# 1 By process

## 1.1 $HH \rightarrow HH$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $-1.385$ | $-1.385$ | 0 | 2.164 | 2.164 | 0 |
| cHDD | $-0.114$ | $-0.114$ | 0 | 0.01481 | 0.01481 | 0 |
| cHl311 | $-0.02519$ | $-0.02519$ | 0 | 0.0007635 | 0.0007635 | 0 |
| cHl322 | $-0.01114$ | $-0.01114$ | 0 | 0.0003378 | 0.0003378 | 0 |
| cll1221 | 0.009196 | 0.009196 | 0 | 0.0001394 | 0.0001394 | 0 |
| sm | 0 | 0 | 0 | 0.1767 | 0.1767 | 0 |

## 1.2 $HH \rightarrow HHH$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $1.018 \cdot 10^{-5}$ | $1.018 \cdot 10^{-5}$ | 0 | $1.724 \cdot 10^{-5}$ | $1.724 \cdot 10^{-5}$ | 0 |
| cHDD | $6.973 \cdot 10^{-7}$ | $6.973 \cdot 10^{-7}$ | 0 | $3.68 \cdot 10^{-7}$ | $3.68 \cdot 10^{-7}$ | 0 |
| cHl311 | $-1.796 \cdot 10^{-7}$ | $-1.796 \cdot 10^{-7}$ | 0 | $8.164 \cdot 10^{-9}$ | $8.164 \cdot 10^{-9}$ | 0 |
| cHl322 | $-7.446 \cdot 10^{-8}$ | $-7.446 \cdot 10^{-8}$ | 0 | $3.385 \cdot 10^{-9}$ | $3.385 \cdot 10^{-9}$ | 0 |
| cll1221 | $1.778 \cdot 10^{-8}$ | $1.778 \cdot 10^{-8}$ | 0 | $4.043 \cdot 10^{-10}$ | $4.043 \cdot 10^{-10}$ | 0 |
| sm | 0 | 0 | 0 | $1.321 \cdot 10^{-8}$ | $1.321 \cdot 10^{-8}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $-4.246 \cdot 10^{-10}$ | $-4.246 \cdot 10^{-10}$ | 0 | $8.57 \cdot 10^{-10}$ | $8.57 \cdot 10^{-10}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $2.142 \cdot 10^{-12}$ | $2.142 \cdot 10^{-12}$ | 0 | $3.966 \cdot 10^{-12}$ | $3.966 \cdot 10^{-12}$ | 0 |
| cHl311 | $-5.522 \cdot 10^{-12}$ | $-5.522 \cdot 10^{-12}$ | 0 | $2.511 \cdot 10^{-13}$ | $2.511 \cdot 10^{-13}$ | 0 |
| cHl322 | $-9.779 \cdot 10^{-12}$ | $-9.779 \cdot 10^{-12}$ | 0 | $4.446 \cdot 10^{-13}$ | $4.446 \cdot 10^{-13}$ | 0 |
| ceHIm33 | $1.935 \cdot 10^{-10}$ | $1.935 \cdot 10^{-10}$ | 0 | $2.168 \cdot 10^{-6}$ | $2.168 \cdot 10^{-6}$ | 0 |
| ceHRe33 | $-1.273 \cdot 10^{-8}$ | $-1.273 \cdot 10^{-8}$ | 0 | $1.296 \cdot 10^{-7}$ | $1.296 \cdot 10^{-7}$ | 0 |
| cll1221 | $2.405 \cdot 10^{-11}$ | $2.405 \cdot 10^{-11}$ | 0 | $5.468 \cdot 10^{-13}$ | $5.468 \cdot 10^{-13}$ | 0 |
| sm | 0 | 0 | 0 | $1.661 \cdot 10^{-10}$ | $1.661 \cdot 10^{-10}$ | 0 |

## 1.4 $HH \to Hb\bar{b}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $-6.963 \cdot 10^{-9}$ | $-6.963 \cdot 10^{-9}$ | 0 | $1.334 \cdot 10^{-8}$ | $1.334 \cdot 10^{-8}$ | 0 |
| cHDD | $-2.801 \cdot 10^{-11}$ | $-2.801 \cdot 10^{-11}$ | 0 | $1.234 \cdot 10^{-13}$ | $1.234 \cdot 10^{-13}$ | 0 |
| cHl311 | $-4.783 \cdot 10^{-11}$ | $-4.783 \cdot 10^{-11}$ | 0 | $2.175 \cdot 10^{-12}$ | $2.175 \cdot 10^{-12}$ | 0 |
| cHl322 | $-3.271 \cdot 10^{-11}$ | $-3.271 \cdot 10^{-11}$ | 0 | $1.487 \cdot 10^{-12}$ | $1.487 \cdot 10^{-12}$ | 0 |
| cbHIm | $1.005 \cdot 10^{-10}$ | $1.005 \cdot 10^{-10}$ | 0 | $3.568 \cdot 10^{-6}$ | $3.568 \cdot 10^{-6}$ | 0 |
| cbHRe | $-2.03 \cdot 10^{-8}$ | $-2.03 \cdot 10^{-8}$ | 0 | $4.58 \cdot 10^{-7}$ | $4.58 \cdot 10^{-7}$ | 0 |
| cll1221 | $3.585 \cdot 10^{-10}$ | $3.585 \cdot 10^{-10}$ | 0 | $8.15 \cdot 10^{-12}$ | $8.15 \cdot 10^{-12}$ | 0 |
| sm | 0 | 0 | 0 | $6.829 \cdot 10^{-9}$ | $6.829 \cdot 10^{-9}$ | 0 |

## 1.5 $HH \to Hs\bar{s}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $-4.134 \cdot 10^{-10}$ | $-4.134 \cdot 10^{-10}$ | 0 | $6.452 \cdot 10^{-10}$ | $6.452 \cdot 10^{-10}$ | 0 |
| cHDD | $-3.476 \cdot 10^{-13}$ | $-3.476 \cdot 10^{-13}$ | 0 | $1.25 \cdot 10^{-13}$ | $1.25 \cdot 10^{-13}$ | 0 |
| cHl311 | $-2.096 \cdot 10^{-13}$ | $-2.096 \cdot 10^{-13}$ | 0 | $9.53 \cdot 10^{-15}$ | $9.53 \cdot 10^{-15}$ | 0 |
| cHl322 | $-2.042 \cdot 10^{-13}$ | $-2.042 \cdot 10^{-13}$ | 0 | $9.283 \cdot 10^{-15}$ | $9.283 \cdot 10^{-15}$ | 0 |

