^{-26}  3.345 \cdot 10^{-32}$	1	$1.292 \cdot 10^{-33}$ $1.292 \cdot 10^{-33}$	0

$e^+e^- \rightarrow e^+e^-$	$1.071 \cdot 10^{-23}$	$1.683 \cdot 10^{-23}$	-0.5725	$9.907 \cdot 10^{-38}$	$1.026 \cdot 10^{-37}$	-0.03539
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$3.995 \cdot 10^{-20}$	$3.996 \cdot 10^{-20}$	-0.0001227	$1.098 \cdot 10^{-28}$	$1.098 \cdot 10^{-28}$	$-9.108 \cdot 10^{-8}$
$t\bar{t} \to t\bar{t}$	$-1.542 \cdot 10^{-12}$	$-1.542 \cdot 10^{-12}$	0	$1.97 \cdot 10^{-15}$	$1.97 \cdot 10^{-15}$	0
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$3.958 \cdot 10^{-22}$	$9.894 \cdot 10^{-22}$	-1.5	$4.463 \cdot 10^{-34}$	$4.465 \cdot 10^{-34}$	-0.0003533
$zz \to W^+W^-$	$-1.1 \cdot 10^{-7}$	$-1.1 \cdot 10^{-7}$	0	$4.805 \cdot 10^{-14}$	$4.805 \cdot 10^{-14}$	0

#### 2.7 cHWB

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to HH$	$1.122 \cdot 10^{-13}$	$1.122 \cdot 10^{-13}$	0	$1.265 \cdot 10^{-15}$	$1.265 \cdot 10^{-15}$	0	
$HH \to H \tau^+ \tau^-$	$3.455 \cdot 10^{-20}$	$3.455 \cdot 10^{-20}$	0	$3.613 \cdot 10^{-21}$	$3.613 \cdot 10^{-21}$	0	
$HH  o Hbar{b}$	$1.074 \cdot 10^{-21}$	$1.074 \cdot 10^{-21}$	0	$2.256 \cdot 10^{-22}$	$2.256 \cdot 10^{-22}$	0	
$HH \to W^+W^-$	1.907	1.907	0	2.475	2.475	0	
$HH  o W^+W^-\gamma$	$3.776 \cdot 10^{-7}$	$3.776 \cdot 10^{-7}$	0	$3.323 \cdot 10^{-6}$	$3.323 \cdot 10^{-6}$	0	
$HH  o W^+ e^- \bar{\nu}_e$	$2.933 \cdot 10^{-8}$	$2.933 \cdot 10^{-8}$	0	$4.334 \cdot 10^{-8}$	$4.334 \cdot 10^{-8}$	0	
$HH \to W^- u \bar{d}$	$1.24\cdot 10^{-7}$	$1.24\cdot 10^{-7}$	0	$8.792 \cdot 10^{-9}$	$8.792 \cdot 10^{-9}$	0	
$HH  o z\bar{b}b$	$-7.554 \cdot 10^{-15}$	$-7.554 \cdot 10^{-15}$	0	$4.364 \cdot 10^{-15}$	$4.364 \cdot 10^{-15}$	0	
$HH \to zc\bar{c}$	$-1.236 \cdot 10^{-13}$	$-1.236 \cdot 10^{-13}$	0	$4.511 \cdot 10^{-14}$	$4.511 \cdot 10^{-14}$	0	
$HH \to z t \bar{t}$	$5.405 \cdot 10^{-10}$	$5.405 \cdot 10^{-10}$	0	$6.904 \cdot 10^{-13}$	$6.904 \cdot 10^{-13}$	0	
$HH \rightarrow zz$	$-3.457 \cdot 10^{-6}$	$-3.457 \cdot 10^{-6}$	0	$9.924 \cdot 10^{-8}$	$9.924 \cdot 10^{-8}$	0	
$HW^+ \to \gamma t \bar{b}$	$3.527 \cdot 10^{-8}$	$3.527 \cdot 10^{-8}$	0	$4.073 \cdot 10^{-9}$	$4.073 \cdot 10^{-9}$	0	
$HW^+  o \gamma u \bar{d}$	$1.334 \cdot 10^{-10}$	$1.334 \cdot 10^{-10}$	0	$1.016 \cdot 10^{-12}$	$1.016 \cdot 10^{-12}$	0	
$HW^+ \to u\bar{d}$	$-2.768 \cdot 10^{-5}$	$-2.768 \cdot 10^{-5}$	0	$8.704 \cdot 10^{-9}$	$8.704 \cdot 10^{-9}$	0	
$HW^-  o \gamma e^- \bar{\nu}_e$	$-1.252 \cdot 10^{-9}$	$-1.252 \cdot 10^{-9}$	0	$8.333 \cdot 10^{-12}$	$8.333 \cdot 10^{-12}$	0	
$HW^-  o \mu^- \bar{\nu}_\mu$	$-9.345 \cdot 10^{-6}$	$-9.345 \cdot 10^{-6}$	0	$2.166 \cdot 10^{-8}$	$2.166 \cdot 10^{-8}$	0	

$Hz  o \mu^+\mu^-$	$1.48 \cdot 10^{-11}$	$1.48 \cdot 10^{-11}$	0	$3.699 \cdot 10^{-13}  3.699 \cdot 10^{-13}$	0
$Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$	$2.551 \cdot 10^{-11}$	$2.551 \cdot 10^{-11}$	0	$6.368 \cdot 10^{-13}  6.368 \cdot 10^{-13}$	0
$Hz \to s\bar{s}$	$7.012 \cdot 10^{-11}$	$7.012 \cdot 10^{-11}$	0	$1.751 \cdot 10^{-12}$ $1.751 \cdot 10^{-12}$	0
$Hz \to t\bar{t}$	$6.869 \cdot 10^{-8}$	$6.869 \cdot 10^{-8}$	0	$9.356 \cdot 10^{-10}$ $9.356 \cdot 10^{-10}$	0
$W^+W^- \to H b \bar b$	$1.878 \cdot 10^{-5}$	$1.878 \cdot 10^{-5}$	0	$1.161 \cdot 10^{-6}$ $1.161 \cdot 10^{-6}$	0
$W^+W^-  o Hc\bar{c}$	$9.259 \cdot 10^{-8}$	$9.259 \cdot 10^{-8}$	0	$5.241 \cdot 10^{-9}$ $5.241 \cdot 10^{-9}$	0
$W^+W^- \to H d\bar{d}$	$1.185 \cdot 10^{-6}$	$1.185 \cdot 10^{-6}$	0	$5.223 \cdot 10^{-8}$ $5.223 \cdot 10^{-8}$	0
$W^+W^-  o W^+W^-$	-0.0001196	-0.0001196	0	$3.871 \cdot 10^{-6}$ $3.871 \cdot 10^{-6}$	0
$W^+W^- \to \gamma\gamma$	0.03191	0.03191	0	$0.000169 \qquad 0.000169$	0
$W^+W^-  o \gamma\gamma\gamma$	$3.918 \cdot 10^{-8}$	$3.918 \cdot 10^{-8}$	0	$5.515 \cdot 10^{-10}$ $5.515 \cdot 10^{-10}$	0
$\bar{b}t \to \bar{d}u$	$-2.677 \cdot 10^{-5}$	$-2.677 \cdot 10^{-5}$	0	$8.29 \cdot 10^{-9}$ $8.29 \cdot 10^{-9}$	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$4.855 \cdot 10^{-11}$	$4.855 \cdot 10^{-11}$	0	$1.212 \cdot 10^{-12}  1.212 \cdot 10^{-12}$	0
$b\bar{b} \to \mu^+\mu^-$	$3.685 \cdot 10^{-12}$	$3.685 \cdot 10^{-12}$	0	$7.842 \cdot 10^{-14}  7.842 \cdot 10^{-14}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$1.789 \cdot 10^{-12}$	$1.789 \cdot 10^{-12}$	0	$4.466 \cdot 10^{-14}  4.466 \cdot 10^{-14}$	0
$b\bar{b}  o b\bar{b}$	$-8.893 \cdot 10^{-11}$	$-8.893 \cdot 10^{-11}$	0	$4.557 \cdot 10^{-13}  4.557 \cdot 10^{-13}$	0
$b\bar{b}  o t\bar{t}$	57.31	57.31	0	1.959 $1.959$	0
$b\bar{t} \to e^- \bar{\nu}_e$	$-1.13 \cdot 10^{-5}$	$-1.13 \cdot 10^{-5}$	0	$3.498 \cdot 10^{-9}$ $3.498 \cdot 10^{-9}$	0
$c\bar{c} \to \mu^+ \mu^-$	$1.39 \cdot 10^{-11}$	$1.39 \cdot 10^{-11}$	0	$9.036 \cdot 10^{-14}  9.036 \cdot 10^{-14}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-3.506 \cdot 10^{-6}$	$-3.506 \cdot 10^{-6}$	0	$1.09 \cdot 10^{-9}$ $1.09 \cdot 10^{-9}$	0
$d\bar{d} \to c\bar{c}$	$1.839 \cdot 10^{-11}$	$1.839 \cdot 10^{-11}$	0	$3.33 \cdot 10^{-13}$ $3.33 \cdot 10^{-13}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$9.768 \cdot 10^{-9}$	$9.768 \cdot 10^{-9}$	0	$2.438 \cdot 10^{-10}$ $2.438 \cdot 10^{-10}$	0
$e^+\nu_e \to \mu^+\nu_\mu$	$-3.867 \cdot 10^{-5}$	$-3.867 \cdot 10^{-5}$	0	$1.197 \cdot 10^{-8}$ $1.197 \cdot 10^{-8}$	0
$e^+\nu_e \to e^+\nu_e$	$-7.024 \cdot 10^{-5}$	$-7.024 \cdot 10^{-5}$	0	$9.54 \cdot 10^{-9}$ $9.54 \cdot 10^{-9}$	0
$e^+\tau^- \to e^+\tau^-$	$-8.366 \cdot 10^{-11}$	$-8.366 \cdot 10^{-11}$	0	$4.452 \cdot 10^{-13}  4.452 \cdot 10^{-13}$	0
$e^+e^- \to \mu^+\mu^-$	$7.593 \cdot 10^{-11}$	$7.593 \cdot 10^{-11}$	0	$2.903 \cdot 10^{-13}$ $2.903 \cdot 10^{-13}$	0
$e^+e^- \rightarrow e^+e^-$	$-4.367 \cdot 10^{-10}$	$-4.367 \cdot 10^{-10}$	0	$2.971 \cdot 10^{-12}  2.971 \cdot 10^{-12}$	0
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$2.15 \cdot 10^{-11}$	$2.15 \cdot 10^{-11}$	0	$5.365 \cdot 10^{-13}$ $5.365 \cdot 10^{-13}$	0
$s\bar{s} \to s\bar{s}$	$-2.181 \cdot 10^{-11}$	$-2.181 \cdot 10^{-11}$	0	$2.46 \cdot 10^{-13} \qquad 2.46 \cdot 10^{-13}$	0
$t\bar{t} \to t\bar{t}$	$-1.604 \cdot 10^{-9}$	$-1.604 \cdot 10^{-9}$	0	$2.693 \cdot 10^{-11}  2.693 \cdot 10^{-11}$	0

$tg \to bW^+$	$4.172 \cdot 10^{-9}$ $4.172 \cdot 10^{-9}$	0	$5.23 \cdot 10^{-11}$ $5.23 \cdot 10^{-11}$	0
$u\bar{d} \to c\bar{s}$	$-2.351 \cdot 10^{-7}$ $-2.351 \cdot 10^{-7}$	0	$7.278 \cdot 10^{-11}  7.278 \cdot 10^{-11}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.267 \cdot 10^{-12}$ $4.267 \cdot 10^{-12}$	0	$1.065 \cdot 10^{-13}$ $1.065 \cdot 10^{-13}$	0
$u\bar{u} \to u\bar{u}$	$-2.385 \cdot 10^{-10}  -2.385 \cdot 10^{-10}$	0	$1.203 \cdot 10^{-12}  1.203 \cdot 10^{-12}$	0
$zz \to W^+W^-$	-13.57 $-13.57$	0	1.512 $1.512$	0

## 2.8 cHd

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to z\bar{b}b$	$-1.689 \cdot 10^{-15}$	$-1.689 \cdot 10^{-15}$	0	$2.326 \cdot 10^{-16}$	$2.326 \cdot 10^{-16}$	0
$HH \to zc\bar{c}$	$-2.851 \cdot 10^{-14}$	$-2.851 \cdot 10^{-14}$	0	$2.405 \cdot 10^{-15}$	$2.405 \cdot 10^{-15}$	0
$HH \to zt\bar{t}$	$1.739 \cdot 10^{-10}$	$1.739 \cdot 10^{-10}$	0	$8.128 \cdot 10^{-14}$	$8.128 \cdot 10^{-14}$	0
$HH \rightarrow zz$	$-7.981 \cdot 10^{-7}$	$-7.981 \cdot 10^{-7}$	0	$5.29 \cdot 10^{-9}$	$5.29 \cdot 10^{-9}$	0
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \to \mu^+\mu^-$	$3.416 \cdot 10^{-12}$	$3.416 \cdot 10^{-12}$	0	$1.971 \cdot 10^{-14}$	$1.971 \cdot 10^{-14}$	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$5.889 \cdot 10^{-12}$	$5.889 \cdot 10^{-12}$	0	$3.393 \cdot 10^{-14}$	$3.393 \cdot 10^{-14}$	0
$Hz \to s\bar{s}$	$1.619 \cdot 10^{-11}$	$1.619 \cdot 10^{-11}$	0	$9.332 \cdot 10^{-14}$	$9.332 \cdot 10^{-14}$	0
$Hz \to t\bar{t}$	$-4.95 \cdot 10^{-8}$	$-4.95 \cdot 10^{-8}$	0	$8.996 \cdot 10^{-11}$	$8.996 \cdot 10^{-11}$	0
$W^+W^-  o Hb\bar{b}$	$6.812 \cdot 10^{-11}$	$6.812 \cdot 10^{-11}$	0	$3.091 \cdot 10^{-14}$	$3.091 \cdot 10^{-14}$	0
$W^+W^- \to H c \bar c$	$-7.603 \cdot 10^{-12}$	$-7.603 \cdot 10^{-12}$	0	$5.664 \cdot 10^{-14}$	$5.664 \cdot 10^{-14}$	0
$W^+W^-  o Hd\bar{d}$	$-4.629 \cdot 10^{-11}$	$-4.629 \cdot 10^{-11}$	0	$8.743 \cdot 10^{-13}$	$8.743 \cdot 10^{-13}$	0
$W^+W^-  o W^+W^-$	$-2.762 \cdot 10^{-5}$	$-2.762 \cdot 10^{-5}$	0	$2.063 \cdot 10^{-7}$	$2.063 \cdot 10^{-7}$	0
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.121 \cdot 10^{-11}$	$1.121 \cdot 10^{-11}$	0	$6.456 \cdot 10^{-14}$	$6.456 \cdot 10^{-14}$	0
$b\bar{b} \rightarrow \mu^+ \mu^-$	$8.507 \cdot 10^{-13}$	$8.507 \cdot 10^{-13}$	0	$4.179 \cdot 10^{-15}$	$4.179 \cdot 10^{-15}$	0
$b\bar{b} \to \nu_e \bar{\nu}_e$	$4.13 \cdot 10^{-13}$	$4.13 \cdot 10^{-13}$	0	$2.38 \cdot 10^{-15}$	$2.38 \cdot 10^{-15}$	0
$b\bar{b}  o b\bar{b}$	$-2.053 \cdot 10^{-11}$	$-2.053 \cdot 10^{-11}$	0	$2.428 \cdot 10^{-14}$	$2.428 \cdot 10^{-14}$	0
$b\bar{b}  o t\bar{t}$	$4.716 \cdot 10^{-8}$	$4.716 \cdot 10^{-8}$	0	$4.222 \cdot 10^{-14}$	$4.222 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$3.209 \cdot 10^{-12}$	$3.209 \cdot 10^{-12}$	0	$4.815 \cdot 10^{-15}$	$4.815 \cdot 10^{-15}$	0

$d\bar{d} \to c\bar{c}$	$4.245 \cdot 10^{-12}$	$4.245 \cdot 10^{-12}$	0	$1.774 \cdot 10^{-14}$	$1.774 \cdot 10^{-14}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$2.255 \cdot 10^{-9}$	$2.255 \cdot 10^{-9}$	0	$1.299 \cdot 10^{-11}$	$1.299 \cdot 10^{-11}$	0
$e^+\nu_e \to e^+\nu_e$	$2.895 \cdot 10^{-9}$	$2.895 \cdot 10^{-9}$	0	$9.781 \cdot 10^{-12}$	$9.781 \cdot 10^{-12}$	0
$e^+\tau^- \to e^+\tau^-$	$-1.931 \cdot 10^{-11}$	$-1.931 \cdot 10^{-11}$	0	$2.372 \cdot 10^{-14}$	$2.372 \cdot 10^{-14}$	0
$e^+e^- \to \mu^+\mu^-$	$1.753 \cdot 10^{-11}$	$1.753 \cdot 10^{-11}$	0	$1.547 \cdot 10^{-14}$	$1.547 \cdot 10^{-14}$	0
$e^+e^- \rightarrow e^+e^-$	$-1.008 \cdot 10^{-10}$	$-1.008 \cdot 10^{-10}$	0	$1.583 \cdot 10^{-13}$	$1.583 \cdot 10^{-13}$	0
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$4.962 \cdot 10^{-12}$	$4.962 \cdot 10^{-12}$	0	$2.859 \cdot 10^{-14}$	$2.859 \cdot 10^{-14}$	0
$s\bar{s} \to s\bar{s}$	$-5.034 \cdot 10^{-12}$	$-5.034 \cdot 10^{-12}$	0	$1.311 \cdot 10^{-14}$	$1.311 \cdot 10^{-14}$	0
$t\bar{t} \to t\bar{t}$	$-3.706 \cdot 10^{-10}$	$-3.706 \cdot 10^{-10}$	0	$1.438 \cdot 10^{-12}$	$1.438 \cdot 10^{-12}$	0
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$9.85 \cdot 10^{-13}$	$9.85 \cdot 10^{-13}$	0	$5.675 \cdot 10^{-15}$	$5.675 \cdot 10^{-15}$	0
$u\bar{u} \to u\bar{u}$	$-5.506 \cdot 10^{-11}$	$-5.506 \cdot 10^{-11}$	0	$6.411 \cdot 10^{-14}$	$6.411 \cdot 10^{-14}$	0

## **2.9 cHe**

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH  o z \bar{b} b$	$2.195 \cdot 10^{-13}$	$2.195 \cdot 10^{-13}$	0	$6.72 \cdot 10^{-16}$	$6.72 \cdot 10^{-16}$	0
$HH \to zc\bar{c}$	$-1.1 \cdot 10^{-13}$	$-1.1 \cdot 10^{-13}$	0	$9.455 \cdot 10^{-17}$	$9.455 \cdot 10^{-17}$	0
$HH \to z t \bar t$	$-6.643 \cdot 10^{-11}$	$-6.643 \cdot 10^{-11}$	0	$1.749 \cdot 10^{-13}$	$1.749 \cdot 10^{-13}$	0
$HH \rightarrow zz$	$-8.535 \cdot 10^{-7}$	$-8.535 \cdot 10^{-7}$	0	$6.168 \cdot 10^{-9}$	$6.168 \cdot 10^{-9}$	0
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
$Hz \to \mu^+\mu^-$	$3.028 \cdot 10^{-12}$	$3.028 \cdot 10^{-12}$	0	$1.771 \cdot 10^{-14}$	$1.771 \cdot 10^{-14}$	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$7.668 \cdot 10^{-12}$	$7.668 \cdot 10^{-12}$	0	$4.478 \cdot 10^{-14}$	$4.478 \cdot 10^{-14}$	0
$Hz \to s\bar{s}$	$1.788 \cdot 10^{-11}$	$1.788 \cdot 10^{-11}$	0	$1.045 \cdot 10^{-13}$	$1.045 \cdot 10^{-13}$	0
$Hz \to t\bar{t}$	$-4.195 \cdot 10^{-8}$	$-4.195 \cdot 10^{-8}$	0	$9.244 \cdot 10^{-11}$	$9.244 \cdot 10^{-11}$	0
$W^+W^- \to Hb\bar{b}$	$-4.485 \cdot 10^{-11}$	$-4.485 \cdot 10^{-11}$	0	$8.039 \cdot 10^{-14}$	$8.039 \cdot 10^{-14}$	0
$W^+W^-  o Hc\bar{c}$	$-1.082 \cdot 10^{-11}$	$-1.082 \cdot 10^{-11}$	0	$1.397 \cdot 10^{-13}$	$1.397 \cdot 10^{-13}$	0
$W^+W^- \to H d\bar{d}$	$2.692 \cdot 10^{-12}$	$2.692 \cdot 10^{-12}$	0	$1.167 \cdot 10^{-14}$	$1.167 \cdot 10^{-14}$	0

$W^+W^- \to W^+W^-$	-0.001581	-0.001581	0	$9.088 \cdot 10^{-6}$	$9.088 \cdot 10^{-6}$	0
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$9.839 \cdot 10^{-12}$	$9.839 \cdot 10^{-12}$	0	$5.746 \cdot 10^{-14}$	$5.746 \cdot 10^{-14}$	0
$b\bar{b} \rightarrow \mu^+ \mu^-$	$1.353 \cdot 10^{-12}$	$1.353 \cdot 10^{-12}$	0	$4.8 \cdot 10^{-15}$	$4.8 \cdot 10^{-15}$	0
$b\bar{b}  ightarrow  u_e \bar{\nu}_e$	$2.389 \cdot 10^{-12}$	$2.389 \cdot 10^{-12}$	0	$1.395 \cdot 10^{-14}$	$1.395 \cdot 10^{-14}$	0
$b\bar{b}  o b\bar{b}$	$-4.373 \cdot 10^{-10}$	$-4.373 \cdot 10^{-10}$	0	$4.784 \cdot 10^{-13}$	$4.784 \cdot 10^{-13}$	0
$b\bar{b}  o t\bar{t}$	$5.99 \cdot 10^{-10}$	$5.99 \cdot 10^{-10}$	0	$3.63 \cdot 10^{-14}$	$3.63 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-7.695 \cdot 10^{-13}$	$-7.695 \cdot 10^{-13}$	0	$3.552 \cdot 10^{-15}$	$3.552 \cdot 10^{-15}$	0
$d\bar{d} \to c\bar{c}$	$2.178 \cdot 10^{-12}$	$2.178 \cdot 10^{-12}$	0	$1.25 \cdot 10^{-14}$	$1.25 \cdot 10^{-14}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$7.207 \cdot 10^{-7}$	$7.207 \cdot 10^{-7}$	0	$4.209 \cdot 10^{-9}$	$4.209 \cdot 10^{-9}$	0
$e^+\nu_e \to e^+\nu_e$	$4.293 \cdot 10^{-9}$	$4.293 \cdot 10^{-9}$	0	$1.511 \cdot 10^{-11}$	$1.511 \cdot 10^{-11}$	0
$e^+\tau^- \to e^+\tau^-$	$-2.73 \cdot 10^{-11}$	$-2.73 \cdot 10^{-11}$	0	$3.586 \cdot 10^{-14}$	$3.586 \cdot 10^{-14}$	0
$e^+e^- \to \mu^+\mu^-$	$-1.594 \cdot 10^{-12}$	$-1.594 \cdot 10^{-12}$	0	$8.914 \cdot 10^{-15}$	$8.914 \cdot 10^{-15}$	0
$e^+e^- \rightarrow e^+e^-$	$-3.224 \cdot 10^{-10}$	$-3.224 \cdot 10^{-10}$	0	$7.044 \cdot 10^{-13}$	$7.044 \cdot 10^{-13}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$3.135 \cdot 10^{-12}$	$3.135 \cdot 10^{-12}$	0	$1.831 \cdot 10^{-14}$	$1.831 \cdot 10^{-14}$	0
$s\bar{s} \to s\bar{s}$	$-2.58 \cdot 10^{-10}$	$-2.58 \cdot 10^{-10}$	0	$2.586 \cdot 10^{-13}$	$2.586 \cdot 10^{-13}$	0
$t\bar{t} \to t\bar{t}$	$-8.83 \cdot 10^{-10}$	$-8.83 \cdot 10^{-10}$	0	$8.14 \cdot 10^{-12}$	$8.14 \cdot 10^{-12}$	0
$tg \rightarrow bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$2.209 \cdot 10^{-12}$	$2.209 \cdot 10^{-12}$	0	$1.29 \cdot 10^{-14}$	$1.29 \cdot 10^{-14}$	0
$u\bar{u} \to u\bar{u}$	$-3.123 \cdot 10^{-8}$	$-3.123 \cdot 10^{-8}$	0	$2.116 \cdot 10^{-10}$	$2.116 \cdot 10^{-10}$	0

## 2.10 cHl1

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to z\bar{b}b$	$-1.712 \cdot 10^{-15}$	$-1.712 \cdot 10^{-15}$	0	$2.39 \cdot 10^{-16}$	$2.39 \cdot 10^{-16}$	0	
$HH \to z c \bar{c}$	$-2.89 \cdot 10^{-14}$	$-2.89 \cdot 10^{-14}$	0	$2.471 \cdot 10^{-15}$	$2.471 \cdot 10^{-15}$	0	
$HH \to z t \bar{t}$	$1.763 \cdot 10^{-10}$	$1.763 \cdot 10^{-10}$	0	$8.351 \cdot 10^{-14}$	$8.351 \cdot 10^{-14}$	0	
$HH \rightarrow zz$	$-8.089 \cdot 10^{-7}$	$-8.089 \cdot 10^{-7}$	0	$5.435 \cdot 10^{-9}$	$5.435 \cdot 10^{-9}$	0	
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1	

$Hz \to \mu^+\mu^-$	$3.463 \cdot 10^{-12}$	$3.463 \cdot 10^{-12}$	0	$2.025 \cdot 10^{-14}$	$2.025 \cdot 10^{-14}$	0
$Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$	$5.97 \cdot 10^{-12}$	$5.97 \cdot 10^{-12}$	0	$3.486 \cdot 10^{-14}$	$3.486 \cdot 10^{-14}$	0
$Hz \to s\bar{s}$	$1.641 \cdot 10^{-11}$	$1.641 \cdot 10^{-11}$	0	$9.588 \cdot 10^{-14}$	$9.588 \cdot 10^{-14}$	0
Hz  o t ar t	$-5.017 \cdot 10^{-8}$	$-5.017 \cdot 10^{-8}$	0	$9.243 \cdot 10^{-11}$	$9.243 \cdot 10^{-11}$	0
$W^+W^- \to H b \bar b$	$6.905 \cdot 10^{-11}$	$6.905 \cdot 10^{-11}$	0	$3.176 \cdot 10^{-14}$	$3.176 \cdot 10^{-14}$	0
$W^+W^- \to Hc\bar{c}$	$-7.707 \cdot 10^{-12}$	$-7.707 \cdot 10^{-12}$	0	$5.819 \cdot 10^{-14}$	$5.819 \cdot 10^{-14}$	0
$W^+W^- \to H d\bar{d}$	$-4.692 \cdot 10^{-11}$	$-4.692 \cdot 10^{-11}$	0	$8.983 \cdot 10^{-13}$	$8.983 \cdot 10^{-13}$	0
$W^+W^- \to W^+W^-$	$-2.8 \cdot 10^{-5}$	$-2.8 \cdot 10^{-5}$	0	$2.12 \cdot 10^{-7}$	$2.12\cdot 10^{-7}$	0
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.136 \cdot 10^{-11}$	$1.136 \cdot 10^{-11}$	0	$6.634 \cdot 10^{-14}$	$6.634 \cdot 10^{-14}$	0
$b\bar{b}  o \mu^+ \mu^-$	$8.623 \cdot 10^{-13}$	$8.623 \cdot 10^{-13}$	0	$4.294 \cdot 10^{-15}$	$4.294 \cdot 10^{-15}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$4.187 \cdot 10^{-13}$	$4.187 \cdot 10^{-13}$	0	$2.445 \cdot 10^{-15}$	$2.445 \cdot 10^{-15}$	0
$b\bar{b}  o b\bar{b}$	$-2.081 \cdot 10^{-11}$	$-2.081 \cdot 10^{-11}$	0	$2.495 \cdot 10^{-14}$	$2.495 \cdot 10^{-14}$	0
$b\bar{b}  o t\bar{t}$	$4.781 \cdot 10^{-8}$	$4.781 \cdot 10^{-8}$	0	$4.338 \cdot 10^{-14}$	$4.338 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$3.253 \cdot 10^{-12}$	$3.253 \cdot 10^{-12}$	0	$4.947 \cdot 10^{-15}$	$4.947 \cdot 10^{-15}$	0
$d\bar{d} \to c\bar{c}$	$4.303 \cdot 10^{-12}$	$4.303 \cdot 10^{-12}$	0	$1.823 \cdot 10^{-14}$	$1.823 \cdot 10^{-14}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$2.286 \cdot 10^{-9}$	$2.286 \cdot 10^{-9}$	0	$1.335 \cdot 10^{-11}$	$1.335 \cdot 10^{-11}$	0
$e^+\nu_e \to e^+\nu_e$	$2.934 \cdot 10^{-9}$	$2.934 \cdot 10^{-9}$	0	$1.005 \cdot 10^{-11}$	$1.005 \cdot 10^{-11}$	0
$e^+\tau^- \to e^+\tau^-$	$-1.958 \cdot 10^{-11}$	$-1.958 \cdot 10^{-11}$	0	$2.437 \cdot 10^{-14}$	$2.437 \cdot 10^{-14}$	0
$e^+e^- \to \mu^+\mu^-$	$1.777 \cdot 10^{-11}$	$1.777 \cdot 10^{-11}$	0	$1.589 \cdot 10^{-14}$	$1.589 \cdot 10^{-14}$	0
$e^+e^- \rightarrow e^+e^-$	$-1.022 \cdot 10^{-10}$	$-1.022 \cdot 10^{-10}$	0	$1.626 \cdot 10^{-13}$	$1.626 \cdot 10^{-13}$	0
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	$5.03 \cdot 10^{-12}$	$5.03 \cdot 10^{-12}$	0	$2.937 \cdot 10^{-14}$	$2.937 \cdot 10^{-14}$	0
$s\bar{s} \to s\bar{s}$	$-5.103 \cdot 10^{-12}$	$-5.103 \cdot 10^{-12}$	0	$1.347 \cdot 10^{-14}$	$1.347 \cdot 10^{-14}$	0
$t\bar{t} \to t\bar{t}$	$-3.756 \cdot 10^{-10}$	$-3.756 \cdot 10^{-10}$	0	$1.478 \cdot 10^{-12}$	$1.478 \cdot 10^{-12}$	0
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$9.985 \cdot 10^{-13}$	$9.985 \cdot 10^{-13}$	0	$5.831 \cdot 10^{-15}$	$5.831 \cdot 10^{-15}$	0
$u\bar{u} \to u\bar{u}$	$-5.581 \cdot 10^{-11}$	$-5.581 \cdot 10^{-11}$	0	$6.587 \cdot 10^{-14}$	$6.587 \cdot 10^{-14}$	0

### 2.11 cHl3

		interfere	nce	square
	mod1	mod2	$1-{\tt mod2/mod1}$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
$HH \to HH$	$-4.498 \cdot 10^{-14}$	$-4.498 \cdot 10^{-14}$	0	$2.453 \cdot 10^{-16}  2.453 \cdot 10^{-16}  0$
$HH \to H  au^+  au^-$	$1.522 \cdot 10^{-22}$	$1.522 \cdot 10^{-22}$	0	$1.574 \cdot 10^{-23}  1.574 \cdot 10^{-23}$
$HH  o Hbar{b}$	$-8.695 \cdot 10^{-22}$	$-8.695 \cdot 10^{-22}$	0	$3.447 \cdot 10^{-23}  3.447 \cdot 10^{-23} \qquad 0$
$HH \rightarrow W^+W^-$	3.994	3.994	0	0.7751   0.7751   0
$HH \to W^+W^-\gamma$	$2.983 \cdot 10^{-6}$	$2.983 \cdot 10^{-6}$	0	$1.302 \cdot 10^{-6}$ $1.302 \cdot 10^{-6}$ 0
$HH \to W^+ e^- \bar{\nu}_e$	$1.029 \cdot 10^{-7}$	$1.029 \cdot 10^{-7}$	0	$3.306 \cdot 10^{-9}$ $3.306 \cdot 10^{-9}$ 0
$HH \to W^- u \bar{d}$	$6.63 \cdot 10^{-8}$	$6.63 \cdot 10^{-8}$	0	$3.022 \cdot 10^{-8}$ $3.022 \cdot 10^{-8}$ 0
$HH \to z\bar{b}b$	$2.352 \cdot 10^{-12}$	$2.352 \cdot 10^{-12}$	0	$7.717 \cdot 10^{-14}  7.717 \cdot 10^{-14} \qquad 0$
$HH \to zc\bar{c}$	$-1.179 \cdot 10^{-12}$	$-1.179 \cdot 10^{-12}$	0	$1.086 \cdot 10^{-14}  1.086 \cdot 10^{-14} \qquad 0$
$HH \to zt\bar{t}$	$-6.335 \cdot 10^{-10}$	$-6.335 \cdot 10^{-10}$	0	$9.208 \cdot 10^{-11}  9.208 \cdot 10^{-11} \qquad 0$
$HH \rightarrow zz$	$-9.146 \cdot 10^{-6}$	$-9.146 \cdot 10^{-6}$	0	$7.084 \cdot 10^{-7}$ $7.084 \cdot 10^{-7}$ 0
$HW^+ \to \gamma t \bar{b}$	$2.034 \cdot 10^{-8}$	$2.034 \cdot 10^{-8}$	0	$7.85 \cdot 10^{-9}$ $7.85 \cdot 10^{-9}$ 0
$HW^+ \to \gamma u \bar{d}$	$-1.509 \cdot 10^{-11}$	$-1.509 \cdot 10^{-11}$	0	$2.658 \cdot 10^{-13}  2.658 \cdot 10^{-13} \qquad 0$
$HW^+ \to u\bar{d}$	$-2.105 \cdot 10^{-6}$	$-2.105 \cdot 10^{-6}$	0	$4.024 \cdot 10^{-10}  4.024 \cdot 10^{-10} \qquad 0$
$HW^-  o \gamma e^- \bar{\nu}_e$	$-2.263 \cdot 10^{-8}$	$-2.263 \cdot 10^{-8}$	0	$3.146 \cdot 10^{-10}  3.146 \cdot 10^{-10} \qquad 0$
$HW^- \to \mu^- \bar{\nu}_{\mu}$	$-1.566 \cdot 10^{-6}$	$-1.566 \cdot 10^{-6}$	0	$5.989 \cdot 10^{-9}$ $5.989 \cdot 10^{-9}$ 0
$Hz \to \mu^+\mu^-$	$3.244 \cdot 10^{-11}$	$3.244 \cdot 10^{-11}$	0	$2.034 \cdot 10^{-12}  2.034 \cdot 10^{-12}  0$
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$8.217 \cdot 10^{-11}$	$8.217 \cdot 10^{-11}$	0	$5.142 \cdot 10^{-12}  5.142 \cdot 10^{-12} \qquad 0$
$Hz \to s\bar{s}$	$1.916 \cdot 10^{-10}$		0	$1.2 \cdot 10^{-11}$ $1.2 \cdot 10^{-11}$ 0
$Hz \to t\bar{t}$	$-1.258 \cdot 10^{-6}$	$-1.258 \cdot 10^{-6}$	0	$7.327 \cdot 10^{-8} \qquad 7.327 \cdot 10^{-8} \qquad \qquad 0$
$W^+W^-  o Hb\bar{b}$	$1.475 \cdot 10^{-6}$	$1.475 \cdot 10^{-6}$	0	$1.473 \cdot 10^{-7}$ $1.473 \cdot 10^{-7}$ 0
$W^+W^- \to H c \bar{c}$	$1.242 \cdot 10^{-7}$	$1.242 \cdot 10^{-7}$	0	$3.785 \cdot 10^{-9}$ $3.785 \cdot 10^{-9}$ 0
$W^+W^-  o H d \bar d$	$1.328 \cdot 10^{-8}$	$1.328 \cdot 10^{-8}$	0	$2.855 \cdot 10^{-10}$ $2.855 \cdot 10^{-10}$ 0
$W^+W^-  o W^+W^-$	-0.01695	-0.01695	0	$0.001044 \qquad 0.001044 \qquad 0$
$W^+W^-  o \gamma\gamma$	0.2049	0.2049	0	$0.001144 \qquad 0.001144 \qquad 0$
$W^+W^- \to \gamma\gamma\gamma$	$2.374 \cdot 10^{-8}$	$2.374 \cdot 10^{-8}$	0	$1.39 \cdot 10^{-10}$ $1.39 \cdot 10^{-10}$ 0
$\bar{b}t \to \bar{d}u$	$-1.523 \cdot 10^{-5}$	$-1.523 \cdot 10^{-5}$	0	$2.618 \cdot 10^{-9}  2.618 \cdot 10^{-9}  0$