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
| cdHIm | $2.18 \cdot 10^{-18}$ | $2.18 \cdot 10^{-18}$ | $3.211 \cdot 10^{-7}$ | $6.192 \cdot 10^{-13}$ | $6.192 \cdot 10^{-13}$ | $6.299 \cdot 10^{-7}$ |
| cdHRe | $-2.641 \cdot 10^{-12}$ | $-2.641 \cdot 10^{-12}$ | $3.029 \cdot 10^{-7}$ | $1.513 \cdot 10^{-12}$ | $1.513 \cdot 10^{-12}$ | $6.607 \cdot 10^{-7}$ |
| cll1221 | $4.089 \cdot 10^{-11}$ | $4.089 \cdot 10^{-11}$ | $0$ | $9.296 \cdot 10^{-13}$ | $9.296 \cdot 10^{-13}$ | $0$ |
| sm | $0$ | $0$ | $0$ | $3.778 \cdot 10^{-12}$ | $3.778 \cdot 10^{-12}$ | $0$ |

## 1.6 $HH \to Ht\bar{t}$

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $1.675 \cdot 10^{-5}$ | $1.675 \cdot 10^{-5}$ | $0$ | $1.814 \cdot 10^{-5}$ | $1.814 \cdot 10^{-5}$ | $0$ |
| cHDD | $-7.031 \cdot 10^{-6}$ | $-7.031 \cdot 10^{-6}$ | $0$ | $1.125 \cdot 10^{-6}$ | $1.125 \cdot 10^{-6}$ | $0$ |
| cHl311 | $-1.196 \cdot 10^{-5}$ | $-1.196 \cdot 10^{-5}$ | $0$ | $5.437 \cdot 10^{-7}$ | $5.437 \cdot 10^{-7}$ | $0$ |
| cHl322 | $-1.896 \cdot 10^{-7}$ | $-1.896 \cdot 10^{-7}$ | $0$ | $8.622 \cdot 10^{-9}$ | $8.622 \cdot 10^{-9}$ | $0$ |
| cll1221 | $1.38 \cdot 10^{-6}$ | $1.38 \cdot 10^{-6}$ | $0$ | $3.137 \cdot 10^{-8}$ | $3.137 \cdot 10^{-8}$ | $0$ |
| ctHIm | $2.54 \cdot 10^{-6}$ | $2.54 \cdot 10^{-6}$ | $0$ | $4.589 \cdot 10^{-5}$ | $4.589 \cdot 10^{-5}$ | $0$ |
| ctHRe | $1.993 \cdot 10^{-5}$ | $1.993 \cdot 10^{-5}$ | $0$ | $1.79 \cdot 10^{-5}$ | $1.79 \cdot 10^{-5}$ | $0$ |
| sm | $0$ | $0$ | $0$ | $1.632 \cdot 10^{-5}$ | $1.632 \cdot 10^{-5}$ | $0$ |

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

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $-2.619 \cdot 10^{-15}$ | $-2.619 \cdot 10^{-15}$ | $0$ | $6.799 \cdot 10^{-15}$ | $6.799 \cdot 10^{-15}$ | $0$ |
| cHDD | $-1.422 \cdot 10^{-16}$ | $-1.422 \cdot 10^{-16}$ | $0$ | $6.311 \cdot 10^{-17}$ | $6.311 \cdot 10^{-17}$ | $0$ |
| cHl311 | $-1.693 \cdot 10^{-17}$ | $-1.693 \cdot 10^{-17}$ | $0$ | $7.698 \cdot 10^{-19}$ | $7.698 \cdot 10^{-19}$ | $0$ |
| cHl322 | $-3.197 \cdot 10^{-17}$ | $-3.197 \cdot 10^{-17}$ | $0$ | $1.454 \cdot 10^{-18}$ | $1.454 \cdot 10^{-18}$ | $0$ |
| cll1221 | $1.602 \cdot 10^{-16}$ | $1.602 \cdot 10^{-16}$ | $0$ | $3.641 \cdot 10^{-18}$ | $3.641 \cdot 10^{-18}$ | $0$ |
| cuHIm | $3.035 \cdot 10^{-25}$ | $3.035 \cdot 10^{-25}$ | $-4.283 \cdot 10^{-7}$ | $3.395 \cdot 10^{-16}$ | $3.395 \cdot 10^{-16}$ | $-1.443 \cdot 10^{-6}$ |
| cuHRe | $-4.967 \cdot 10^{-16}$ | $-4.967 \cdot 10^{-16}$ | $-7.248 \cdot 10^{-7}$ | $6.625 \cdot 10^{-16}$ | $6.625 \cdot 10^{-16}$ | $-1.449 \cdot 10^{-6}$ |