$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.054 \cdot 10^{-10}$	$1.054 \cdot 10^{-10}$	0	$6.598 \cdot 10^{-12}$	$6.598 \cdot 10^{-12}$	0
$b\bar{b} \rightarrow \mu^+ \mu^-$	$1.45 \cdot 10^{-11}$	$1.45 \cdot 10^{-11}$	0	$5.512 \cdot 10^{-13}$	$5.512 \cdot 10^{-13}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$2.56 \cdot 10^{-11}$	$2.56 \cdot 10^{-11}$	0	$1.602 \cdot 10^{-12}$	$1.602 \cdot 10^{-12}$	0
$b\bar{b}  o b\bar{b}$	$-4.686 \cdot 10^{-9}$	$-4.686 \cdot 10^{-9}$	0	$5.494 \cdot 10^{-11}$	$5.494 \cdot 10^{-11}$	0
$b\bar{b}  o t\bar{t}$	0.08886	0.08886	0	0.001416	0.001416	0
$b\bar{t} \to e^-\bar{\nu}_e$	$-5.947 \cdot 10^{-6}$	$-5.947 \cdot 10^{-6}$	0	$1.022 \cdot 10^{-9}$	$1.022 \cdot 10^{-9}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-8.247 \cdot 10^{-12}$	$-8.247 \cdot 10^{-12}$	0	$4.079 \cdot 10^{-13}$	$4.079 \cdot 10^{-13}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-2.355 \cdot 10^{-6}$	$-2.355 \cdot 10^{-6}$	0	$4.061 \cdot 10^{-10}$	$4.061 \cdot 10^{-10}$	0
$d\bar{d} \to c\bar{c}$	$2.334 \cdot 10^{-11}$	$2.334 \cdot 10^{-11}$	0	$1.436 \cdot 10^{-12}$	$1.436 \cdot 10^{-12}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$7.724 \cdot 10^{-6}$	$7.724 \cdot 10^{-6}$	0	$4.833 \cdot 10^{-7}$	$4.833 \cdot 10^{-7}$	0
$e^+\nu_e \to \mu^+\nu_\mu$	$-1.937 \cdot 10^{-6}$	$-1.937 \cdot 10^{-6}$	0	$3.329 \cdot 10^{-10}$	$3.329 \cdot 10^{-10}$	0
$e^+\nu_e \to e^+\nu_e$	$-4.362 \cdot 10^{-5}$	$-4.362 \cdot 10^{-5}$	0	$4.535 \cdot 10^{-9}$	$4.535 \cdot 10^{-9}$	0
$e^+\tau^- \to e^+\tau^-$	$-2.925 \cdot 10^{-10}$	$-2.925 \cdot 10^{-10}$	0	$4.118 \cdot 10^{-12}$	$4.118 \cdot 10^{-12}$	0
$e^+e^- \to \mu^+\mu^-$	$-1.708 \cdot 10^{-11}$	$-1.708 \cdot 10^{-11}$	0	$1.024 \cdot 10^{-12}$	$1.024 \cdot 10^{-12}$	0
$e^+e^- \rightarrow e^+e^-$	$-3.455 \cdot 10^{-9}$	$-3.455 \cdot 10^{-9}$	0	$8.089 \cdot 10^{-11}$	$8.089 \cdot 10^{-11}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$3.359 \cdot 10^{-11}$	$3.359 \cdot 10^{-11}$	0	$2.102 \cdot 10^{-12}$	$2.102 \cdot 10^{-12}$	0
$s\bar{s} \to s\bar{s}$	$-2.764 \cdot 10^{-9}$	$-2.764 \cdot 10^{-9}$	0	$2.97 \cdot 10^{-11}$	$2.97 \cdot 10^{-11}$	0
$t\bar{t} \to t\bar{t}$	$-9.464 \cdot 10^{-9}$	$-9.464 \cdot 10^{-9}$	0	$9.349 \cdot 10^{-10}$	$9.349 \cdot 10^{-10}$	0
$tg \to bW^+$	$-3.892 \cdot 10^{-8}$	$-3.892 \cdot 10^{-8}$	0	$2.175 \cdot 10^{-9}$	$2.175 \cdot 10^{-9}$	0
$u\bar{d} \to c\bar{s}$	$-2.66 \cdot 10^{-7}$	$-2.66 \cdot 10^{-7}$	0	$4.573 \cdot 10^{-11}$	$4.573 \cdot 10^{-11}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$2.367 \cdot 10^{-11}$	$2.367 \cdot 10^{-11}$	0	$1.481 \cdot 10^{-12}$	$1.481 \cdot 10^{-12}$	0
$u\bar{u} \to u\bar{u}$	$-3.346 \cdot 10^{-7}$	$-3.346 \cdot 10^{-7}$	0	$2.43 \cdot 10^{-8}$	$2.43 \cdot 10^{-8}$	0
$zz  o W^+W^-$	-7.501	-7.501	0	0.4623	0.4623	0

### 2.12 cHq1

		interfer	ence		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z\bar{b}b$	$4.214 \cdot 10^{-15}$	$4.214 \cdot 10^{-15}$	0	$1.447 \cdot 10^{-15}$	$1.447 \cdot 10^{-15}$	0	

$HH \to zc\bar{c}$	$7.11 \cdot 10^{-14}$	$7.11 \cdot 10^{-14}$	0	$1.496 \cdot 10^{-14}$	$1.496 \cdot 10^{-14}$	0
$HH \to z t \bar{t}$	$-4.337 \cdot 10^{-10}$	$-4.337 \cdot 10^{-10}$	0	$5.056 \cdot 10^{-13}$	$5.056 \cdot 10^{-13}$	0
$HH \rightarrow zz$	$1.99 \cdot 10^{-6}$	$1.99 \cdot 10^{-6}$	0	$3.29 \cdot 10^{-8}$	$3.29 \cdot 10^{-8}$	0
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \rightarrow \mu^+\mu^-$	$-8.521 \cdot 10^{-12}$	$-8.521 \cdot 10^{-12}$	0	$1.226 \cdot 10^{-13}$	$1.226 \cdot 10^{-13}$	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$-1.469 \cdot 10^{-11}$	$-1.469 \cdot 10^{-11}$	0	$2.111 \cdot 10^{-13}$	$2.111 \cdot 10^{-13}$	0
$Hz \to s\bar{s}$	$-4.037 \cdot 10^{-11}$	$-4.037 \cdot 10^{-11}$	0	$5.805 \cdot 10^{-13}$	$5.805 \cdot 10^{-13}$	0
$Hz \to t\bar{t}$	$1.234 \cdot 10^{-7}$	$1.234 \cdot 10^{-7}$	0	$5.596 \cdot 10^{-10}$	$5.596 \cdot 10^{-10}$	0
$W^+W^- \to Hb\bar{b}$	$-1.699 \cdot 10^{-10}$	$-1.699 \cdot 10^{-10}$	0	$1.923 \cdot 10^{-13}$	$1.923 \cdot 10^{-13}$	0
$W^+W^-  o Hc\bar{c}$	$1.896 \cdot 10^{-11}$	$1.896 \cdot 10^{-11}$	0	$3.523 \cdot 10^{-13}$	$3.523 \cdot 10^{-13}$	0
$W^+W^- \to H d\bar{d}$	$1.155 \cdot 10^{-10}$	$1.155 \cdot 10^{-10}$	0	$5.439 \cdot 10^{-12}$	$5.439 \cdot 10^{-12}$	0
$W^+W^- \to W^+W^-$	$6.888 \cdot 10^{-5}$	$6.888 \cdot 10^{-5}$	0	$1.283 \cdot 10^{-6}$	$1.283 \cdot 10^{-6}$	0
$ u_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$	$-2.795 \cdot 10^{-11}$	$-2.795 \cdot 10^{-11}$	0	$4.016 \cdot 10^{-13}$	$4.016 \cdot 10^{-13}$	0
$b\bar{b} \to \mu^+\mu^-$	$-2.122 \cdot 10^{-12}$	$-2.122 \cdot 10^{-12}$	0	$2.6 \cdot 10^{-14}$	$2.6 \cdot 10^{-14}$	0
$b\bar{b} \to \nu_e \bar{\nu}_e$	$-1.03 \cdot 10^{-12}$	$-1.03 \cdot 10^{-12}$	0	$1.48 \cdot 10^{-14}$	$1.48 \cdot 10^{-14}$	0
b ar b  o b ar b	$5.12 \cdot 10^{-11}$	$5.12 \cdot 10^{-11}$	0	$1.51 \cdot 10^{-13}$	$1.51 \cdot 10^{-13}$	0
b ar b  o t ar t	$-1.176 \cdot 10^{-7}$	$-1.176 \cdot 10^{-7}$	0	$2.626 \cdot 10^{-13}$	$2.626 \cdot 10^{-13}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-8.003 \cdot 10^{-12}$	$-8.003 \cdot 10^{-12}$	0	$2.995 \cdot 10^{-14}$	$2.995 \cdot 10^{-14}$	0
$d\bar{d} \to c\bar{c}$	$-1.059 \cdot 10^{-11}$	$-1.059 \cdot 10^{-11}$	0	$1.104 \cdot 10^{-13}$	$1.104 \cdot 10^{-13}$	0
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$-5.624 \cdot 10^{-9}$	$-5.624 \cdot 10^{-9}$	0	$8.081 \cdot 10^{-11}$	$8.081 \cdot 10^{-11}$	0
$e^+\nu_e \to e^+\nu_e$	$-7.219 \cdot 10^{-9}$	$-7.219 \cdot 10^{-9}$	0	$6.084 \cdot 10^{-11}$	$6.084 \cdot 10^{-11}$	0
$e^+\tau^- \to e^+\tau^-$	$4.817 \cdot 10^{-11}$	$4.817 \cdot 10^{-11}$	0	$1.476 \cdot 10^{-13}$	$1.476 \cdot 10^{-13}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	$-4.371 \cdot 10^{-11}$	$-4.371 \cdot 10^{-11}$	0	$9.621 \cdot 10^{-14}$	$9.621 \cdot 10^{-14}$	0
$e^+e^- \rightarrow e^+e^-$	$2.514 \cdot 10^{-10}$	$2.514 \cdot 10^{-10}$	0	$9.847 \cdot 10^{-13}$	$9.847 \cdot 10^{-13}$	0
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	$-1.238 \cdot 10^{-11}$	$-1.238 \cdot 10^{-11}$	0	$1.778 \cdot 10^{-13}$	$1.778 \cdot 10^{-13}$	0
$s\bar{s} \to s\bar{s}$	$1.256 \cdot 10^{-11}$	$1.256 \cdot 10^{-11}$	0	$8.155 \cdot 10^{-14}$	$8.155 \cdot 10^{-14}$	0
$t\bar{t} \to t\bar{t}$	$9.243 \cdot 10^{-10}$	$9.243 \cdot 10^{-10}$	0	$8.947 \cdot 10^{-12}$	$8.947 \cdot 10^{-12}$	0
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-2.457 \cdot 10^{-12}$	$-2.457 \cdot 10^{-12}$	0	$3.53 \cdot 10^{-14}$	$3.53 \cdot 10^{-14}$	0

### $2.13 \quad \mathrm{cHq}3$

	interfere	square	
	mod1 mod2	$1-{\tt mod2/mod1}$	$\verb mod1  \qquad \verb mod2  \qquad 1-\verb mod2/mod1 $
HH  o HH	$1.703 \cdot 10^{-15}$ $1.703 \cdot 10^{-15}$	0	$3.516 \cdot 10^{-19}  3.516 \cdot 10^{-19} \qquad \qquad 0$
$HH \to H \tau^+ \tau^-$	$-5.763 \cdot 10^{-24}  -5.763 \cdot 10^{-24}$	0	$2.256 \cdot 10^{-26}  2.256 \cdot 10^{-26} \qquad 0$
$HH  o Hbar{b}$	$3.292 \cdot 10^{-23}$ $3.292 \cdot 10^{-23}$	0	$4.942 \cdot 10^{-26}  4.942 \cdot 10^{-26}  0$
$HH \to W^+W^-$	$7.067 \cdot 10^{-6} \qquad 7.067 \cdot 10^{-6}$	0	$9.413 \cdot 10^{-7}$ $9.413 \cdot 10^{-7}$ 0
$HH \to W^+W^-\gamma$	$7.365 \cdot 10^{-11}$ $7.365 \cdot 10^{-11}$	0	$5.099 \cdot 10^{-12}  5.099 \cdot 10^{-12} \qquad 0$
$HH  o W^+ e^- \bar{\nu}_e$	$1.582 \cdot 10^{-11}$ $1.582 \cdot 10^{-11}$	0	$3.314 \cdot 10^{-14}  3.314 \cdot 10^{-14} \qquad \qquad 0$
$HH \to W^- u \bar{d}$	$-2.834 \cdot 10^{-11}  -2.834 \cdot 10^{-11}$	0	$9.601 \cdot 10^{-14}  9.601 \cdot 10^{-14} \qquad 0$
$HH \to z\bar{b}b$	$-1.834 \cdot 10^{-12}  -1.834 \cdot 10^{-12}$	0	$4.693 \cdot 10^{-14}  4.693 \cdot 10^{-14} \qquad 0$
$HH \to z c \bar{c}$	$9.196 \cdot 10^{-13}$ $9.196 \cdot 10^{-13}$	0	$6.603 \cdot 10^{-15}  6.603 \cdot 10^{-15}$
$HH \to z t \bar{t}$	$4.673 \cdot 10^{-10}$ $4.673 \cdot 10^{-10}$	0	$8.621 \cdot 10^{-11}  8.621 \cdot 10^{-11} \qquad \qquad 0$
$HH \rightarrow zz$	$7.132 \cdot 10^{-6} \qquad 7.132 \cdot 10^{-6}$	0	$4.308 \cdot 10^{-7}$ $4.308 \cdot 10^{-7}$ 0
$HW^+  o \gamma t \bar{b}$	$-3.708 \cdot 10^{-11}  -3.708 \cdot 10^{-11}$	0	$2.379 \cdot 10^{-13}  2.379 \cdot 10^{-13}  0$
$HW^+ \to \gamma u \bar{d}$	$-3.6 \cdot 10^{-12}$ $-3.6 \cdot 10^{-12}$	0	$8.45 \cdot 10^{-14}$ $8.45 \cdot 10^{-14}$ 0
$HW^+  o u \bar d$	$-1.401 \cdot 10^{-11}  -1.401 \cdot 10^{-11}$	0	$5.661 \cdot 10^{-13}  5.661 \cdot 10^{-13} \qquad 0$
$HW^- \to \gamma e^- \bar{\nu}_e$	$-7.896 \cdot 10^{-10}  -7.896 \cdot 10^{-10}$	0	$9.678 \cdot 10^{-13}  9.678 \cdot 10^{-13} \qquad 0$
$HW^-  o \mu^- \bar{\nu}_\mu$	$-1.042 \cdot 10^{-11}  -1.042 \cdot 10^{-11}$	0	$4.22 \cdot 10^{-13}$ $4.22 \cdot 10^{-13}$ 0
$Hz \to \mu^+\mu^-$	$-2.53 \cdot 10^{-11}$ $-2.53 \cdot 10^{-11}$	0	$1.237 \cdot 10^{-12}  1.237 \cdot 10^{-12} \qquad 0$
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$-6.408 \cdot 10^{-11}  -6.408 \cdot 10^{-11}$	0	$3.127 \cdot 10^{-12}  3.127 \cdot 10^{-12} \qquad \qquad 0$
$Hz \to s\bar{s}$	$-1.494 \cdot 10^{-10}  -1.494 \cdot 10^{-1}$	0 0	$7.296 \cdot 10^{-12}  7.296 \cdot 10^{-12} \qquad 0$
$Hz \to t\bar{t}$	$1.256 \cdot 10^{-6} \qquad 1.256 \cdot 10^{-6}$	0	$7.226 \cdot 10^{-8}$ $7.226 \cdot 10^{-8}$ 0
$W^+W^- \to Hb\bar{b}$	$-6.244 \cdot 10^{-10}  -6.244 \cdot 10^{-1}$	0 0	$7.156 \cdot 10^{-11}  7.156 \cdot 10^{-11} \qquad 0$
$W^+W^- \to H c \bar c$	$4.774 \cdot 10^{-11}$ $4.774 \cdot 10^{-11}$	0	$8.918 \cdot 10^{-12}  8.918 \cdot 10^{-12} \qquad \qquad 0$
$W^+W^- \to H d\bar{d}$	$-3.353 \cdot 10^{-11}  -3.353 \cdot 10^{-1}$	0	$6.814 \cdot 10^{-13}  6.814 \cdot 10^{-13} \qquad 0$

$W^+W^- \to W^+W^-$	0.01322	0.01322	0	0.0006346	0.0006346	0
$W^+W^-  o \gamma\gamma$	$-4.479 \cdot 10^{-5}$	$-4.479 \cdot 10^{-5}$	0	$1.791 \cdot 10^{-6}$	$1.791 \cdot 10^{-6}$	0
$W^+W^- \to \gamma\gamma\gamma$	$-1.501 \cdot 10^{-12}$	$-1.501 \cdot 10^{-12}$	0	$2.175 \cdot 10^{-13}$	$2.175 \cdot 10^{-13}$	0
$\bar{b}t \to \bar{d}u$	$-1.013 \cdot 10^{-10}$	$-1.013 \cdot 10^{-10}$	0	$4.096 \cdot 10^{-12}$	$4.096 \cdot 10^{-12}$	0
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$-8.222 \cdot 10^{-11}$	$-8.222 \cdot 10^{-11}$	0	$4.013 \cdot 10^{-12}$	$4.013 \cdot 10^{-12}$	0
$b\bar{b} \to \mu^+\mu^-$	$-1.131 \cdot 10^{-11}$	$-1.131 \cdot 10^{-11}$	0	$3.352 \cdot 10^{-13}$	$3.352 \cdot 10^{-13}$	0
$b\bar{b}  o \nu_e \bar{\nu}_e$	$-1.997 \cdot 10^{-11}$	$-1.997 \cdot 10^{-11}$	0	$9.744 \cdot 10^{-13}$	$9.744 \cdot 10^{-13}$	0
$bar{b}  o bar{ar{b}}$	$3.654 \cdot 10^{-9}$	$3.654 \cdot 10^{-9}$	0	$3.341 \cdot 10^{-11}$	$3.341 \cdot 10^{-11}$	0
$b\bar{b}  o t\bar{t}$	$-1.244 \cdot 10^{-6}$	$-1.244 \cdot 10^{-6}$	0	$1.022 \cdot 10^{-7}$	$1.022 \cdot 10^{-7}$	0
$b\bar{t} \to e^- \bar{\nu}_e$	$-3.957 \cdot 10^{-11}$	$-3.957 \cdot 10^{-11}$	0	$1.599 \cdot 10^{-12}$	$1.599 \cdot 10^{-12}$	0
$c\bar{c} \to \mu^+ \mu^-$	$6.431 \cdot 10^{-12}$	$6.431 \cdot 10^{-12}$	0	$2.481 \cdot 10^{-13}$	$2.481 \cdot 10^{-13}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	$-1.567 \cdot 10^{-11}$	$-1.567 \cdot 10^{-11}$	0	$6.335 \cdot 10^{-13}$	$6.335 \cdot 10^{-13}$	0
$d\bar{d} \to c\bar{c}$	$-1.82 \cdot 10^{-11}$	$-1.82 \cdot 10^{-11}$	0	$8.73 \cdot 10^{-13}$	$8.73 \cdot 10^{-13}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$-6.023 \cdot 10^{-6}$	$-6.023 \cdot 10^{-6}$	0	$2.939 \cdot 10^{-7}$	$2.939 \cdot 10^{-7}$	0
$e^+\nu_e^-  o \mu^+\nu_\mu^-$	$-1.289 \cdot 10^{-11}$	$-1.289 \cdot 10^{-11}$	0	$5.209 \cdot 10^{-13}$	$5.209 \cdot 10^{-13}$	0
$e^+\nu_e \to e^+\nu_e$	$-3.73 \cdot 10^{-8}$	$-3.73 \cdot 10^{-8}$	0	$9.657 \cdot 10^{-10}$	$9.657 \cdot 10^{-10}$	0
$e^+\tau^- \to e^+\tau^-$	$2.281 \cdot 10^{-10}$	$2.281 \cdot 10^{-10}$	0	$2.504 \cdot 10^{-12}$	$2.504 \cdot 10^{-12}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	$1.332 \cdot 10^{-11}$	$1.332 \cdot 10^{-11}$	0	$6.225 \cdot 10^{-13}$	$6.225 \cdot 10^{-13}$	0
$e^+e^- \rightarrow e^+e^-$	$2.694 \cdot 10^{-9}$	$2.694 \cdot 10^{-9}$	0	$4.92 \cdot 10^{-11}$	$4.92 \cdot 10^{-11}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-2.62 \cdot 10^{-11}$	$-2.62 \cdot 10^{-11}$	0	$1.278 \cdot 10^{-12}$	$1.278 \cdot 10^{-12}$	0
$s\bar{s} \to s\bar{s}$	$2.156 \cdot 10^{-9}$	$2.156 \cdot 10^{-9}$	0	$1.806 \cdot 10^{-11}$	$1.806 \cdot 10^{-11}$	0
$t\bar{t} \to t\bar{t}$	$7.379 \cdot 10^{-9}$	$7.379 \cdot 10^{-9}$	0	$5.684 \cdot 10^{-10}$	$5.684 \cdot 10^{-10}$	0
$tg \rightarrow bW^+$	$4.36 \cdot 10^{-8}$	$4.36 \cdot 10^{-8}$	0	$2.729 \cdot 10^{-9}$	$2.729 \cdot 10^{-9}$	0
$u\bar{d} \to c\bar{s}$	$-1.77 \cdot 10^{-12}$	$-1.77 \cdot 10^{-12}$	0	$7.155 \cdot 10^{-14}$	$7.155 \cdot 10^{-14}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-1.846 \cdot 10^{-11}$	$-1.846 \cdot 10^{-11}$	0	$9.008 \cdot 10^{-13}$	$9.008 \cdot 10^{-13}$	0
$u\bar{u} \to u\bar{u}$	$2.61\cdot 10^{-7}$	$2.61 \cdot 10^{-7}$	0	$1.478 \cdot 10^{-8}$	$1.478 \cdot 10^{-8}$	0
$zz  o W^+W^-$	0.01038	0.01038	0	0.0004122	0.0004122	0

## 2.14 cHu

		interfere	ence		square	
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
HH o zar b b	$2.283 \cdot 10^{-15}$	$2.283 \cdot 10^{-15}$	0	$4.248 \cdot 10^{-16}$	$4.248 \cdot 10^{-16}$	0
$HH  o zc\bar{c}$	$3.853 \cdot 10^{-14}$	$3.853 \cdot 10^{-14}$	0	$4.392 \cdot 10^{-15}$	$4.392 \cdot 10^{-15}$	0
HH o ztar t	$-2.35 \cdot 10^{-10}$	$-2.35 \cdot 10^{-10}$	0	$1.485 \cdot 10^{-13}$	$1.485 \cdot 10^{-13}$	0
HH  o zz	$1.079 \cdot 10^{-6}$	$1.079 \cdot 10^{-6}$	0	$9.662 \cdot 10^{-9}$	$9.662 \cdot 10^{-9}$	0
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz  o \mu^+\mu^-$	$-4.617 \cdot 10^{-12}$	$-4.617 \cdot 10^{-12}$	0	$3.6 \cdot 10^{-14}$	$3.6 \cdot 10^{-14}$	0
$Hz  o  u_ au ar u_ au$	$-7.959 \cdot 10^{-12}$	$-7.959 \cdot 10^{-12}$	0	$6.198 \cdot 10^{-14}$	$6.198 \cdot 10^{-14}$	0
$Hz  o s ar{s}$	$-2.188 \cdot 10^{-11}$	$-2.188 \cdot 10^{-11}$	0	$1.705 \cdot 10^{-13}$	$1.705 \cdot 10^{-13}$	0
Hz  o t ar t	$6.689 \cdot 10^{-8}$	$6.689 \cdot 10^{-8}$	0	$1.643 \cdot 10^{-10}$	$1.643 \cdot 10^{-10}$	0
$W^+W^-  o Hbar{b}$	$-9.207 \cdot 10^{-11}$	$-9.207 \cdot 10^{-11}$	0	$5.646 \cdot 10^{-14}$	$5.646 \cdot 10^{-14}$	0
$W^+W^- \to H c \bar c$	$1.028 \cdot 10^{-11}$	$1.028 \cdot 10^{-11}$	0	$1.035 \cdot 10^{-13}$	$1.035 \cdot 10^{-13}$	0
$W^+W^- \to H d\bar{d}$	$6.256 \cdot 10^{-11}$	$6.256 \cdot 10^{-11}$	0	$1.597 \cdot 10^{-12}$	$1.597 \cdot 10^{-12}$	0
$W^+W^-  o W^+W^-$	$3.733 \cdot 10^{-5}$	$3.733 \cdot 10^{-5}$	0	$3.768 \cdot 10^{-7}$	$3.768 \cdot 10^{-7}$	0
$ u_e ar{ u}_e  ightarrow  u_\mu ar{ u}_\mu$	$-1.515 \cdot 10^{-11}$	$-1.515 \cdot 10^{-11}$	0	$1.179 \cdot 10^{-13}$	$1.179 \cdot 10^{-13}$	0
$b\bar{b}  o \mu^+\mu^-$	$-1.15 \cdot 10^{-12}$	$-1.15 \cdot 10^{-12}$	0	$7.633 \cdot 10^{-15}$	$7.633 \cdot 10^{-15}$	0
$bar{b}  ightarrow  u_e ar{ u}_e$	$-5.582 \cdot 10^{-13}$	$-5.582 \cdot 10^{-13}$	0	$4.347 \cdot 10^{-15}$	$4.347 \cdot 10^{-15}$	0
$bar{b}  o bar{b}$	$2.774 \cdot 10^{-11}$	$2.774 \cdot 10^{-11}$	0	$4.435 \cdot 10^{-14}$	$4.435 \cdot 10^{-14}$	0
bar b o tar t	$-6.374 \cdot 10^{-8}$	$-6.374 \cdot 10^{-8}$	0	$7.712 \cdot 10^{-14}$	$7.712 \cdot 10^{-14}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-4.337 \cdot 10^{-12}$	$-4.337 \cdot 10^{-12}$	0	$8.795 \cdot 10^{-15}$	$8.795 \cdot 10^{-15}$	0
$d\bar{d}  o c\bar{c}$	$-5.737 \cdot 10^{-12}$	$-5.737 \cdot 10^{-12}$	0	$3.241 \cdot 10^{-14}$	$3.241 \cdot 10^{-14}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$-3.047 \cdot 10^{-9}$	$-3.047 \cdot 10^{-9}$	0	$2.373 \cdot 10^{-11}$	$2.373 \cdot 10^{-11}$	0
$e^+\nu_e \to e^+\nu_e$	$-3.912 \cdot 10^{-9}$	$-3.912 \cdot 10^{-9}$	0	$1.787 \cdot 10^{-11}$	$1.787 \cdot 10^{-11}$	0
$e^+\tau^- \to e^+\tau^-$	$2.61 \cdot 10^{-11}$	$2.61 \cdot 10^{-11}$	0	$4.333 \cdot 10^{-14}$	$4.333 \cdot 10^{-14}$	0
$e^+e^- \to \mu^+\mu^-$	$-2.369 \cdot 10^{-11}$	$-2.369 \cdot 10^{-11}$	0	$2.825 \cdot 10^{-14}$	$2.825 \cdot 10^{-14}$	0
$e^+e^- \rightarrow e^+e^-$	$1.362 \cdot 10^{-10}$	$1.362 \cdot 10^{-10}$	0	$2.891 \cdot 10^{-13}$	$2.891 \cdot 10^{-13}$	0
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	$-6.706 \cdot 10^{-12}$	$-6.706 \cdot 10^{-12}$	0	$5.222 \cdot 10^{-14}$	$5.222 \cdot 10^{-14}$	0
$s\bar{s} \to s\bar{s}$	$6.803 \cdot 10^{-12}$	$6.803 \cdot 10^{-12}$	0	$2.395 \cdot 10^{-14}$	$2.395 \cdot 10^{-14}$	0

$t\bar{t} \to t\bar{t}$	$5.009 \cdot 10^{-10}$ $5.009 \cdot 10^{-10}$	0	$2.627 \cdot 10^{-12}  2.627 \cdot 10^{-12} \qquad 0$
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$ 0	1	$1.164 \cdot 10^{-39}$ 0 1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-1.331 \cdot 10^{-12}  -1.331 \cdot 10^{-12}$	0	$1.037 \cdot 10^{-14}  1.037 \cdot 10^{-14} \qquad 0$
$u\bar{u} \to u\bar{u}$	$7.441 \cdot 10^{-11}$ $7.441 \cdot 10^{-11}$	0	$1.171 \cdot 10^{-13}  1.171 \cdot 10^{-13} \qquad 0$

### 2.15 cHudRe

		interfere		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to z\bar{b}b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
$HH \to z t \bar{t}$	$-3.611 \cdot 10^{-13}$	$-3.611 \cdot 10^{-13}$	0	$5.304 \cdot 10^{-19}$	$5.304 \cdot 10^{-19}$	0
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+  o \gamma t \bar{b}$	$-1.761 \cdot 10^{-15}$	$-1.761 \cdot 10^{-15}$	0	$2.205 \cdot 10^{-21}$	$2.205 \cdot 10^{-21}$	0
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$4.803 \cdot 10^{-10}$	$4.803 \cdot 10^{-10}$	0	$9.011 \cdot 10^{-15}$	$9.011 \cdot 10^{-15}$	0
$W^+W^- \to H b \bar b$	$-5.014 \cdot 10^{-12}$	$-5.014 \cdot 10^{-12}$	0	$7.343 \cdot 10^{-18}$	$7.343 \cdot 10^{-18}$	0
$W^+W^-  o Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b}  o \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b} \to t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1

$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e^- \rightarrow e^+\nu_e^-$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$7.079 \cdot 10^{-12}$	$7.079 \cdot 10^{-12}$	0	$1.506 \cdot 10^{-16}$	$1.506 \cdot 10^{-16}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

## 2.16 cW

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar b b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
$W^+W^-  o Hb\bar{b}$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1	
$W^+W^- \to H c \bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1	
$W^+W^-  o Hd\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1	
$W^+W^- \to W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	

$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b}  o \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^- \to \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

#### 2.17 cdBRe

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z\bar{b}b$	$7.27 \cdot 10^{-16}$	$7.27 \cdot 10^{-16}$	0	$7.373 \cdot 10^{-21}$	$7.373 \cdot 10^{-21}$	0		
$HH \to z c \bar{c}$	$-3.645 \cdot 10^{-16}$	$-3.645 \cdot 10^{-16}$	0	$1.037 \cdot 10^{-21}$	$1.037 \cdot 10^{-21}$	0		
$HH \to z t \bar{t}$	$-2.201 \cdot 10^{-13}$	$-2.201 \cdot 10^{-13}$	0	$1.919 \cdot 10^{-18}$	$1.919 \cdot 10^{-18}$	0		
$HH \rightarrow zz$	$-2.827 \cdot 10^{-9}$	$-2.827 \cdot 10^{-9}$	0	$6.768 \cdot 10^{-14}$	$6.768 \cdot 10^{-14}$	0		
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1		
$Hz \rightarrow \mu^+ \mu^-$	$1.003 \cdot 10^{-14}$	$1.003 \cdot 10^{-14}$	0	$1.943 \cdot 10^{-19}$	$1.943 \cdot 10^{-19}$	0		