## 1.8 $HH \to Hzz$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $8.565 \cdot 10^{-6}$ | $8.565 \cdot 10^{-6}$ | 0 | $1.753 \cdot 10^{-5}$ | $1.753 \cdot 10^{-5}$ | 0 |
| cHB | $5.554 \cdot 10^{-8}$ | $5.554 \cdot 10^{-8}$ | 0 | $4.852 \cdot 10^{-7}$ | $4.852 \cdot 10^{-7}$ | 0 |
| cHBtil | $1.74 \cdot 10^{-7}$ | $1.74 \cdot 10^{-7}$ | 0 | $9.257 \cdot 10^{-7}$ | $9.257 \cdot 10^{-7}$ | 0 |
| cHDD | $2.328 \cdot 10^{-6}$ | $2.328 \cdot 10^{-6}$ | 0 | $1.396 \cdot 10^{-6}$ | $1.396 \cdot 10^{-6}$ | 0 |
| cHW | $-3.264 \cdot 10^{-6}$ | $-3.264 \cdot 10^{-6}$ | 0 | $5.184 \cdot 10^{-6}$ | $5.184 \cdot 10^{-6}$ | 0 |
| cHWB | $-2.855 \cdot 10^{-6}$ | $-2.855 \cdot 10^{-6}$ | 0 | $5.145 \cdot 10^{-6}$ | $5.145 \cdot 10^{-6}$ | 0 |
| cHWBtil | $7.47 \cdot 10^{-7}$ | $7.47 \cdot 10^{-7}$ | 0 | $1.007 \cdot 10^{-5}$ | $1.007 \cdot 10^{-5}$ | 0 |
| cHWtil | $-1.144 \cdot 10^{-5}$ | $-1.144 \cdot 10^{-5}$ | 0 | $7.411 \cdot 10^{-6}$ | $7.411 \cdot 10^{-6}$ | 0 |
| cHl311 | $-1.274 \cdot 10^{-6}$ | $-1.274 \cdot 10^{-6}$ | 0 | $5.792 \cdot 10^{-8}$ | $5.792 \cdot 10^{-8}$ | 0 |
| cHl322 | $-9.751 \cdot 10^{-7}$ | $-9.751 \cdot 10^{-7}$ | 0 | $4.434 \cdot 10^{-8}$ | $4.434 \cdot 10^{-8}$ | 0 |
| cll1221 | $3.945 \cdot 10^{-6}$ | $3.945 \cdot 10^{-6}$ | 0 | $8.97 \cdot 10^{-8}$ | $8.97 \cdot 10^{-8}$ | 0 |
| sm | 0 | 0 | 0 | $6.828 \cdot 10^{-6}$ | $6.828 \cdot 10^{-6}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | 0.172 | 0.172 | 0 | 0.1331 | 0.1331 | 0 |
| cHDD | $-0.05963$ | $-0.05963$ | 0 | 0.2532 | 0.2532 | 0 |
| cHW | $-0.003125$ | $-0.003125$ | 0 | 8.03 | 8.03 | 0 |
| cHWtil | $1.019 \cdot 10^{-14}$ | $1.019 \cdot 10^{-14}$ | 0 | 12.72 | 12.72 | 0 |
| cHl311 | $-0.1977$ | $-0.1977$ | 0 | 0.005992 | 0.005992 | 0 |
| cHl322 | $-0.01363$ | $-0.01363$ | 0 | 0.0004133 | 0.0004133 | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cll1221 | 0.1444 | 0.1444 | 0 | 0.002189 | 0.002189 | 0 |
| sm | 0 | 0 | 0 | 0.3367 | 0.3367 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cH | $-4.961 \cdot 10^{-8}$ | $-4.961 \cdot 10^{-8}$ | 0 | $1.249 \cdot 10^{-8}$ | $1.249 \cdot 10^{-8}$ | 0 |
| cHB | $-3.188 \cdot 10^{-8}$ | $-3.188 \cdot 10^{-8}$ | 0 | $6.688 \cdot 10^{-8}$ | $6.688 \cdot 10^{-8}$ | 0 |
| cHBtil | $-1.036 \cdot 10^{-7}$ | $-1.036 \cdot 10^{-7}$ | 0 | $2.263 \cdot 10^{-8}$ | $2.263 \cdot 10^{-8}$ | 0 |
| cHDD | $-8.116 \cdot 10^{-7}$ | $-8.116 \cdot 10^{-7}$ | 0 | $3.035 \cdot 10^{-7}$ | $3.035 \cdot 10^{-7}$ | 0 |
| cHW | $-2.725 \cdot 10^{-7}$ | $-2.725 \cdot 10^{-7}$ | 0 | 0.0001085 | 0.0001085 | 0 |
| cHWB | $-0.0001825$ | $-0.0001825$ | 0 | $1.053 \cdot 10^{-5}$ | $1.053 \cdot 10^{-5}$ | 0 |
| cHWBtil | $-2.013 \cdot 10^{-6}$ | $-2.013 \cdot 10^{-6}$ | 0 | $2.329 \cdot 10^{-5}$ | $2.329 \cdot 10^{-5}$ | 0 |
| cHWtil | $5.549 \cdot 10^{-7}$ | $5.549 \cdot 10^{-7}$ | 0 | 0.0003739 | 0.0003739 | 0 |
| cHl311 | $-3.58 \cdot 10^{-7}$ | $-3.58 \cdot 10^{-7}$ | 0 | $1.628 \cdot 10^{-8}$ | $1.628 \cdot 10^{-8}$ | 0 |
| cHl322 | $-1.808 \cdot 10^{-5}$ | $-1.808 \cdot 10^{-5}$ | 0 | $8.218 \cdot 10^{-7}$ | $8.218 \cdot 10^{-7}$ | 0 |
| cW | $-2.013 \cdot 10^{-7}$ | $-2.013 \cdot 10^{-7}$ | 0 | $4.195 \cdot 10^{-6}$ | $4.195 \cdot 10^{-6}$ | 0 |
| cWtil | $-1.269 \cdot 10^{-6}$ | $-1.269 \cdot 10^{-6}$ | 0 | $3.975 \cdot 10^{-7}$ | $3.975 \cdot 10^{-7}$ | 0 |
| cll1221 | $2.771 \cdot 10^{-6}$ | $2.771 \cdot 10^{-6}$ | 0 | $6.3 \cdot 10^{-8}$ | $6.3 \cdot 10^{-8}$ | 0 |
| sm | 0 | 0 | 0 | $3.364 \cdot 10^{-6}$ | $3.364 \cdot 10^{-6}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cH | $2.749 \cdot 10^{-5}$ | $2.749 \cdot 10^{-5}$ | 0 | $2.594 \cdot 10^{-6}$ | $2.594 \cdot 10^{-6}$ | 0 |
| cHDD | $-9.533 \cdot 10^{-6}$ | $-9.533 \cdot 10^{-6}$ | 0 | $7.864 \cdot 10^{-6}$ | $7.864 \cdot 10^{-6}$ | 0 |
| cHQ3 | $9.992 \cdot 10^{-6}$ | $9.992 \cdot 10^{-6}$ | 0 | $1.38 \cdot 10^{-5}$ | $1.38 \cdot 10^{-5}$ | 0 |

| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|
| cHW | $-2.813 \cdot 10^{-6}$ | $-2.813 \cdot 10^{-6}$ | 0 | $6.049 \cdot 10^{-6}$ | $6.049 \cdot 10^{-6}$ | 0 |
| cHWtil | $9.672 \cdot 10^{-7}$ | $9.672 \cdot 10^{-7}$ | 0 | $4.807 \cdot 10^{-6}$ | $4.807 \cdot 10^{-6}$ | 0 |
| cHl311 | $-9.435 \cdot 10^{-6}$ | $-9.435 \cdot 10^{-6}$ | 0 | $4.29 \cdot 10^{-7}$ | $4.29 \cdot 10^{-7}$ | 0 |
| cHl322 | $-0.0003469$ | $-0.0003469$ | 0 | $1.577 \cdot 10^{-5}$ | $1.577 \cdot 10^{-5}$ | 0 |
| cHtbIm | $-2.364 \cdot 10^{-7}$ | $-2.364 \cdot 10^{-7}$ | 0 | $5.344 \cdot 10^{-6}$ | $5.344 \cdot 10^{-6}$ | 0 |
| cHtbRe | $-1.146 \cdot 10^{-6}$ | $-1.146 \cdot 10^{-6}$ | 0 | $1.514 \cdot 10^{-6}$ | $1.514 \cdot 10^{-6}$ | 0 |
| cbHIm | $2.332 \cdot 10^{-7}$ | $2.332 \cdot 10^{-7}$ | 0 | $9.036 \cdot 10^{-7}$ | $9.036 \cdot 10^{-7}$ | 0 |
| cbHRe | $-1.91 \cdot 10^{-6}$ | $-1.91 \cdot 10^{-6}$ | 0 | $9.658 \cdot 10^{-6}$ | $9.658 \cdot 10^{-6}$ | 0 |
| cbWIm | $-1.333 \cdot 10^{-7}$ | $-1.333 \cdot 10^{-7}$ | 0 | $1.154 \cdot 10^{-5}$ | $1.154 \cdot 10^{-5}$ | 0 |
| cbWRe | $-2.535 \cdot 10^{-7}$ | $-2.535 \cdot 10^{-7}$ | 0 | $5.954 \cdot 10^{-6}$ | $5.954 \cdot 10^{-6}$ | 0 |
| cll1221 | $8.19 \cdot 10^{-7}$ | $8.19 \cdot 10^{-7}$ | 0 | $1.862 \cdot 10^{-8}$ | $1.862 \cdot 10^{-8}$ | 0 |
| ctHIm | $-2.717 \cdot 10^{-6}$ | $-2.717 \cdot 10^{-6}$ | 0 | $6.309 \cdot 10^{-5}$ | $6.309 \cdot 10^{-5}$ | 0 |
| ctHRe | $4.233 \cdot 10^{-7}$ | $4.233 \cdot 10^{-7}$ | 0 | $1.374 \cdot 10^{-6}$ | $1.374 \cdot 10^{-6}$ | 0 |
| ctWIm | $3.734 \cdot 10^{-6}$ | $3.734 \cdot 10^{-6}$ | 0 | $1.607 \cdot 10^{-5}$ | $1.607 \cdot 10^{-5}$ | 0 |
| ctWRe | $6.282 \cdot 10^{-6}$ | $6.282 \cdot 10^{-6}$ | 0 | $1.546 \cdot 10^{-5}$ | $1.546 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | $2.681 \cdot 10^{-5}$ | $2.681 \cdot 10^{-5}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| cH | $2.527 \cdot 10^{-9}$ | $2.527 \cdot 10^{-9}$ | 0 | $2.534 \cdot 10^{-11}$ | $2.534 \cdot 10^{-11}$ | 0 |
| cHDD | $-1.378 \cdot 10^{-8}$ | $-1.378 \cdot 10^{-8}$ | 0 | $2.519 \cdot 10^{-10}$ | $2.519 \cdot 10^{-10}$ | 0 |
| cHW | $6.46 \cdot 10^{-8}$ | $6.46 \cdot 10^{-8}$ | 0 | $5.247 \cdot 10^{-7}$ | $5.247 \cdot 10^{-7}$ | 0 |
| cHWtil | $6.617 \cdot 10^{-8}$ | $6.617 \cdot 10^{-8}$ | 0 | $4.361 \cdot 10^{-6}$ | $4.361 \cdot 10^{-6}$ | 0 |
| cHl311 | $6.692 \cdot 10^{-7}$ | $6.692 \cdot 10^{-7}$ | 0 | $7.456 \cdot 10^{-7}$ | $7.456 \cdot 10^{-7}$ | 0 |
| cHl322 | $-4.461 \cdot 10^{-8}$ | $-4.461 \cdot 10^{-8}$ | 0 | $2.028 \cdot 10^{-9}$ | $2.028 \cdot 10^{-9}$ | 0 |
| ceHIm11 | $-3.7 \cdot 10^{-13}$ | $-3.7 \cdot 10^{-13}$ | 0 | $3.195 \cdot 10^{-7}$ | $3.195 \cdot 10^{-7}$ | 0 |
| ceHRe11 | $-1.548 \cdot 10^{-11}$ | $-1.548 \cdot 10^{-11}$ | 0 | $1.114 \cdot 10^{-5}$ | $1.114 \cdot 10^{-5}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| ceWRe11 | $-1.055 \cdot 10^{-11}$ | $-1.055 \cdot 10^{-11}$ | $0$ | $1.342 \cdot 10^{-7}$ | $1.342 \cdot 10^{-7}$ | $0$ |