$Hz \rightarrow \nu_{\tau}$	$\bar{\nu}_{\tau}$ 2.54 · 10 <sup>-14</sup>	$2.54 \cdot 10^{-14}$	0	$4.913 \cdot 10^{-19}$	$4.913 \cdot 10^{-19}$	0
$Hz \rightarrow s\bar{s}$	$5.922 \cdot 10^{-14}$	$5.922 \cdot 10^{-14}$	0	$1.146 \cdot 10^{-18}$	$1.146 \cdot 10^{-18}$	0
$Hz \to t\bar{t}$	$-1.389 \cdot 10^{-10}$	$-1.389 \cdot 10^{-10}$	0	$1.014 \cdot 10^{-15}$	$1.014 \cdot 10^{-15}$	0
$W^+W^-$ -	$\to Hb\bar{b}$ $-1.486 \cdot 10^{-13}$	$-1.486 \cdot 10^{-13}$	0	$8.82 \cdot 10^{-19}$	$8.82 \cdot 10^{-19}$	0
$W^+W^-$ -	$\to H c \bar{c}$ $-3.585 \cdot 10^{-14}$	$-3.585 \cdot 10^{-14}$	0	$1.533 \cdot 10^{-18}$	$1.533 \cdot 10^{-18}$	0
$W^+W^-$ -	$\rightarrow Hd\bar{d}$ 8.917 · 10 <sup>-15</sup>	$8.917 \cdot 10^{-15}$	0	$1.28 \cdot 10^{-19}$	$1.28 \cdot 10^{-19}$	0
$W^+W^-$ -	$\rightarrow W^+W^5.238 \cdot 10^{-6}$	$-5.238 \cdot 10^{-6}$	0	$9.97 \cdot 10^{-11}$	$9.97 \cdot 10^{-11}$	0
$\nu_e \bar{\nu}_e \rightarrow \nu_\mu$	$_{\mu}\bar{\nu}_{\mu}$ 3.259 · 10 <sup>-14</sup>	$3.259 \cdot 10^{-14}$	0	$6.304 \cdot 10^{-19}$	$6.304 \cdot 10^{-19}$	0
$b\bar{b} \to \mu^+ \mu^-$	·	$4.483 \cdot 10^{-15}$	0	$5.266 \cdot 10^{-20}$	$5.266 \cdot 10^{-20}$	0
$b\bar{b} \rightarrow \nu_e \bar{\nu}_e$	$7.914 \cdot 10^{-15}$	$7.914 \cdot 10^{-15}$	0	$1.531 \cdot 10^{-19}$	$1.531 \cdot 10^{-19}$	0
$b\bar{b} \to b\bar{b}$	$-1.448 \cdot 10^{-12}$	$-1.448 \cdot 10^{-12}$	0	$5.249 \cdot 10^{-18}$	$5.249 \cdot 10^{-18}$	0
$b\bar{b} \to t\bar{t}$	$1.984 \cdot 10^{-12}$	$1.984 \cdot 10^{-12}$	0	$3.983 \cdot 10^{-19}$	$3.983 \cdot 10^{-19}$	0
$c\bar{c} \to \mu^+ \mu$	$\iota^ -2.549 \cdot 10^{-15}$	$-2.549 \cdot 10^{-15}$	0	$3.897 \cdot 10^{-20}$	$3.897 \cdot 10^{-20}$	0
$d\bar{d} \to c\bar{c}$	$7.215 \cdot 10^{-15}$	$7.215 \cdot 10^{-15}$	0	$1.372 \cdot 10^{-19}$	$1.372 \cdot 10^{-19}$	0
$e^+\nu_\mu \to e$	$e^+\nu_{\mu}$ 2.387 · 10 <sup>-9</sup>	$2.387 \cdot 10^{-9}$	0	$4.618 \cdot 10^{-14}$	$4.618 \cdot 10^{-14}$	0
$e^+\nu_e^{\prime} \to e$		$1.422 \cdot 10^{-11}$	0	$1.657 \cdot 10^{-16}$	$1.657 \cdot 10^{-16}$	0
$e^+\tau^- \to e^-$	$e^+\tau^ -9.042 \cdot 10^{-14}$	$-9.042 \cdot 10^{-14}$	0	$3.935 \cdot 10^{-19}$	$3.935 \cdot 10^{-19}$	0
$e^+e^- \rightarrow \mu$	$ \mu^{+}\mu^{-} $ $-5.278 \cdot 10^{-15}$	$-5.278 \cdot 10^{-15}$	0	$9.779 \cdot 10^{-20}$	$9.779 \cdot 10^{-20}$	0
$e^+e^-  o \epsilon$		$-1.068 \cdot 10^{-12}$	0	$7.729 \cdot 10^{-18}$	$7.729 \cdot 10^{-18}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}$	$1.038 \cdot 10^{-14}$	$1.038 \cdot 10^{-14}$	0	$2.008 \cdot 10^{-19}$	$2.008 \cdot 10^{-19}$	0
$s\bar{s} \to s\bar{s}$	$-8.544 \cdot 10^{-13}$	$-8.544 \cdot 10^{-13}$	0	$2.838 \cdot 10^{-18}$	$2.838 \cdot 10^{-18}$	0
$t\bar{t} \to t\bar{t}$	$-2.925 \cdot 10^{-12}$	$-2.925 \cdot 10^{-12}$	0	$8.93 \cdot 10^{-17}$	$8.93 \cdot 10^{-17}$	0
$tg \rightarrow bW$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}$	$     \overline{Q}_e \qquad 7.316 \cdot 10^{-15} $	$7.316 \cdot 10^{-15}$	0	$1.415 \cdot 10^{-19}$	$1.415 \cdot 10^{-19}$	0
$u\bar{u} \to u\bar{u}$	$-1.034 \cdot 10^{-10}$	$-1.034 \cdot 10^{-10}$	0	$2.321 \cdot 10^{-15}$	$2.321 \cdot 10^{-15}$	0

#### 2.18 cdGRe

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to z\bar{b}b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^-  o Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1

$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

#### 2.19 cdHRe

	interference				square		
	mod1		$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH \to HH$	$-4.598 \cdot 10^{-14}$ -	$-4.598 \cdot 10^{-14}$	0	$2.125 \cdot 10^{-16}$	$2.125 \cdot 10^{-16}$	0	
$HH \to H \tau^+ \tau^-$	$-1.416 \cdot 10^{-20}$ -	$-1.416 \cdot 10^{-20}$	0	$6.068 \cdot 10^{-22}$	$6.068 \cdot 10^{-22}$	0	
$HH \to Hb\bar{b}$	$-4.402 \cdot 10^{-22}$ -	$-4.402 \cdot 10^{-22}$	0	$3.789 \cdot 10^{-23}$	$3.789 \cdot 10^{-23}$	0	
$HH  o W^+W^-$	$-3.727 \cdot 10^{-10}$ -	$-3.727 \cdot 10^{-10}$	0	$8.01 \cdot 10^{-16}$	$8.01 \cdot 10^{-16}$	0	
$HH  o W^+W^-\gamma$	$-1.482 \cdot 10^{-15}$ -	$-1.482 \cdot 10^{-15}$	0	$1.781 \cdot 10^{-21}$	$1.781 \cdot 10^{-21}$	0	
$HH  o W^+ e^- \bar{\nu}_e$	$1.334 \cdot 10^{-16}$ 1	$1.334 \cdot 10^{-16}$	0	$1.365 \cdot 10^{-23}$	$1.365 \cdot 10^{-23}$	0	
$HH \to W^- u \bar{d}$	$6.676 \cdot 10^{-17}$	$6.676 \cdot 10^{-17}$	0	$5.791 \cdot 10^{-25}$	$5.791 \cdot 10^{-25}$	0	
$HH \to z\bar{b}b$	$9.639 \cdot 10^{-17}$	$9.639 \cdot 10^{-17}$	0	$6.075 \cdot 10^{-24}$	$6.075 \cdot 10^{-24}$	0	
$HH \to zc\bar{c}$	$5.94 \cdot 10^{-17}$	$5.94 \cdot 10^{-17}$	0	$1.905 \cdot 10^{-22}$	$1.905 \cdot 10^{-22}$	0	
$HH \to z t \bar{t}$	$1.323 \cdot 10^{-14}$ 1	$1.323 \cdot 10^{-14}$	0	$5.946 \cdot 10^{-22}$	$5.946 \cdot 10^{-22}$	0	
$HH \rightarrow zz$	$-2.483 \cdot 10^{-10}$ -	$-2.483 \cdot 10^{-10}$	0	$3.975 \cdot 10^{-16}$	$3.975 \cdot 10^{-16}$	0	
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1	
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1	
$W^+W^- \to H b \bar b$	$1.341 \cdot 10^{-15}$ 1	$1.341 \cdot 10^{-15}$	0	$1.513 \cdot 10^{-21}$	$1.513 \cdot 10^{-21}$	0	
$W^+W^-  o Hc\bar{c}$	$-2.323 \cdot 10^{-18}$ -	$-2.323 \cdot 10^{-18}$	$8.608 \cdot 10^{-8}$	$2.123 \cdot 10^{-23}$	$2.123 \cdot 10^{-23}$	0	
$W^+W^- \to H d\bar{d}$	$-1.634 \cdot 10^{-21}$	$-1.633 \cdot 10^{-21}$	0.0005458	$3.469 \cdot 10^{-20}$	$3.469 \cdot 10^{-2}$	0	
$W^+W^- \to W^+W^-$	$-1.027 \cdot 10^{-8}$	$-1.027 \cdot 10^{-8}$	0	$1.555 \cdot 10^{-13}$	$3  1.555 \cdot 10^{-1}$	0	
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-4}$	0	1	

$b\bar{b} \to \mu^+\mu^-$	$6.998 \cdot 10^{-25}$	$6.834 \cdot 10^{-25}$	0.02343	$2.423 \cdot 10^{-26}$	$2.423 \cdot 10^{-26}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$3.711 \cdot 10^{-17}$	$3.711 \cdot 10^{-17}$	$-2.695 \cdot 10^{-8}$	$2.229 \cdot 10^{-22}$	$2.229 \cdot 10^{-22}$	0
$b\bar{b}  o t\bar{t}$	$-7.537 \cdot 10^{-14}$	$-7.537 \cdot 10^{-14}$	$-1.327 \cdot 10^{-8}$	$1.712 \cdot 10^{-19}$	$1.712 \cdot 10^{-19}$	0
$c\bar{c} \to \mu^+ \mu^-$	$1.277 \cdot 10^{-25}$	$6.589 \cdot 10^{-26}$	0.4841	$2.237 \cdot 10^{-27}$	$2.237 \cdot 10^{-27}$	0
$d\bar{d} \to c\bar{c}$	$8.224 \cdot 10^{-26}$	$4.364 \cdot 10^{-28}$	0.9947	$1.311 \cdot 10^{-29}$	$1.311 \cdot 10^{-29}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	$9.841 \cdot 10^{-30}$	1	$3.321 \cdot 10^{-31}$	$3.321 \cdot 10^{-31}$	0
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	$3.171 \cdot 10^{-32}$	1	$1.087 \cdot 10^{-33}$	$1.087 \cdot 10^{-33}$	0
$e^+e^- \rightarrow e^+e^-$	$6.974 \cdot 10^{-24}$	$8.917 \cdot 10^{-24}$	-0.2785	$4.413 \cdot 10^{-38}$	$4.606 \cdot 10^{-38}$	-0.04387
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$1.626 \cdot 10^{-20}$	$1.626 \cdot 10^{-20}$	$-5.966 \cdot 10^{-6}$	$4.884 \cdot 10^{-29}$	$4.884 \cdot 10^{-29}$	$-1.433 \cdot 10^{-7}$
$t\bar{t} \to t\bar{t}$	$-5.529 \cdot 10^{-13}$	$-5.529 \cdot 10^{-13}$	0	$3.017 \cdot 10^{-16}$	$3.017 \cdot 10^{-16}$	0
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$2.482 \cdot 10^{-23}$	$2.588 \cdot 10^{-23}$	-0.04275	$1.823 \cdot 10^{-35}$	$1.824 \cdot 10^{-35}$	-0.0004398
$zz \to W^+W^-$	$-1.009 \cdot 10^{-7}$	$-1.009 \cdot 10^{-7}$	0	$4.04 \cdot 10^{-14}$	$4.04 \cdot 10^{-14}$	0

#### 2.20 cdWRe

	interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
HH  o z ar b b	$1.317 \cdot 10^{-15}$	$1.317 \cdot 10^{-15}$	0	$2.419 \cdot 10^{-20}$	$2.419 \cdot 10^{-20}$	0		
$HH \to z c \bar{c}$	$-6.603 \cdot 10^{-16}$	$-6.603 \cdot 10^{-16}$	0	$3.404 \cdot 10^{-21}$	$3.404 \cdot 10^{-21}$	0		
HH  o zt ar t	$-5.068 \cdot 10^{-13}$	$-5.068 \cdot 10^{-13}$	0	$2.874 \cdot 10^{-17}$	$2.874 \cdot 10^{-17}$	0		
$HH \rightarrow zz$	$-5.121 \cdot 10^{-9}$	$-5.121 \cdot 10^{-9}$	0	$2.221 \cdot 10^{-13}$	$2.221 \cdot 10^{-13}$	0		
$HW^+  o \gamma t \bar{b}$	$-9.574 \cdot 10^{-14}$	$-9.574 \cdot 10^{-14}$	0	$5.201 \cdot 10^{-19}$	$5.201 \cdot 10^{-19}$	0		
$Hz \to \mu^+\mu^-$	$1.817 \cdot 10^{-14}$	$1.817 \cdot 10^{-14}$	0	$6.376 \cdot 10^{-19}$	$6.376 \cdot 10^{-19}$	0		

$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$4.601 \cdot 10^{-14}$	$4.601 \cdot 10^{-14}$	0	$1.612 \cdot 10^{-18}$	$1.612 \cdot 10^{-18}$	0
$Hz \to s\bar{s}$	$1.073 \cdot 10^{-13}$	$1.073 \cdot 10^{-13}$	0	$3.761 \cdot 10^{-18}$	$3.761 \cdot 10^{-18}$	0
$Hz \to t\bar{t}$	$8.634 \cdot 10^{-10}$	$8.634 \cdot 10^{-10}$	0	$3.275 \cdot 10^{-14}$	$3.275 \cdot 10^{-14}$	0
$W^+W^-  o Hb\bar{b}$	$-1.611 \cdot 10^{-12}$	$-1.611 \cdot 10^{-12}$	0	$4.053 \cdot 10^{-17}$	$4.053 \cdot 10^{-17}$	0
$W^+W^- \to Hc\bar{c}$	$-6.493 \cdot 10^{-14}$	$-6.493 \cdot 10^{-14}$	0	$5.03 \cdot 10^{-18}$	$5.03 \cdot 10^{-18}$	0
$W^+W^-  o H d \bar d$	$1.615 \cdot 10^{-14}$	$1.615 \cdot 10^{-14}$	0	$4.2 \cdot 10^{-19}$	$4.2 \cdot 10^{-19}$	0
$W^+W^- \rightarrow W^+W^-$	$-9.489 \cdot 10^{-6}$	$-9.489 \cdot 10^{-6}$	0	$3.272 \cdot 10^{-10}$	$3.272 \cdot 10^{-10}$	0
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$5.904 \cdot 10^{-14}$	$5.904 \cdot 10^{-14}$	0	$2.069 \cdot 10^{-18}$	$2.069 \cdot 10^{-18}$	0
$b\bar{b} \rightarrow \mu^+ \mu^-$	$8.12 \cdot 10^{-15}$	$8.12 \cdot 10^{-15}$	0	$1.728 \cdot 10^{-19}$	$1.728 \cdot 10^{-19}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$1.434 \cdot 10^{-14}$	$1.434 \cdot 10^{-14}$	0	$5.023 \cdot 10^{-19}$	$5.023 \cdot 10^{-19}$	0
$b\bar{b}  o b\bar{b}$	$-2.624 \cdot 10^{-12}$	$-2.624 \cdot 10^{-12}$	0	$1.722 \cdot 10^{-17}$	$1.722 \cdot 10^{-17}$	0
$b\bar{b}  o t\bar{t}$	$3.594 \cdot 10^{-12}$	$3.594 \cdot 10^{-12}$	0	$1.307 \cdot 10^{-18}$	$1.307 \cdot 10^{-18}$	0
$c\bar{c} \to \mu^+ \mu^-$	$-4.617 \cdot 10^{-15}$	$-4.617 \cdot 10^{-15}$	0	$1.279 \cdot 10^{-19}$	$1.279 \cdot 10^{-19}$	0
$d\bar{d} \to c\bar{c}$	$1.307 \cdot 10^{-14}$	$1.307 \cdot 10^{-14}$	0	$4.501 \cdot 10^{-19}$	$4.501 \cdot 10^{-19}$	0
$e^+\nu_\mu \to e^+\nu_\mu$	$4.325 \cdot 10^{-9}$	$4.325 \cdot 10^{-9}$	0	$1.515 \cdot 10^{-13}$	$1.515 \cdot 10^{-13}$	0
$e^+\nu_e \to e^+\nu_e$	$2.576 \cdot 10^{-11}$	$2.576 \cdot 10^{-11}$	0	$5.438 \cdot 10^{-16}$	$5.438 \cdot 10^{-16}$	0
$e^+\tau^- \to e^+\tau^-$	$-1.638 \cdot 10^{-13}$	$-1.638 \cdot 10^{-13}$	0	$1.291 \cdot 10^{-18}$	$1.291 \cdot 10^{-18}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	$-9.561 \cdot 10^{-15}$	$-9.561 \cdot 10^{-15}$	0	$3.209 \cdot 10^{-19}$	$3.209 \cdot 10^{-19}$	0
$e^+e^- \rightarrow e^+e^-$	$-1.934 \cdot 10^{-12}$	$-1.934 \cdot 10^{-12}$	0	$2.536 \cdot 10^{-17}$	$2.536 \cdot 10^{-17}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$1.881 \cdot 10^{-14}$	$1.881 \cdot 10^{-14}$	0	$6.591 \cdot 10^{-19}$	$6.591 \cdot 10^{-19}$	0
$s\bar{s} \to s\bar{s}$	$-1.548 \cdot 10^{-12}$	$-1.548 \cdot 10^{-12}$	0	$9.311 \cdot 10^{-18}$	$9.311 \cdot 10^{-18}$	0
$t\bar{t} \to t\bar{t}$	$-5.298 \cdot 10^{-12}$	$-5.298 \cdot 10^{-12}$	0	$2.93 \cdot 10^{-16}$	$2.93 \cdot 10^{-16}$	0
$tg \rightarrow bW^+$	$5.371 \cdot 10^{-11}$	$5.371 \cdot 10^{-11}$	0	$4.141 \cdot 10^{-15}$	$4.141 \cdot 10^{-15}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.325 \cdot 10^{-14}$	$1.325 \cdot 10^{-14}$	0	$4.644 \cdot 10^{-19}$	$4.644 \cdot 10^{-19}$	0
$u\bar{u} \to u\bar{u}$	$-1.874 \cdot 10^{-10}$	$-1.874 \cdot 10^{-10}$	0	$7.617 \cdot 10^{-15}$	$7.617 \cdot 10^{-15}$	0