| cll1221 | $1.17 \cdot 10^{-8}$ | $1.17 \cdot 10^{-8}$ | $0$ | $2.66 \cdot 10^{-10}$ | $2.66 \cdot 10^{-10}$ | $0$ |
| sm | $0$ | $0$ | $0$ | $2.377 \cdot 10^{-7}$ | $2.377 \cdot 10^{-7}$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $1.423 \cdot 10^{-8}$ | $1.423 \cdot 10^{-8}$ | $0$ | $1.113 \cdot 10^{-10}$ | $1.113 \cdot 10^{-10}$ | $0$ |
| cHDD | $-1.657 \cdot 10^{-8}$ | $-1.657 \cdot 10^{-8}$ | $0$ | $1.192 \cdot 10^{-8}$ | $1.192 \cdot 10^{-8}$ | $0$ |
| cHW | $1.044 \cdot 10^{-8}$ | $1.044 \cdot 10^{-8}$ | $0$ | $2.361 \cdot 10^{-6}$ | $2.361 \cdot 10^{-6}$ | $0$ |
| cHWtil | $-3.145 \cdot 10^{-6}$ | $-3.145 \cdot 10^{-6}$ | $0$ | $1.041 \cdot 10^{-5}$ | $1.041 \cdot 10^{-5}$ | $0$ |
| cHj3 | $1.723 \cdot 10^{-5}$ | $1.723 \cdot 10^{-5}$ | $0$ | $6.463 \cdot 10^{-5}$ | $6.463 \cdot 10^{-5}$ | $0$ |
| cHl311 | $-1.132 \cdot 10^{-7}$ | $-1.132 \cdot 10^{-7}$ | $0$ | $5.148 \cdot 10^{-9}$ | $5.148 \cdot 10^{-9}$ | $0$ |
| cHl322 | $-1.934 \cdot 10^{-8}$ | $-1.934 \cdot 10^{-8}$ | $0$ | $8.793 \cdot 10^{-10}$ | $8.793 \cdot 10^{-10}$ | $0$ |
| cHudIm | $-3.277 \cdot 10^{-25}$ | $-3.277 \cdot 10^{-25}$ | $-1.343 \cdot 10^{-6}$ | $2.244 \cdot 10^{-24}$ | $2.244 \cdot 10^{-24}$ | $-2.674 \cdot 10^{-6}$ |
| cHudRe | $-2.79 \cdot 10^{-24}$ | $-2.79 \cdot 10^{-24}$ | $-1.326 \cdot 10^{-6}$ | $2.314 \cdot 10^{-25}$ | $2.314 \cdot 10^{-25}$ | $-2.679 \cdot 10^{-6}$ |
| cdHIm | $-1.438 \cdot 10^{-15}$ | $-1.438 \cdot 10^{-15}$ | $-5.562 \cdot 10^{-7}$ | $2.278 \cdot 10^{-15}$ | $2.278 \cdot 10^{-15}$ | $-1.141 \cdot 10^{-6}$ |
| cdHRe | $-7.483 \cdot 10^{-15}$ | $-7.483 \cdot 10^{-15}$ | $-5.88 \cdot 10^{-7}$ | $1.118 \cdot 10^{-14}$ | $1.118 \cdot 10^{-14}$ | $-1.253 \cdot 10^{-6}$ |
| cdWIm | $-3.271 \cdot 10^{-16}$ | $-3.271 \cdot 10^{-16}$ | $-5.809 \cdot 10^{-7}$ | $5.25 \cdot 10^{-15}$ | $5.25 \cdot 10^{-15}$ | $-1.181 \cdot 10^{-6}$ |
| cdWRe | $-5.374 \cdot 10^{-16}$ | $-5.374 \cdot 10^{-16}$ | $-5.954 \cdot 10^{-7}$ | $6.173 \cdot 10^{-16}$ | $6.173 \cdot 10^{-16}$ | $-1.183 \cdot 10^{-6}$ |
| cll1221 | $5.133 \cdot 10^{-7}$ | $5.133 \cdot 10^{-7}$ | $0$ | $1.167 \cdot 10^{-8}$ | $1.167 \cdot 10^{-8}$ | $0$ |
| cuHIm | $-2.008 \cdot 10^{-16}$ | $-2.008 \cdot 10^{-16}$ | $-7.471 \cdot 10^{-7}$ | $3.178 \cdot 10^{-16}$ | $3.178 \cdot 10^{-16}$ | $-1.447 \cdot 10^{-6}$ |
| cuHRe | $-1.611 \cdot 10^{-15}$ | $-1.611 \cdot 10^{-15}$ | $-6.827 \cdot 10^{-7}$ | $6.914 \cdot 10^{-16}$ | $6.914 \cdot 10^{-16}$ | $-1.446 \cdot 10^{-6}$ |
| cuWIm | $2.02 \cdot 10^{-16}$ | $2.02 \cdot 10^{-16}$ | $-7.426 \cdot 10^{-7}$ | $3.909 \cdot 10^{-16}$ | $3.909 \cdot 10^{-16}$ | $-1.458 \cdot 10^{-6}$ |
| sm | $0$ | $0$ | $0$ | $1.164 \cdot 10^{-6}$ | $1.164 \cdot 10^{-6}$ | $0$ |

## 1.14 $HH \to z\bar{b}b$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cH | $1.408 \cdot 10^{-8}$ | $1.408 \cdot 10^{-8}$ | 0 | $7.723 \cdot 10^{-9}$ | $7.723 \cdot 10^{-9}$ | 0 |
| cHB | $8.458 \cdot 10^{-8}$ | $8.458 \cdot 10^{-8}$ | 0 | $3.449 \cdot 10^{-8}$ | $3.449 \cdot 10^{-8}$ | 0 |
| cHBtil | $-3.082 \cdot 10^{-8}$ | $-3.082 \cdot 10^{-8}$ | 0 | $7.982 \cdot 10^{-8}$ | $7.982 \cdot 10^{-8}$ | 0 |
| cHDD | $7.195 \cdot 10^{-8}$ | $7.195 \cdot 10^{-8}$ | 0 | $2.382 \cdot 10^{-9}$ | $2.382 \cdot 10^{-9}$ | 0 |
| cHQ1 | $8.104 \cdot 10^{-7}$ | $8.104 \cdot 10^{-7}$ | 0 | $6.877 \cdot 10^{-7}$ | $6.877 \cdot 10^{-7}$ | 0 |
| cHQ3 | $1.587 \cdot 10^{-6}$ | $1.587 \cdot 10^{-6}$ | 0 | $3.02 \cdot 10^{-6}$ | $3.02 \cdot 10^{-6}$ | 0 |
| cHW | $2.029 \cdot 10^{-7}$ | $2.029 \cdot 10^{-7}$ | 0 | $1.792 \cdot 10^{-5}$ | $1.792 \cdot 10^{-5}$ | 0 |
| cHWB | $1.062 \cdot 10^{-7}$ | $1.062 \cdot 10^{-7}$ | 0 | $8.565 \cdot 10^{-8}$ | $8.565 \cdot 10^{-8}$ | 0 |
| cHWBtil | $3.669 \cdot 10^{-7}$ | $3.669 \cdot 10^{-7}$ | 0 | $1.729 \cdot 10^{-6}$ | $1.729 \cdot 10^{-6}$ | 0 |
| cHWtil | $4.969 \cdot 10^{-7}$ | $4.969 \cdot 10^{-7}$ | 0 | $1.586 \cdot 10^{-6}$ | $1.586 \cdot 10^{-6}$ | 0 |
| cHbq | $-2.521 \cdot 10^{-7}$ | $-2.521 \cdot 10^{-7}$ | 0 | $2.278 \cdot 10^{-6}$ | $2.278 \cdot 10^{-6}$ | 0 |
| cHl311 | $-2.126 \cdot 10^{-8}$ | $-2.126 \cdot 10^{-8}$ | 0 | $9.668 \cdot 10^{-10}$ | $9.668 \cdot 10^{-10}$ | 0 |
| cHl322 | $-6.812 \cdot 10^{-7}$ | $-6.812 \cdot 10^{-7}$ | 0 | $3.097 \cdot 10^{-8}$ | $3.097 \cdot 10^{-8}$ | 0 |
| cbBIm | $-2.797 \cdot 10^{-8}$ | $-2.797 \cdot 10^{-8}$ | 0 | $1.825 \cdot 10^{-7}$ | $1.825 \cdot 10^{-7}$ | 0 |
| cbBRe | $-8.784 \cdot 10^{-9}$ | $-8.784 \cdot 10^{-9}$ | 0 | $2.271 \cdot 10^{-7}$ | $2.271 \cdot 10^{-7}$ | 0 |
| cbHIm | $-9.761 \cdot 10^{-9}$ | $-9.761 \cdot 10^{-9}$ | 0 | $1.168 \cdot 10^{-5}$ | $1.168 \cdot 10^{-5}$ | 0 |
| cbHRe | $1.41 \cdot 10^{-8}$ | $1.41 \cdot 10^{-8}$ | 0 | $1.726 \cdot 10^{-6}$ | $1.726 \cdot 10^{-6}$ | 0 |
| cbWIm | $1.225 \cdot 10^{-7}$ | $1.225 \cdot 10^{-7}$ | 0 | $1.716 \cdot 10^{-6}$ | $1.716 \cdot 10^{-6}$ | 0 |
| cbWRe | $-2.354 \cdot 10^{-7}$ | $-2.354 \cdot 10^{-7}$ | 0 | $4.448 \cdot 10^{-6}$ | $4.448 \cdot 10^{-6}$ | 0 |
| cll1221 | $4.873 \cdot 10^{-8}$ | $4.873 \cdot 10^{-8}$ | 0 | $1.108 \cdot 10^{-9}$ | $1.108 \cdot 10^{-9}$ | 0 |
| sm | 0 | 0 | 0 | $3.492 \cdot 10^{-7}$ | $3.492 \cdot 10^{-7}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cH | $4.463 \cdot 10^{-9}$ | $4.463 \cdot 10^{-9}$ | 0 | $1.728 \cdot 10^{-10}$ | $1.728 \cdot 10^{-10}$ | 0 |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cHB | $6.781 \cdot 10^{-8}$ | $6.781 \cdot 10^{-8}$ | 0 | $8.272 \cdot 10^{-8}$ | $8.272 \cdot 10^{-8}$ | 0 |
| cHBtil | $5.909 \cdot 10^{-8}$ | $5.909 \cdot 10^{-8}$ | 0 | $3.882 \cdot 10^{-8}$ | $3.882 \cdot 10^{-8}$ | 0 |
| cHDD | $2.002 \cdot 10^{-9}$ | $2.002 \cdot 10^{-9}$ | 0 | $3.167 \cdot 10^{-10}$ | $3.167 \cdot 10^{-10}$ | 0 |
| cHW | $1.872 \cdot 10^{-7}$ | $1.872 \cdot 10^{-7}$ | 0 | $2.537 \cdot 10^{-7}$ | $2.537 \cdot 10^{-7}$ | 0 |
| cHWB | $-5.232 \cdot 10^{-8}$ | $-5.232 \cdot 10^{-8}$ | 0 | $1.085 \cdot 10^{-7}$ | $1.085 \cdot 10^{-7}$ | 0 |
| cHWBtil | $-1.6 \cdot 10^{-7}$ | $-1.6 \cdot 10^{-7}$ | 0 | $8.16 \cdot 10^{-7}$ | $8.16 \cdot 10^{-7}$ | 0 |
| cHWtil | $1.085 \cdot 10^{-7}$ | $1.085 \cdot 10^{-7}$ | 0 | $1.075 \cdot 10^{-6}$ | $1.075 \cdot 10^{-6}$ | 0 |
| cHl111 | $-6.785 \cdot 10^{-7}$ | $-6.785 \cdot 10^{-7}$ | 0 | $7.55 \cdot 10^{-7}$ | $7.55 \cdot 10^{-7}$ | 0 |
| cHl311 | $1.452 \cdot 10^{-6}$ | $1.452 \cdot 10^{-6}$ | 0 | $1.639 \cdot 10^{-6}$ | $1.639 \cdot 10^{-6}$ | 0 |
| cHl322 | $-1.773 \cdot 10^{-7}$ | $-1.773 \cdot 10^{-7}$ | 0 | $8.062 \cdot 10^{-9}$ | $8.062 \cdot 10^{-9}$ | 0 |
| cll1221 | $2.146 \cdot 10^{-8}$ | $2.146 \cdot 10^{-8}$ | 0 | $4.879 \cdot 10^{-10}$ | $4.879 \cdot 10^{-10}$ | 0 |
| sm | 0 | 0 | 0 | $1.6 \cdot 10^{-7}$ | $1.6 \cdot 10^{-7}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $6.523 \cdot 10^{-8}$ | $6.523 \cdot 10^{-8}$ | 0 | $2.021 \cdot 10^{-7}$ | $2.021 \cdot 10^{-7}$ | 0 |
| cHB | $5.004 \cdot 10^{-8}$ | $5.004 \cdot 10^{-8}$ | 0 | $1.848 \cdot 10^{-7}$ | $1.848 \cdot 10^{-7}$ | 0 |
| cHBtil | $1.022 \cdot 10^{-10}$ | $1.022 \cdot 10^{-10}$ | 0 | $1.987 \cdot 10^{-7}$ | $1.987 \cdot 10^{-7}$ | 0 |