#### 2.21 cdd

interference

square

	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH \to z\bar{b}b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
$HH \to zt\bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^- \to Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^-  o Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1

$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	)	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	)	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	)	1

# $2.22 \quad \text{cdd1}$

		inte	erference		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$HH  o z \bar b b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1		
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1		
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1		
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1		
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1		
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1		
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1		
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1		
$W^+W^-  o Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1		
$W^+W^- \to Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1		
$W^+W^-  o Hd\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1		
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1		
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1		
$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1		
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1		
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1		
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1		
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1		
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1		
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1		

$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \rightarrow e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

## 2.23 ceBRe

		erference		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1	
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1	
HH  o zt ar t	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1	
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1	
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1	
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1	
$W^+W^- \to H b \bar b$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1	
$W^+W^-  o Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1	
$W^+W^- \to W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1	
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1	

$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o \nu_e \bar{\nu}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b} \to t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e^-  o e^+\nu_e^-$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^-  o \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

### 2.24 ceHRe

		interfere		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to HH$	$-4.952 \cdot 10^{-15}$	$-4.952 \cdot 10^{-15}$	0	$2.465 \cdot 10^{-18}$	$2.465 \cdot 10^{-18}$	0	
$HH \to H \tau^+ \tau^-$	$-1.525 \cdot 10^{-21}$	$-1.525 \cdot 10^{-21}$	0	$7.038 \cdot 10^{-24}$	$7.038 \cdot 10^{-24}$	0	
$HH  o Hbar{b}$	$-4.741 \cdot 10^{-23}$	$-4.741 \cdot 10^{-23}$	0	$4.395 \cdot 10^{-25}$	$4.395 \cdot 10^{-25}$	0	
$HH \rightarrow W^+W^-$	$-4.014 \cdot 10^{-11}$	$-4.014 \cdot 10^{-11}$	0	$9.29 \cdot 10^{-18}$	$9.29 \cdot 10^{-18}$	0	
$HH \to W^+W^-\gamma$	$-1.596 \cdot 10^{-16}$	$-1.596 \cdot 10^{-16}$	0	$2.065 \cdot 10^{-23}$	$2.065 \cdot 10^{-23}$	0	
$HH \to W^+ e^- \bar{\nu}_e$	$1.436 \cdot 10^{-17}$	$1.436 \cdot 10^{-17}$	0	$1.583 \cdot 10^{-25}$	$1.583 \cdot 10^{-25}$	0	
$HH \to W^- u \bar{d}$	$7.19 \cdot 10^{-18}$	$7.19 \cdot 10^{-18}$	0	$6.717 \cdot 10^{-27}$	$6.717 \cdot 10^{-27}$	0	

$HH \to z\bar{b}b$	$1.038 \cdot 10^{-17}$	$1.038 \cdot 10^{-17}$	0	$7.045 \cdot 10^{-26}  7.045 \cdot 10^{-26}  0$
$HH \to zc\bar{c}$	$6.398 \cdot 10^{-18}$	$6.398 \cdot 10^{-18}$	0	$2.21 \cdot 10^{-24}$ $2.21 \cdot 10^{-24}$ 0
$HH  o zt\bar{t}$	$1.425 \cdot 10^{-15}$	$1.425 \cdot 10^{-15}$	0	$6.897 \cdot 10^{-24}  6.897 \cdot 10^{-24} \qquad 0$
$HH \rightarrow zz$	$-2.674 \cdot 10^{-11}$	$-2.674 \cdot 10^{-11}$	0	$4.61 \cdot 10^{-18}$ $4.61 \cdot 10^{-18}$ 0
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$ 0 1
$Hz \rightarrow \mu^{+}\mu^{-}$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$ 0 1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$ 0 1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$ 0 1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$ 0 1
$W^+W^-  o Hbar{b}$	$1.444 \cdot 10^{-16}$	$1.444 \cdot 10^{-16}$	$6.924 \cdot 10^{-8}$	$1.755 \cdot 10^{-23}  1.755 \cdot 10^{-23} \qquad 0$
$W^+W^- \to H c \bar c$	$-2.502 \cdot 10^{-19}$	$-2.502 \cdot 10^{-19}$	$5.995 \cdot 10^{-7}$	$2.462 \cdot 10^{-25}$ $2.462 \cdot 10^{-25}$ 0
$W^+W^-  o H d \bar d$	$-1.768 \cdot 10^{-22}$	$-1.759 \cdot 10^{-22}$	0.005045	$4.023 \cdot 10^{-28}  4.023 \cdot 10^{-28}  0$
$W^+W^- \to W^+W^-$	$-1.106 \cdot 10^{-9}$	$-1.106 \cdot 10^{-9}$	0	$1.804 \cdot 10^{-15}$ $1.804 \cdot 10^{-15}$ 0
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$ 0 1
$b\bar{b} \to \mu^+\mu^-$	$8.999 \cdot 10^{-26}$	$7.36 \cdot 10^{-26}$	0.1822	$2.811 \cdot 10^{-28}  2.811 \cdot 10^{-28}  0$
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$ 0 1
$b\bar{b}  o b\bar{b}$	$3.997 \cdot 10^{-18}$	$3.997 \cdot 10^{-18}$	$-1.001 \cdot 10^{-7}$	$2.586 \cdot 10^{-24}  2.586 \cdot 10^{-24}  0$
$b\bar{b}  o t\bar{t}$	$-8.117 \cdot 10^{-15}$	$-8.117 \cdot 10^{-15}$	$-1.109 \cdot 10^{-7}$	$1.985 \cdot 10^{-21}  1.985 \cdot 10^{-21} \qquad 0$
$c\bar{c} \to \mu^+ \mu^-$	$6.893 \cdot 10^{-26}$	$7.096 \cdot 10^{-27}$	0.8971	$2.595 \cdot 10^{-29}  2.595 \cdot 10^{-29}  0$
$d\bar{d} \to c\bar{c}$	$8.185 \cdot 10^{-26}$	$4.7 \cdot 10^{-29}$	0.9994	$1.521 \cdot 10^{-31}$ $1.521 \cdot 10^{-31}$ 0
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$ 0 1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$ 0
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	$1.06 \cdot 10^{-30}$	1	$3.851 \cdot 10^{-33}  3.851 \cdot 10^{-33} \qquad 0$
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	$3.415 \cdot 10^{-33}$	1	$1.26 \cdot 10^{-35}$ $1.26 \cdot 10^{-35}$ $4.761 \cdot 10^{-7}$
$e^+e^- \rightarrow e^+e^-$	$-9.823 \cdot 10^{-25}$	$9.603 \cdot 10^{-25}$	1.978	$3.782 \cdot 10^{-40}  5.342 \cdot 10^{-40} \qquad -0.4126$
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$ 0 1
$s\bar{s} \to s\bar{s}$	$1.751 \cdot 10^{-21}$	$1.751 \cdot 10^{-21}$	$-5.54 \cdot 10^{-5}$	$5.664 \cdot 10^{-31}$ $5.664 \cdot 10^{-31}$ $-1.342 \cdot 10^{-6}$
$t\bar{t} \to t\bar{t}$	$-5.955 \cdot 10^{-14}$	$-5.955 \cdot 10^{-14}$	0	$3.499 \cdot 10^{-18}  3.499 \cdot 10^{-18} \qquad 0$
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$ 0 1

$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$1.726 \cdot 10^{-24}$	$2.787 \cdot 10^{-24}$	-0.6146	$2.107 \cdot 10^{-37}$	$2.115 \cdot 10^{-37}$	-0.003998
$zz \to W^+W^-$	$-1.087 \cdot 10^{-8}$	$-1.087 \cdot 10^{-8}$	0	$4.686 \cdot 10^{-16}$	$4.686 \cdot 10^{-16}$	0

## 2.25 ceWRe

		inte	erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
HH  o z ar b b	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH  o zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
HH  o zt ar t	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1	
$W^+W^- \to Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1	
$W^+W^- \to W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1	
$b\bar{b} \rightarrow \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	
$b\bar{b}  ightarrow  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1	
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1	
b ar b  o t ar t	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1	
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1	
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1	
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1	

$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^- \rightarrow \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t}  o t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

### 2.26 ced

		erference		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH  o z \bar{b} b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH  o zt\bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1	
$W^+W^- \to H c \bar c$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1	
$W^+W^- \to W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1	

$b\bar{b}  o \mu^+\mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b} \to t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

### 2.27 cee

		$int\epsilon$	erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o z \bar b b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1		
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1		
$HH  o zt \bar t$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1		
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1		
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1		
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1		

$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^-  o Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+\mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# 2.28 ceu

	interference		squar	ce
mod1	$\mathtt{mod2}  1-\mathtt{mod2}/\mathtt{mod1}$	mod1	mod2	1 - mod2/mod1

$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \rightarrow \mu^{+}\mu^{-}$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz  o  u_{ au} \bar{ u}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^-  o Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^- \to Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^-  o Hd\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^- \rightarrow W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$\nu_e \bar{\nu}_e  o \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1

$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$ 0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$ 0	1

# 2.29 cld

		$\mathrm{int}\epsilon$	erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH  o z \bar b b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH  o zt \bar t$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
$W^+W^-  o Hb\bar{b}$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1	
$W^+W^-  o Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1	
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
$ u_e \bar{ u}_e  ightarrow  u_\mu \bar{ u}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1	
$b\bar{b}  o \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1	
b ar b  o b ar b	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1	
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1	
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1	
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1	
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1	
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1	

$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

## **2.30** cle

		interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$HH  o z \bar{b} b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1		
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1		
$HH \to zt\bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1		
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1		
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1		
$Hz  o \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1		
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1		
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1		
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1		
$W^+W^- \to H c \bar c$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1		
$W^+W^-  o H d \bar d$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1		
$W^+W^- \rightarrow W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1		
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1		
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1		

$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b} \to t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^- \to \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# 2.31 cledqRe

		$\mathrm{int}\epsilon$	erference		square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar b b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	

$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^- \to Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^- \rightarrow W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t}  o t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \rightarrow bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

### 2.32 clequ1Re

$HH  o zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
$HH  o zt\bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \rightarrow \mu^+ \mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^- \to Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^-  o Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b} \to t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s}  o s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1

# 2.33 clequ3Re

		inte	erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1		
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1		
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1		
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1		
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1		
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1		
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1		
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1		
$W^+W^-  o Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1		
$W^+W^- \to H c \bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1		
$W^+W^-  o Hd\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1		
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1		
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1		
$b\bar{b} \to \mu^+\mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1		
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1		
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1		
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1		
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1		
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1		
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1		
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1		
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1		

$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

## 2.34 cll

		$\mathrm{int}\epsilon$	erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1	
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1	
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1	
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1	
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1	
$Hz  o \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1	
$W^+W^-  o Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1	
$W^+W^- \to Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1	
$W^+W^-  o Hd\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1	
$W^+W^- \rightarrow W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1	
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1	
$b\bar{b} \rightarrow \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1	
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1	
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1	

$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$tg \to bW^+$ $-1.968 \cdot 10^{-23}$ 0 1 $1.164 \cdot 10^{-39}$ 0 1 $u\bar{u} \to \nu_e \bar{\nu}_e$ 1.898 · 10 <sup>-26</sup> 0 1 2.107 · 10 <sup>-42</sup> 0 1	$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$ 1.898 · 10 <sup>-26</sup> 0 1 2.107 · 10 <sup>-42</sup> 0 1	$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
	$tg \rightarrow bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to u\bar{u}$	$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
	$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

## 2.35 cll1

		interfere	ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to HH$	$2.282 \cdot 10^{-14}$	$2.282 \cdot 10^{-14}$	0	$6.313 \cdot 10^{-17}$	$6.313 \cdot 10^{-17}$	0		
$HH \to H \tau^+ \tau^-$	$-7.722 \cdot 10^{-23}$	$-7.722 \cdot 10^{-23}$	0	$4.05 \cdot 10^{-24}$	$4.05 \cdot 10^{-24}$	0		
$HH \to Hb\bar{b}$	$4.411 \cdot 10^{-22}$	$4.411 \cdot 10^{-22}$	0	$8.873 \cdot 10^{-24}$	$8.873 \cdot 10^{-24}$	0		
$HH \to W^+W^-$	-1.997	-1.997	0	0.1938	0.1938	0		
$HH  o W^+W^-\gamma$	$-1.492 \cdot 10^{-6}$	$-1.492 \cdot 10^{-6}$	0	$3.254 \cdot 10^{-7}$	$3.254 \cdot 10^{-7}$	0		
$HH \to W^+ e^- \bar{\nu}_e$	$-5.144 \cdot 10^{-8}$	$-5.144 \cdot 10^{-8}$	0	$8.264 \cdot 10^{-10}$	$8.264 \cdot 10^{-10}$	0		
$HH  o W^- u \bar{d}$	$-3.316 \cdot 10^{-8}$	$-3.316 \cdot 10^{-8}$	0	$7.558 \cdot 10^{-9}$	$7.558 \cdot 10^{-9}$	0		
$HH  o z \bar{b} b$	$-1.536 \cdot 10^{-12}$	$-1.536 \cdot 10^{-12}$	0	$3.292 \cdot 10^{-14}$	$3.292 \cdot 10^{-14}$	0		
$HH \to zc\bar{c}$	$7.702 \cdot 10^{-13}$	$7.702 \cdot 10^{-13}$	0	$4.631 \cdot 10^{-15}$	$4.631 \cdot 10^{-15}$	0		
HH  o zt ar t	$4.257 \cdot 10^{-10}$	$4.257 \cdot 10^{-10}$	0	$2.985 \cdot 10^{-11}$	$2.985 \cdot 10^{-11}$	0		