| cHDD | $-2.496 \cdot 10^{-8}$ | $-2.496 \cdot 10^{-8}$ | 0 | $7.398 \cdot 10^{-9}$ | $7.398 \cdot 10^{-9}$ | 0 |
| cHW | $7.359 \cdot 10^{-7}$ | $7.359 \cdot 10^{-7}$ | 0 | $4.172 \cdot 10^{-6}$ | $4.172 \cdot 10^{-6}$ | 0 |
| cHWB | $5.562 \cdot 10^{-6}$ | $5.562 \cdot 10^{-6}$ | 0 | $1.498 \cdot 10^{-5}$ | $1.498 \cdot 10^{-5}$ | 0 |
| cHWBtil | $5.213 \cdot 10^{-8}$ | $5.213 \cdot 10^{-8}$ | 0 | $2.718 \cdot 10^{-8}$ | $2.718 \cdot 10^{-8}$ | 0 |
| cHWtil | $2.163 \cdot 10^{-6}$ | $2.163 \cdot 10^{-6}$ | 0 | $2.663 \cdot 10^{-5}$ | $2.663 \cdot 10^{-5}$ | 0 |
| cHj1 | $-5.184 \cdot 10^{-7}$ | $-5.184 \cdot 10^{-7}$ | 0 | $1.094 \cdot 10^{-7}$ | $1.094 \cdot 10^{-7}$ | 0 |
| cHj3 | $6.139 \cdot 10^{-7}$ | $6.139 \cdot 10^{-7}$ | 0 | $1.609 \cdot 10^{-6}$ | $1.609 \cdot 10^{-6}$ | 0 |
| cHl311 | $-3.936 \cdot 10^{-7}$ | $-3.936 \cdot 10^{-7}$ | 0 | $1.79 \cdot 10^{-8}$ | $1.79 \cdot 10^{-8}$ | 0 |
| cHl322 | $-4.637 \cdot 10^{-8}$ | $-4.637 \cdot 10^{-8}$ | 0 | $2.108 \cdot 10^{-9}$ | $2.108 \cdot 10^{-9}$ | 0 |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cll1221 | $8.5 \cdot 10^{-8}$ | $8.5 \cdot 10^{-8}$ | $0$ | $1.932 \cdot 10^{-9}$ | $1.932 \cdot 10^{-9}$ | $0$ |
| cuBIm | $4.922 \cdot 10^{-12}$ | $4.922 \cdot 10^{-12}$ | $1.422 \cdot 10^{-7}$ | $1.207 \cdot 10^{-11}$ | $1.207 \cdot 10^{-11}$ | $2.486 \cdot 10^{-7}$ |
| cuBRe | $1.472 \cdot 10^{-10}$ | $1.472 \cdot 10^{-10}$ | $1.359 \cdot 10^{-7}$ | $2.618 \cdot 10^{-11}$ | $2.618 \cdot 10^{-11}$ | $2.674 \cdot 10^{-7}$ |
| cuHIm | $-9.877 \cdot 10^{-11}$ | $-9.877 \cdot 10^{-11}$ | $1.316 \cdot 10^{-7}$ | $6.654 \cdot 10^{-11}$ | $6.654 \cdot 10^{-11}$ | $2.705 \cdot 10^{-7}$ |
| cuHRe | $-5.733 \cdot 10^{-11}$ | $-5.733 \cdot 10^{-11}$ | $1.395 \cdot 10^{-7}$ | $6.139 \cdot 10^{-10}$ | $6.139 \cdot 10^{-10}$ | $2.769 \cdot 10^{-7}$ |
| cuWIm | $1.666 \cdot 10^{-12}$ | $1.666 \cdot 10^{-12}$ | $1.2 \cdot 10^{-7}$ | $4.184 \cdot 10^{-12}$ | $4.184 \cdot 10^{-12}$ | $2.868 \cdot 10^{-7}$ |
| sm | $0$ | $0$ | $0$ | $2.494 \cdot 10^{-6}$ | $2.494 \cdot 10^{-6}$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $9.943 \cdot 10^{-7}$ | $9.943 \cdot 10^{-7}$ | $0$ | $1.08 \cdot 10^{-8}$ | $1.08 \cdot 10^{-8}$ | $0$ |
| cHB | $7.416 \cdot 10^{-8}$ | $7.416 \cdot 10^{-8}$ | $0$ | $1.014 \cdot 10^{-6}$ | $1.014 \cdot 10^{-6}$ | $0$ |
| cHBtil | $9.904 \cdot 10^{-9}$ | $9.904 \cdot 10^{-9}$ | $0$ | $1.794 \cdot 10^{-9}$ | $1.794 \cdot 10^{-9}$ | $0$ |
| cHDD | $6.937 \cdot 10^{-10}$ | $6.937 \cdot 10^{-10}$ | $0$ | $7.906 \cdot 10^{-9}$ | $7.906 \cdot 10^{-9}$ | $0$ |
| cHW | $2.579 \cdot 10^{-6}$ | $2.579 \cdot 10^{-6}$ | $0$ | $8.784 \cdot 10^{-6}$ | $8.784 \cdot 10^{-6}$ | $0$ |
| cHWB | $2.071 \cdot 10^{-7}$ | $2.071 \cdot 10^{-7}$ | $0$ | $3.693 \cdot 10^{-7}$ | $3.693 \cdot 10^{-7}$ | $0$ |
| cHWBtil | $-1.251 \cdot 10^{-8}$ | $-1.251 \cdot 10^{-8}$ | $0$ | $3.492 \cdot 10^{-7}$ | $3.492 \cdot 10^{-7}$ | $0$ |
| cHWtil | $-1.094 \cdot 10^{-6}$ | $-1.094 \cdot 10^{-6}$ | $0$ | $3.771 \cdot 10^{-6}$ | $3.771 \cdot 10^{-6}$ | $0$ |
| cHd | $-2.127 \cdot 10^{-7}$ | $-2.127 \cdot 10^{-7}$ | $0$ | $1.042 \cdot 10^{-6}$ | $1.042 \cdot 10^{-6}$ | $0$ |
| cHj1 | $4.141 \cdot 10^{-6}$ | $4.141 \cdot 10^{-6}$ | $0$ | $5.615 \cdot 10^{-6}$ | $5.615 \cdot 10^{-6}$ | $0$ |
| cHj3 | $1.82 \cdot 10^{-5}$ | $1.82 \cdot 10^{-5}$ | $0$ | $6.042 \cdot 10^{-5}$ | $6.042 \cdot 10^{-5}$ | $0$ |
| cHl311 | $-1.027 \cdot 10^{-6}$ | $-1.027 \cdot 10^{-6}$ | $0$ | $4.669 \cdot 10^{-8}$ | $4.669 \cdot 10^{-8}$ | $0$ |
| cHl322 | $-4.981 \cdot 10^{-7}$ | $-4.981 \cdot 10^{-7}$ | $0$ | $2.265 \cdot 10^{-8}$ | $2.265 \cdot 10^{-8}$ | $0$ |
| cdBIm | $2.599 \cdot 10^{-15}$ | $2.599 \cdot 10^{-15}$ | $-5.771 \cdot 10^{-7}$ | $1.287 \cdot 10^{-15}$ | $1.287 \cdot 10^{-15}$ | $-1.166 \cdot 10^{-6}$ |
| cdBRe | $-4.523 \cdot 10^{-16}$ | $-4.523 \cdot 10^{-16}$ | $-5.969 \cdot 10^{-7}$ | $9.089 \cdot 10^{-16}$ | $9.089 \cdot 10^{-16}$ | $-1.166 \cdot 10^{-6}$ |
| cdHIm | $-3.449 \cdot 10^{-17}$ | $-3.449 \cdot 10^{-17}$ | $-5.799 \cdot 10^{-7}$ | $2.833 \cdot 10^{-15}$ | $2.833 \cdot 10^{-15}$ | $-1.165 \cdot 10^{-6}$ |
| cdHRe | $5.218 \cdot 10^{-15}$ | $5.218 \cdot 10^{-15}$ | $-5.941 \cdot 10^{-7}$ | $5.583 \cdot 10^{-16}$ | $5.583 \cdot 10^{-16}$ | $-1.182 \cdot 10^{-6}$ |