$HH \rightarrow zz$	$5.973 \cdot 10^{-6}$ $5.973 \cdot 10^{-6}$	0	$3.022 \cdot 10^{-7}$ $3.022 \cdot 10^{-7}$	0
$HW^+  o \gamma t \bar{b}$	$-1.016 \cdot 10^{-8}$ $-1.016 \cdot 10^{-8}$	0	$1.962 \cdot 10^{-9}$ $1.962 \cdot 10^{-9}$	0
$HW^+ \rightarrow \gamma u \bar{d}$	$6.646 \cdot 10^{-12}$ $6.646 \cdot 10^{-12}$	0	$1.055 \cdot 10^{-13}$ $1.055 \cdot 10^{-13}$	0
$HW^+ \rightarrow u\bar{d}$	$1.052 \cdot 10^{-6}$ $1.052 \cdot 10^{-6}$	0	$1.01 \cdot 10^{-10}$ $1.01 \cdot 10^{-10}$	0
$HW^- \to \gamma e^- \bar{\nu}_e$	$1.112 \cdot 10^{-8}$ $1.112 \cdot 10^{-8}$	0	$7.642 \cdot 10^{-11}  7.642 \cdot 10^{-11}$	0
$HW^-  o \mu^- \bar{\nu}_\mu$	$7.832 \cdot 10^{-7}$ $7.832 \cdot 10^{-7}$	0	$1.497 \cdot 10^{-9}$ $1.497 \cdot 10^{-9}$	0
$Hz \rightarrow \mu^+\mu^-$	$-2.119 \cdot 10^{-11}  -2.119 \cdot 10^{-11}$	0	$8.675 \cdot 10^{-13}  8.675 \cdot 10^{-13}$	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$-5.367 \cdot 10^{-11}  -5.367 \cdot 10^{-11}$	0	$2.193 \cdot 10^{-12}  2.193 \cdot 10^{-12}$	0
$Hz \to s\bar{s}$	$-1.251 \cdot 10^{-10}$ $-1.251 \cdot 10^{-10}$	0	$5.117 \cdot 10^{-12}  5.117 \cdot 10^{-12}$	0
$Hz \to t\bar{t}$	$6.976 \cdot 10^{-7}$ $6.976 \cdot 10^{-7}$	0	$2.276 \cdot 10^{-8}$ $2.276 \cdot 10^{-8}$	0
$W^+W^- \to H b \bar b$	$-7.376 \cdot 10^{-7}$ $-7.376 \cdot 10^{-7}$	0	$3.681 \cdot 10^{-8}$ $3.681 \cdot 10^{-8}$	0
$W^+W^-  o Hc\bar{c}$	$-6.208 \cdot 10^{-8}$ $-6.208 \cdot 10^{-8}$	0	$9.481 \cdot 10^{-10}  9.481 \cdot 10^{-10}$	0
$W^+W^- \to H d\bar{d}$	$-6.648 \cdot 10^{-9}$ $-6.648 \cdot 10^{-9}$	0	$7.159 \cdot 10^{-11}  7.159 \cdot 10^{-11}$	0
$W^+W^- \to W^+W^-$	$0.01107 \qquad 0.01107$	0	0.0004451 $0.0004451$	0
$W^+W^- \to \gamma\gamma$	-0.1024 $-0.1024$	0	$0.0002873 \qquad 0.0002873$	0
$W^+W^- \to \gamma\gamma\gamma$	$-1.187 \cdot 10^{-8}$ $-1.187 \cdot 10^{-8}$	0	$3.489 \cdot 10^{-11}  3.489 \cdot 10^{-11}$	0
$\bar{b}t \to \bar{d}u$	$7.615 \cdot 10^{-6}$ $7.615 \cdot 10^{-6}$	0	$6.572 \cdot 10^{-10}  6.572 \cdot 10^{-10}$	0
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$-6.886 \cdot 10^{-11}  -6.886 \cdot 10^{-11}$	0	$2.814 \cdot 10^{-12}  2.814 \cdot 10^{-12}$	0
$b\bar{b} \to \mu^+\mu^-$	$-9.472 \cdot 10^{-12}  -9.472 \cdot 10^{-12}$	0	$2.351 \cdot 10^{-13}$ $2.351 \cdot 10^{-13}$	0
$b\bar{b}  o  u_e \bar{ u}_e$	$-1.672 \cdot 10^{-11}  -1.672 \cdot 10^{-11}$	0	$6.834 \cdot 10^{-13}  6.834 \cdot 10^{-13}$	0
$b\bar{b}  o b\bar{b}$	$3.06 \cdot 10^{-9}$ $3.06 \cdot 10^{-9}$	0	$2.343 \cdot 10^{-11}  2.343 \cdot 10^{-11}$	0
$b\bar{b}  o t\bar{t}$	-0.04443 $-0.04443$	0	$0.0003541 \qquad 0.0003541$	0
$b\bar{t} \to e^- \bar{\nu}_e$	$2.973 \cdot 10^{-6}$ $2.973 \cdot 10^{-6}$	0	$2.566 \cdot 10^{-10}$ $2.566 \cdot 10^{-10}$	0
$c\bar{c} \to \mu^+ \mu^-$	$5.386 \cdot 10^{-12}$ $5.386 \cdot 10^{-12}$	0	$1.74 \cdot 10^{-13} \qquad 1.74 \cdot 10^{-13}$	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	$1.178 \cdot 10^{-6}$ $1.178 \cdot 10^{-6}$	0	$1.019 \cdot 10^{-10}$ $1.019 \cdot 10^{-10}$	0
$d\bar{d} \to c\bar{c}$	$-1.524 \cdot 10^{-11}  -1.524 \cdot 10^{-11}$	0	$6.123 \cdot 10^{-13}  6.123 \cdot 10^{-13}$	0
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$-5.044 \cdot 10^{-6}$ $-5.044 \cdot 10^{-6}$	0	$2.062 \cdot 10^{-7}$ $2.062 \cdot 10^{-7}$	0
$e^+\nu_e \to \mu^+\nu_\mu$	$9.684 \cdot 10^{-7}$ $9.684 \cdot 10^{-7}$	0	$8.356 \cdot 10^{-11}  8.356 \cdot 10^{-11}$	0
$e^+\nu_e \to e^+\nu_e$	$2.18 \cdot 10^{-5} \qquad 2.18 \cdot 10^{-5}$	0	$1.402 \cdot 10^{-9}$ $1.402 \cdot 10^{-9}$	0

$e^+\tau^- \to e^+\tau^-$	$1.911 \cdot 10^{-10}$	$1.911 \cdot 10^{-10}$	0	$1.757 \cdot 10^{-12}$	$1.757 \cdot 10^{-12}$	0
$e^+e^- \rightarrow \mu^+\mu^-$	$1.115 \cdot 10^{-11}$	$1.115 \cdot 10^{-11}$	0	$4.366 \cdot 10^{-13}$	$4.366 \cdot 10^{-13}$	0
$e^+e^- \rightarrow e^+e^-$	$2.256 \cdot 10^{-9}$	$2.256 \cdot 10^{-9}$	0	$3.451 \cdot 10^{-11}$	$3.451 \cdot 10^{-11}$	0
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$-2.194 \cdot 10^{-11}$	$-2.194 \cdot 10^{-11}$	0	$8.967 \cdot 10^{-13}$	$8.967 \cdot 10^{-13}$	0
$s\bar{s} \to s\bar{s}$	$1.805 \cdot 10^{-9}$	$1.805 \cdot 10^{-9}$	0	$1.267 \cdot 10^{-11}$	$1.267 \cdot 10^{-11}$	0
$t\bar{t} \to t\bar{t}$	$6.181 \cdot 10^{-9}$	$6.181 \cdot 10^{-9}$	0	$3.988 \cdot 10^{-10}$	$3.988 \cdot 10^{-10}$	0
$tg \to bW^+$	$1.946 \cdot 10^{-8}$	$1.946 \cdot 10^{-8}$	0	$5.438 \cdot 10^{-10}$	$5.438 \cdot 10^{-10}$	0
$u\bar{d} \to c\bar{s}$	$1.33 \cdot 10^{-7}$	$1.33 \cdot 10^{-7}$	0	$1.148 \cdot 10^{-11}$	$1.148 \cdot 10^{-11}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$-1.546 \cdot 10^{-11}$	$-1.546 \cdot 10^{-11}$	0	$6.318 \cdot 10^{-13}$	$6.318 \cdot 10^{-13}$	0
$u\bar{u} \to u\bar{u}$	$2.185 \cdot 10^{-7}$	$2.185 \cdot 10^{-7}$	0	$1.036 \cdot 10^{-8}$	$1.036 \cdot 10^{-8}$	0
$zz \to W^+W^-$	3.753	3.753	0	0.1158	0.1158	0

# 2.36 clq1

		erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH \to z c \bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
HH  o zt ar t	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^-  o Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1

$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

# $2.37 \quad \mathrm{clq}3$

		interference				square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$			
$HH  o z \bar{b} b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1			
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1			
$HH \to zt\bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1			
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1			
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1			
$Hz \to \mu^+ \mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1			

$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^-  o Hb\bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^- \to Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^- \to W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^- \to \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

### 2.38 clu

$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \rightarrow \mu^{+}\mu^{-}$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz  o  u_{ au} \bar{ u}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^-  o Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^- \to Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^-  o Hd\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^- \rightarrow W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$\nu_e \bar{\nu}_e  o \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1

$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$ 0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$ 0	1

# 2.39 cqd1

		$\mathrm{int}\epsilon$	erference		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o z \bar{b} b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1		
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1		
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1		
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1		
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1		
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1		
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1		
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1		
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1		
$W^+W^- \to Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1		
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1		
$W^+W^- \to W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1		
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1		
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1		
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1		
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1		
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1		
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1		
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1		
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1		
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1		

$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# 2.40 cqd8

		inte	erference		square			
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$		
$HH  o z \bar b b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1		
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1		
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1		
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1		
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1		
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1		
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1		
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1		
$W^+W^-  o Hb\bar{b}$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1		
$W^+W^- \to Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1		
$W^+W^-  o Hd\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1		
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1		
$\nu_e \bar{\nu}_e  o \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1		
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1		

$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# **2.41** cqe

		inte	erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z\bar{b}b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1		
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1		
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1		
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1		
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1		
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1		
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1		

$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^- \to Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^- \rightarrow W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  ightarrow  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

### $2.42 \quad \mathrm{cqq1}$

$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
$HH  o zt\bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
$Hz \rightarrow \mu^+ \mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^- \to H c \bar c$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o \nu_e \bar{\nu}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$bar{b}  ightarrow bar{ar{b}}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e^- \rightarrow e^+\nu_e^-$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^- \rightarrow \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s}  o  u_{ au} ar{ u}_{ au}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s}  o s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1

# 2.43 cqq11

		inte		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar b b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
$W^+W^-  o Hbar{b}$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1	
$W^+W^- \to H c \bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1	
$W^+W^-  o Hd\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1	
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1	
$b\bar{b} \to \mu^+\mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1	
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1	
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1	
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1	
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1	
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1	
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1	
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1	

$e^+e^- \to \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \rightarrow bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# 2.44 cqq3

		$\mathrm{int}\epsilon$	erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH  o z \bar{b} b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH  o zt\bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1	
$W^+W^-  o Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1	
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1	
$b\bar{b} \rightarrow \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1	

$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b} \to t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

## $2.45 \quad \text{cqq} 31$

		interference			square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar{b} b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	

$W^+W^-  o Hb\bar{b}$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^- \to H c \bar c$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$\nu_e \bar{\nu}_e  o \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  ightarrow  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$bar{b}  o bar{ar{b}}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \rightarrow e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t}  o t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

#### 2.46 cqu1

$HH  o zt\bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \rightarrow \mu^+ \mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz  o s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^-  o Hbar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^- \to Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^-  o Hd\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^- \rightarrow W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$\nu_e \bar{\nu}_e  o \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
b ar b  o b ar b	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s}  o s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

## 2.47 cqu8

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1			
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1	
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1	
$HH  o zt\bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1	
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1	
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1	
$W^+W^- \to H b \bar b$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1	
$W^+W^- \to Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1	
$W^+W^- \to W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1	
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1	
$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1	
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1	
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1	
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1	
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1	
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1	
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1	
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1	
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1	
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1	
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1	

$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t}  o t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \rightarrow bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

## 2.48 cquqd11Re

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod1  mod2  1 - mod2		
$HH \to z\bar{b}b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1	
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1	
$HH \to zt\bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1	
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1	
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1	
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1	
$W^+W^- \to H b \bar b$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1	
$W^+W^-  o Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1	
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1	
$ u_e \bar{\nu}_e \rightarrow \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1	
$b\bar{b}  o \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1	
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1	
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1	
$b\bar{b} \to t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1	

$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \rightarrow c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e^- \rightarrow e^+\nu_e^-$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \rightarrow e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s}  o  u_{ au} \bar{ u}_{ au}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \rightarrow \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

# 2.49 cquqd1Re

	interference				square		
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1	
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1	
$HH  o zt\bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1	
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1	
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1	
$W^+W^-  o Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1	
$W^+W^- \to H c \bar c$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1	

$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b} \to t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

# $2.50 \quad {\rm cquqd} 81 {\rm Re}$

		interference			square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH \to z\bar{b}b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1		
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1		
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1		
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1		

$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
$Hz \rightarrow \mu^+ \mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1
$Hz \rightarrow \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^- \to Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^- \rightarrow W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b}  o \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  ightarrow  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^- \to \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t}  o t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \rightarrow bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# 2.51 cquqd8Re

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
$HH  o z \bar b b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1	
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1	
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1	
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1	
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{ au} \bar{\nu}_{ au}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1	
$W^+W^-  o Hb\bar{b}$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1	
$W^+W^- \to Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1	
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1	
$W^+W^- \rightarrow W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1	
$\nu_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1	
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1	
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1	
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1	
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1	
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1	
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1	
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1	
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1	
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1	
$e^+e^- \to \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1	
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1	
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1	
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1	

$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# 2.52 cuBRe

		erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz  o \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^-  o Hb\bar b$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^- \to H c \bar c$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^-  o H d \bar d$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^- \rightarrow W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \rightarrow \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1

± . ±	F FFO 10-23	0	1	0.000 10-39	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	U	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \rightarrow bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

# 2.53 cuGRe

		erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH  o zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
HH  o zt ar t	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^- \to H c \bar c$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^- \to W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1

$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^-  o \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t \bar t  o t \bar t$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

### 2.54 cuHRe

		ence		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	
$HH \to HH$	$-2.283 \cdot 10^{-15}$	$-2.283 \cdot 10^{-15}$	0	$5.238 \cdot 10^{-19}$	$5.238 \cdot 10^{-19}$	0	
$HH  o H  au^+  au^-$	$-7.029 \cdot 10^{-22}$	$-7.029 \cdot 10^{-22}$	0	$1.496 \cdot 10^{-24}$	$1.496 \cdot 10^{-24}$	0	
$HH  o Hbar{b}$	$-2.185 \cdot 10^{-23}$	$-2.185 \cdot 10^{-23}$	0	$9.34 \cdot 10^{-26}$	$9.34 \cdot 10^{-26}$	0	
$HH  o W^+W^-$	$-1.85 \cdot 10^{-11}$	$-1.85 \cdot 10^{-11}$	0	$1.974 \cdot 10^{-18}$	$1.974 \cdot 10^{-18}$	0	
$HH  o W^+W^-\gamma$	$-7.355 \cdot 10^{-17}$	$-7.355 \cdot 10^{-17}$	0	$4.389 \cdot 10^{-24}$	$4.389 \cdot 10^{-24}$	0	
$HH  o W^+ e^- \bar{\nu}_e$	$6.621 \cdot 10^{-18}$	$6.621 \cdot 10^{-18}$	0	$3.365 \cdot 10^{-26}$	$3.365 \cdot 10^{-26}$	0	
$HH \to W^- u \bar{d}$	$3.314 \cdot 10^{-18}$	$3.314 \cdot 10^{-18}$	0	$1.427 \cdot 10^{-27}$	$1.427 \cdot 10^{-27}$	0	

HH  o z ar b b	$4.786 \cdot 10^{-18}$	$4.786 \cdot 10^{-18}$	0	$1.497 \cdot 10^{-26}$	$1.497 \cdot 10^{-26}$	0
$HH \rightarrow zc\bar{c}$	$2.949 \cdot 10^{-18}$	$2.949 \cdot 10^{-18}$	0	$4.696 \cdot 10^{-25}$	$4.696 \cdot 10^{-25}$	0
$HH \rightarrow zt\bar{t}$	$6.567 \cdot 10^{-16}$	$6.567 \cdot 10^{-16}$	0	$1.466 \cdot 10^{-24}$		0
$HH \rightarrow zz$		$-1.233 \cdot 10^{-11}$	0	$9.797 \cdot 10^{-19}$		0
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz  o \mu^+ \dot{\mu}^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz  o \nu_{ au} \bar{\nu}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \rightarrow s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$6.657 \cdot 10^{-17}$	$6.657 \cdot 10^{-17}$	$2.403 \cdot 10^{-7}$	$3.729 \cdot 10^{-24}$	$3.729 \cdot 10^{-24}$	0
$W^+W^- \to Hc\bar{c}$	$-1.153 \cdot 10^{-19}$	$-1.153 \cdot 10^{-19}$	$1.214 \cdot 10^{-6}$	$5.232 \cdot 10^{-26}$	$5.232 \cdot 10^{-26}$	0
$W^+W^-  o Hd\bar{d}$	$-8.199 \cdot 10^{-23}$	$-8.11 \cdot 10^{-23}$	0.01088	$8.55 \cdot 10^{-29}$	$8.55 \cdot 10^{-29}$	0
$W^+W^- \to W^+W^-$	$-5.097 \cdot 10^{-10}$	$-5.097 \cdot 10^{-10}$	0	$3.833 \cdot 10^{-10}$	$3.833 \cdot 10^{-16}$	0
$ u_e \bar{\nu}_e  o  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-4}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$5.032 \cdot 10^{-26}$	$3.393 \cdot 10^{-26}$	0.3258	$5.973 \cdot 10^{-29}$		0
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$		1
$b\bar{b}  o b\bar{b}$	$1.842 \cdot 10^{-18}$	$1.842 \cdot 10^{-18}$	$-2.171 \cdot 10^{-7}$	$5.495 \cdot 10^{-25}$		0
$b\bar{b}  o t\bar{t}$	$-3.742 \cdot 10^{-15}$	$-3.742 \cdot 10^{-15}$	$-2.405 \cdot 10^{-7}$	$4.219 \cdot 10^{-23}$		0
$c\bar{c} \rightarrow \mu^+\mu^-$	$6.511 \cdot 10^{-26}$	$3.271 \cdot 10^{-27}$	0.9498	$5.514 \cdot 10^{-30}$		0
$d\bar{d} \to c\bar{c}$	$8.182 \cdot 10^{-26}$	$2.167 \cdot 10^{-29}$	0.9997	$3.231 \cdot 10^{-35}$		0
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$		1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$		1	$8.185 \cdot 10^{-3}$		$1.222 \cdot 10^{-8}$
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	$1.574 \cdot 10^{-33}$	1	$2.678 \cdot 10^{-30}$		$2.128 \cdot 10^{-6}$
$e^+e^- \rightarrow e^+e^-$	$-1.5 \cdot 10^{-24}$	$4.427 \cdot 10^{-25}$	1.295	$7.329 \cdot 10^{-4}$		-0.5492
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-4}$		1
$s\bar{s} \to s\bar{s}$	$8.07 \cdot 10^{-22}$	$8.071 \cdot 10^{-22}$	-0.0001202	$1.204 \cdot 10^{-3}$		$-2.825 \cdot 10^{-6}$
$t\bar{t} \to t\bar{t}$	$-2.745 \cdot 10^{-14}$	$-2.745 \cdot 10^{-14}$	0	$7.436 \cdot 10^{-19}$		0
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1

$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$2.239 \cdot 10^{-25}$	$1.285 \cdot 10^{-24}$	-4.738	$4.458 \cdot 10^{-38}$	$4.496 \cdot 10^{-38}$	-0.008423
$zz \to W^+W^-$	$-5.01 \cdot 10^{-9}$	$-5.01 \cdot 10^{-9}$	0	$9.958 \cdot 10^{-17}$	$9.958 \cdot 10^{-17}$	0

# 2.55 cuWRe

	interference				square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$	
HH  o z ar b b	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1	
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1	
HH  o zt ar t	$1.495 \cdot 10^{-9}$	$1.495 \cdot 10^{-9}$	0	$9.093 \cdot 10^{-12}$	$9.093 \cdot 10^{-12}$	0	
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1	
$HW^+ \to \gamma t \bar{b}$	$7.289 \cdot 10^{-12}$	$7.289 \cdot 10^{-12}$	0	$3.781 \cdot 10^{-14}$	$3.781 \cdot 10^{-14}$	0	
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1	
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1	
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1	
$Hz \to t\bar{t}$	$-1.989 \cdot 10^{-6}$	$-1.989 \cdot 10^{-6}$	0	$1.545 \cdot 10^{-7}$	$1.545 \cdot 10^{-7}$	0	
$W^+W^-  o Hbar b$	$2.076 \cdot 10^{-8}$	$2.076 \cdot 10^{-8}$	0	$1.259 \cdot 10^{-10}$	$1.259 \cdot 10^{-10}$	0	
$W^+W^- \to H c \bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1	
$W^+W^-  o H d \bar d$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1	
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1	
$ u_e \bar{\nu}_e  ightarrow  u_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1	
$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1	
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1	
b ar b  o b ar b	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1	
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1	
$c\bar{c} \to \mu^+ \mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1	
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1	
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1	

$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \rightarrow e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-2.931 \cdot 10^{-8}$	$-2.931 \cdot 10^{-8}$	0	$2.581 \cdot 10^{-9}$	$2.581 \cdot 10^{-9}$	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

# $2.56 \quad \text{cud} 1$

		erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to z\bar{b}b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1
$HH \to z t \bar{t}$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^- \to Hb\bar{b}$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^- \to H c \bar c$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^- \to W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1

$b\bar{b}  o \mu^+\mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  ightarrow  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+ \mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_{\mu} \to e^+\nu_{\mu}$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^- \to \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# $2.57 \quad \text{cud8}$

		$int\epsilon$	erference		square			
	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$	mod1	mod2	$1-\mathtt{mod}2/\mathtt{mod}1$		
$HH  o z \bar b b$	$4.173 \cdot 10^{-27}$	0	1	$2.429 \cdot 10^{-43}$	0	1		
$HH \to zc\bar{c}$	$-2.092 \cdot 10^{-27}$	0	1	$3.417 \cdot 10^{-44}$	0	1		
$HH  o zt \bar t$	$-1.183 \cdot 10^{-24}$	0	1	$1.718 \cdot 10^{-40}$	0	1		
$HH \rightarrow zz$	$-1.623 \cdot 10^{-20}$	0	1	$2.229 \cdot 10^{-36}$	0	1		
$HW^+  o \gamma t \bar{b}$	$7.116 \cdot 10^{-26}$	0	1	$2.873 \cdot 10^{-43}$	0	1		
$Hz \to \mu^+\mu^-$	$5.756 \cdot 10^{-26}$	0	1	$6.401 \cdot 10^{-42}$	0	1		
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.458 \cdot 10^{-25}$	0	1	$1.618 \cdot 10^{-41}$	0	1		

$Hz \to s\bar{s}$	$3.399 \cdot 10^{-25}$	0	1	$3.776 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-1.626 \cdot 10^{-21}$	0	1	$1.251 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.448 \cdot 10^{-25}$	0	1	$1.273 \cdot 10^{-40}$	0	1
$W^+W^-  o Hc\bar{c}$	$-2.057 \cdot 10^{-25}$	0	1	$5.049 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$5.118 \cdot 10^{-26}$	0	1	$4.216 \cdot 10^{-42}$	0	1
$W^+W^-  o W^+W^-$	$-3.007 \cdot 10^{-17}$	0	1	$3.284 \cdot 10^{-33}$	0	1
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$1.87 \cdot 10^{-25}$	0	1	$2.077 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$2.573 \cdot 10^{-26}$	0	1	$1.735 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$4.542 \cdot 10^{-26}$	0	1	$5.043 \cdot 10^{-42}$	0	1
$b\bar{b}  o b\bar{b}$	$-8.313 \cdot 10^{-24}$	0	1	$1.729 \cdot 10^{-40}$	0	1
$b\bar{b}  o t\bar{t}$	$1.139 \cdot 10^{-23}$	0	1	$1.312 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+\mu^-$	$-1.463 \cdot 10^{-26}$	0	1	$1.284 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$4.141 \cdot 10^{-26}$	0	1	$4.518 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$1.37 \cdot 10^{-20}$	0	1	$1.521 \cdot 10^{-36}$	0	1
$e^+\nu_e \to e^+\nu_e$	$8.161 \cdot 10^{-23}$	0	1	$5.459 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-5.19 \cdot 10^{-25}$	0	1	$1.296 \cdot 10^{-41}$	0	1
$e^+e^-  o \mu^+\mu^-$	$-3.029 \cdot 10^{-26}$	0	1	$3.222 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-6.129 \cdot 10^{-24}$	0	1	$2.546 \cdot 10^{-40}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$5.959 \cdot 10^{-26}$	0	1	$6.616 \cdot 10^{-42}$	0	1
$s\bar{s} \to s\bar{s}$	$-4.904 \cdot 10^{-24}$	0	1	$9.348 \cdot 10^{-41}$	0	1
$t\bar{t} \to t\bar{t}$	$-1.679 \cdot 10^{-23}$	0	1	$2.942 \cdot 10^{-39}$	0	1
$tg \to bW^+$	$-3.992 \cdot 10^{-23}$	0	1	$2.288 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$4.199 \cdot 10^{-26}$	0	1	$4.662 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-5.937 \cdot 10^{-22}$	0	1	$7.647 \cdot 10^{-38}$	0	1

# 2.58 cuu

	interference		square
mod1	mod2  1 - mod2/mod1	mod1	mod2  1 - mod2/mod3

$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+ \to \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \rightarrow \mu^{+}\mu^{-}$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz  o  u_{ au} \bar{ u}_{ au}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^-  o Hb\bar{b}$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^- \to Hc\bar{c}$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^-  o Hd\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^- \rightarrow W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$\nu_e \bar{\nu}_e  o \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+ \mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+\mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1
$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau} \bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1

$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$ 0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$ 0	1

### 2.59 cuu1

		erference		square		
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH  o z \bar{b} b$	$-3.256 \cdot 10^{-29}$	0	1	$8.637 \cdot 10^{-44}$	0	1
$HH \to zc\bar{c}$	$-5.493 \cdot 10^{-28}$	0	1	$8.929 \cdot 10^{-43}$	0	1
$HH \to z t \bar{t}$	$4.355 \cdot 10^{-24}$	0	1	$5.567 \cdot 10^{-41}$	0	1
$HH \rightarrow zz$	$-1.538 \cdot 10^{-20}$	0	1	$1.964 \cdot 10^{-36}$	0	1
$HW^+  o \gamma t \bar{b}$	$4.895 \cdot 10^{-27}$	0	1	$1.705 \cdot 10^{-44}$	0	1
$Hz \to \mu^+\mu^-$	$6.583 \cdot 10^{-26}$	0	1	$7.32 \cdot 10^{-42}$	0	1
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	$1.135 \cdot 10^{-25}$	0	1	$1.26 \cdot 10^{-41}$	0	1
$Hz \to s\bar{s}$	$3.119 \cdot 10^{-25}$	0	1	$3.466 \cdot 10^{-41}$	0	1
$Hz \to t\bar{t}$	$-2.289 \cdot 10^{-21}$	0	1	$1.846 \cdot 10^{-37}$	0	1
$W^+W^- \to H b \bar b$	$1.525 \cdot 10^{-23}$	0	1	$1.145 \cdot 10^{-40}$	0	1
$W^+W^- \to H c \bar c$	$-1.465 \cdot 10^{-25}$	0	1	$2.103 \cdot 10^{-41}$	0	1
$W^+W^- \to H d\bar{d}$	$-8.92 \cdot 10^{-25}$	0	1	$3.247 \cdot 10^{-40}$	0	1
$W^+W^-  o W^+W^-$	$-5.322 \cdot 10^{-19}$	0	1	$7.661 \cdot 10^{-35}$	0	1
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	$2.159 \cdot 10^{-25}$	0	1	$2.398 \cdot 10^{-41}$	0	1
$b\bar{b} \to \mu^+\mu^-$	$1.639 \cdot 10^{-26}$	0	1	$1.552 \cdot 10^{-42}$	0	1
$b\bar{b}  o  u_e \bar{ u}_e$	$7.959 \cdot 10^{-27}$	0	1	$8.837 \cdot 10^{-43}$	0	1
$b\bar{b}  o b\bar{b}$	$-3.956 \cdot 10^{-25}$	0	1	$9.016 \cdot 10^{-42}$	0	1
$b\bar{b}  o t\bar{t}$	$9.089 \cdot 10^{-22}$	0	1	$1.568 \cdot 10^{-41}$	0	1
$c\bar{c} \to \mu^+\mu^-$	$6.184 \cdot 10^{-26}$	0	1	$1.788 \cdot 10^{-42}$	0	1
$d\bar{d} \to c\bar{c}$	$8.18 \cdot 10^{-26}$	0	1	$6.588 \cdot 10^{-42}$	0	1
$e^+\nu_\mu \to e^+\nu_\mu$	$4.345 \cdot 10^{-23}$	0	1	$4.824 \cdot 10^{-39}$	0	1
$e^+\nu_e \to e^+\nu_e$	$5.578 \cdot 10^{-23}$	0	1	$3.632 \cdot 10^{-39}$	0	1

$e^+\tau^- \to e^+\tau^-$	$-3.722 \cdot 10^{-25}$	0	1	$8.809 \cdot 10^{-42}$	0	1
$e^+e^- \to \mu^+\mu^-$	$3.378 \cdot 10^{-25}$	0	1	$5.743 \cdot 10^{-42}$	0	1
$e^+e^- \rightarrow e^+e^-$	$-1.943 \cdot 10^{-24}$	0	1	$5.878 \cdot 10^{-41}$	0	1
$s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$	$9.562 \cdot 10^{-26}$	0	1	$1.062 \cdot 10^{-41}$	0	1
$s\bar{s} \to s\bar{s}$	$-9.7 \cdot 10^{-26}$	0	1	$4.868 \cdot 10^{-42}$	0	1
$t\bar{t} \to t\bar{t}$	$-7.142 \cdot 10^{-24}$	0	1	$5.341 \cdot 10^{-40}$	0	1
$tg \to bW^+$	$-1.968 \cdot 10^{-23}$	0	1	$1.164 \cdot 10^{-39}$	0	1
$u\bar{u} \to \nu_e \bar{\nu}_e$	$1.898 \cdot 10^{-26}$	0	1	$2.107 \cdot 10^{-42}$	0	1
$u\bar{u} \to u\bar{u}$	$-1.061 \cdot 10^{-24}$	0	1	$2.381 \cdot 10^{-41}$	0	1

### 2.60 sm

			interference		square	
	mod1	mod2	$1-{\tt mod2/mod1}$	mod1	mod2	$1-{\tt mod2/mod1}$
$HH \to HH$	0	0	0	0.1988	0.1988	0
$HH \to H  au^+  au^-$	0	0	0	$1.471 \cdot 10^{-11}$	$1.471 \cdot 10^{-11}$	0
$HH  o Hbar{b}$	0	0	0	$1.547 \cdot 10^{-9}$	$1.547 \cdot 10^{-9}$	0
$HH  o W^+W^-$	0	0	0	0.4532	0.4532	0
$HH \to W^+W^-\gamma$	0	0	0	$5.962 \cdot 10^{-6}$	$5.962 \cdot 10^{-6}$	0
$HH  o W^+ e^- \bar{\nu}_e$	0	0	0	$1.088 \cdot 10^{-7}$	$1.088 \cdot 10^{-7}$	0
$HH \to W^- u \bar{d}$	0	0	0	$5.169 \cdot 10^{-7}$	$5.169 \cdot 10^{-7}$	0
$HH \to z\bar{b}b$	0	0	0	$1.547 \cdot 10^{-7}$	$1.547 \cdot 10^{-7}$	0
$HH \to zc\bar{c}$	0	0	0	$3.434 \cdot 10^{-7}$	$3.434 \cdot 10^{-7}$	0
$HH \to z t \bar{t}$	0	0	0	$2.832 \cdot 10^{-5}$	$2.832 \cdot 10^{-5}$	0
$HH \rightarrow zz$	0	0	0	0.3519	0.3519	0
$HW^+  o \gamma t \bar{b}$	0	0	0	$1.465 \cdot 10^{-7}$	$1.465 \cdot 10^{-7}$	0
$HW^+ \to \gamma u \bar{d}$	0	0	0	$1.35 \cdot 10^{-8}$	$1.35 \cdot 10^{-8}$	0
$HW^+  o u \bar d$	0	0	0	0.02242	0.02242	0
$HW^- \to \gamma e^- \bar{\nu}_e$	0	0	0	$7.491 \cdot 10^{-8}$	$7.491 \cdot 10^{-8}$	0

$HW^- \to \mu^- \bar{\nu}_{\mu}$	0	0	0	0.007567	0.007567	0
$Hz \rightarrow \mu^+\mu^-$	0	0	0	0.002818	0.002818	0
$Hz \to \nu_{\tau} \bar{\nu}_{\tau}$	0	0	0	0.004855	0.004855	0
$Hz \to s\bar{s}$	0	0	0	0.01335	0.01335	0
$Hz \to t\bar{t}$	0	0	0	2.872	2.872	0
$W^+W^-  o Hb\bar{b}$	0	0	0	$9.096 \cdot 10^{-5}$	$9.096 \cdot 10^{-5}$	0
$W^+W^- \to Hc\bar{c}$	0	0	0	$5.211 \cdot 10^{-7}$	$5.211 \cdot 10^{-7}$	0
$W^+W^- \to H d\bar{d}$	0	0	0	$9.587 \cdot 10^{-6}$	$9.587 \cdot 10^{-6}$	0
$W^+W^- \rightarrow W^+W^-$	0	0	0	7.986	7.986	0
$W^+W^- \to \gamma\gamma$	0	0	0	1.868	1.868	0
$W^+W^- \to \gamma\gamma\gamma$	0	0	0	$1.187 \cdot 10^{-6}$	$1.187 \cdot 10^{-6}$	0
$\bar{b}t \to \bar{d}u$	0	0	0	0.02168	0.02168	0
$ u_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$	0	0	0	0.009237	0.009237	0
$b\bar{b} \to \mu^+ \mu^-$	0	0	0	0.001059	0.001059	0
$b\bar{b}  o  u_e \bar{ u}_e$	0	0	0	0.0003405	0.0003405	0
$b\bar{b}  o b\bar{b}$	0	0	0	2.252	2.252	0
$b\bar{b} \to t\bar{t}$	0	0	0	420.9	420.9	0
$b\bar{t} \to e^- \bar{\nu}_e$	0	0	0	0.00915	0.00915	0
$c\bar{c} \to \mu^+ \mu^-$	0	0	0	0.004643	0.004643	0
$c\bar{s} \to \tau^+ \nu_{\tau}$	0	0	0	0.002839	0.002839	0
$d\bar{d} \to c\bar{c}$	0	0	0	0.5083	0.5083	0
$e^+\nu_\mu \to e^+\nu_\mu$	0	0	0	0.1166	0.1166	0
$e^+\nu_e \to \mu^+\nu_\mu$	0	0	0	0.03131	0.03131	0
$e^+\nu_e \to e^+\nu_e$	0	0	0	0.1892	0.1892	0
$e^+\tau^- \rightarrow e^+\tau^-$	0	0	0	0.01065	0.01065	0
$e^+e^- \to \mu^+\mu^-$	0	0	0	0.03185	0.03185	0
$e^+e^- \rightarrow e^+e^-$	0	0	0	0.02839	0.02839	0
$s\bar{s} \to \nu_{ au} \bar{\nu}_{ au}$	0	0	0	0.00409	0.00409	0
$s\bar{s} \to s\bar{s}$	0	0	0	2.033	2.033	0

$t\bar{t} \to t\bar{t}$	0	0	0	1.624	1.624	0
$tg \rightarrow bW^+$	0	0	0	0.1537	0.1537	0
$u\bar{d} \to c\bar{s}$	0	0	0	0.0001904	0.0001904	0
$u\bar{u} \to \nu_e \bar{\nu}_e$	0	0	0	0.000812	0.000812	0
$u\bar{u} \to u\bar{u}$	0	0	0	2.664	2.664	0
$zz \to W^+W^-$	0	0	0	32.49	32.49	0