|  | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cdWIm | $3.043 \cdot 10^{-16}$ | $3.043 \cdot 10^{-16}$ | $-5.915 \cdot 10^{-7}$ | $3.226 \cdot 10^{-15}$ | $3.226 \cdot 10^{-15}$ | $-1.147 \cdot 10^{-6}$ |
| cdWRe | $-8.447 \cdot 10^{-16}$ | $-8.447 \cdot 10^{-16}$ | $-5.919 \cdot 10^{-7}$ | $3.169 \cdot 10^{-15}$ | $3.169 \cdot 10^{-15}$ | $-1.167 \cdot 10^{-6}$ |
| cll1221 | $3.34 \cdot 10^{-8}$ | $3.34 \cdot 10^{-8}$ | $0$ | $7.593 \cdot 10^{-10}$ | $7.593 \cdot 10^{-10}$ | $0$ |
| sm | $0$ | $0$ | $0$ | $4.467 \cdot 10^{-7}$ | $4.467 \cdot 10^{-7}$ | $0$ |

## 1.18  $HH \rightarrow ze^+e^-$

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cH | $3.374 \cdot 10^{-6}$ | $3.374 \cdot 10^{-6}$ | $0$ | $1.287 \cdot 10^{-6}$ | $1.287 \cdot 10^{-6}$ | $0$ |
| cHB | $3.326 \cdot 10^{-8}$ | $3.326 \cdot 10^{-8}$ | $0$ | $4.04 \cdot 10^{-7}$ | $4.04 \cdot 10^{-7}$ | $0$ |
| cHBtil | $-2.339 \cdot 10^{-9}$ | $-2.339 \cdot 10^{-9}$ | $0$ | $1.38 \cdot 10^{-6}$ | $1.38 \cdot 10^{-6}$ | $0$ |
| cHDD | $-5.332 \cdot 10^{-9}$ | $-5.332 \cdot 10^{-9}$ | $0$ | $2.32 \cdot 10^{-9}$ | $2.32 \cdot 10^{-9}$ | $0$ |
| cHW | $9.597 \cdot 10^{-8}$ | $9.597 \cdot 10^{-8}$ | $0$ | $7.802 \cdot 10^{-7}$ | $7.802 \cdot 10^{-7}$ | $0$ |
| cHWB | $-3.419 \cdot 10^{-8}$ | $-3.419 \cdot 10^{-8}$ | $0$ | $1.901 \cdot 10^{-7}$ | $1.901 \cdot 10^{-7}$ | $0$ |
| cHWBtil | $7.379 \cdot 10^{-9}$ | $7.379 \cdot 10^{-9}$ | $0$ | $1.664 \cdot 10^{-7}$ | $1.664 \cdot 10^{-7}$ | $0$ |
| cHWtil | $-4.96 \cdot 10^{-8}$ | $-4.96 \cdot 10^{-8}$ | $0$ | $6.687 \cdot 10^{-7}$ | $6.687 \cdot 10^{-7}$ | $0$ |
| cHe11 | $-7.458 \cdot 10^{-7}$ | $-7.458 \cdot 10^{-7}$ | $0$ | $3.692 \cdot 10^{-6}$ | $3.692 \cdot 10^{-6}$ | $0$ |
| cHl111 | $5.255 \cdot 10^{-7}$ | $5.255 \cdot 10^{-7}$ | $0$ | $1.319 \cdot 10^{-6}$ | $1.319 \cdot 10^{-6}$ | $0$ |
| cHl311 | $3.953 \cdot 10^{-7}$ | $3.953 \cdot 10^{-7}$ | $0$ | $7.886 \cdot 10^{-7}$ | $7.886 \cdot 10^{-7}$ | $0$ |
| cHl322 | $-8.279 \cdot 10^{-8}$ | $-8.279 \cdot 10^{-8}$ | $0$ | $3.764 \cdot 10^{-9}$ | $3.764 \cdot 10^{-9}$ | $0$ |
| ceBIm11 | $-1.123 \cdot 10^{-13}$ | $-1.123 \cdot 10^{-13}$ | $0$ | $1.6 \cdot 10^{-7}$ | $1.6 \cdot 10^{-7}$ | $0$ |
| ceBRe11 | $-4.151 \cdot 10^{-13}$ | $-4.151 \cdot 10^{-13}$ | $0$ | $4.936 \cdot 10^{-7}$ | $4.936 \cdot 10^{-7}$ | $0$ |
| ceHIm11 | $8.003 \cdot 10^{-13}$ | $8.003 \cdot 10^{-13}$ | $0$ | $1.927 \cdot 10^{-6}$ | $1.927 \cdot 10^{-6}$ | $0$ |
| ceHRe11 | $2.873 \cdot 10^{-12}$ | $2.873 \cdot 10^{-12}$ | $0$ | $9.617 \cdot 10^{-8}$ | $9.617 \cdot 10^{-8}$ | $0$ |
| ceWRe11 | $-4.463 \cdot 10^{-13}$ | $-4.463 \cdot 10^{-13}$ | $0$ | $3.744 \cdot 10^{-7}$ | $3.744 \cdot 10^{-7}$ | $0$ |
| cll1221 | $8.718 \cdot 10^{-9}$ | $8.718 \cdot 10^{-9}$ | $0$ | $1.982 \cdot 10^{-10}$ | $1.982 \cdot 10^{-10}$ | $0$ |
| sm | $0$ | $0$ | $0$ | $7.443 \cdot 10^{-8}$ | $7.443 \cdot 10^{-8}$ | $0$ |

## 1.19 $HH \to zt\bar{t}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $1.641 \cdot 10^{-5}$ | $1.641 \cdot 10^{-5}$ | 0 | $6.085 \cdot 10^{-7}$ | $6.085 \cdot 10^{-7}$ | 0 |
| cHB | $-2.853 \cdot 10^{-5}$ | $-2.853 \cdot 10^{-5}$ | 0 | $1.647 \cdot 10^{-6}$ | $1.647 \cdot 10^{-6}$ | 0 |
| cHBtil | $2.673 \cdot 10^{-8}$ | $2.673 \cdot 10^{-8}$ | 0 | $3.266 \cdot 10^{-7}$ | $3.266 \cdot 10^{-7}$ | 0 |
| cHDD | $3.247 \cdot 10^{-5}$ | $3.247 \cdot 10^{-5}$ | 0 | $3.457 \cdot 10^{-6}$ | $3.457 \cdot 10^{-6}$ | 0 |
| cHQ1 | 0.0005476 | 0.0005476 | 0 | 0.0002396 | 0.0002396 | 0 |
| cHQ3 | $-0.0002109$ | $-0.0002109$ | 0 | 0.0002284 | 0.0002284 | 0 |
| cHW | $-1.585 \cdot 10^{-5}$ | $-1.585 \cdot 10^{-5}$ | 0 | $3.252 \cdot 10^{-6}$ | $3.252 \cdot 10^{-6}$ | 0 |
| cHWB | $-3.825 \cdot 10^{-6}$ | $-3.825 \cdot 10^{-6}$ | 0 | $7.133 \cdot 10^{-7}$ | $7.133 \cdot 10^{-7}$ | 0 |
| cHWBtil | $-2.013 \cdot 10^{-7}$ | $-2.013 \cdot 10^{-7}$ | 0 | $3.143 \cdot 10^{-7}$ | $3.143 \cdot 10^{-7}$ | 0 |
| cHWtil | $3.655 \cdot 10^{-6}$ | $3.655 \cdot 10^{-6}$ | 0 | $4.143 \cdot 10^{-6}$ | $4.143 \cdot 10^{-6}$ | 0 |
| cHl311 | $-6.044 \cdot 10^{-6}$ | $-6.044 \cdot 10^{-6}$ | 0 | $2.748 \cdot 10^{-7}$ | $2.748 \cdot 10^{-7}$ | 0 |
| cHl322 | $-2.68 \cdot 10^{-6}$ | $-2.68 \cdot 10^{-6}$ | 0 | $1.218 \cdot 10^{-7}$ | $1.218 \cdot 10^{-7}$ | 0 |
| cHt | $-6.043 \cdot 10^{-5}$ | $-6.043 \cdot 10^{-5}$ | 0 | $4.103 \cdot 10^{-5}$ | $4.103 \cdot 10^{-5}$ | 0 |
| cll1221 | $1.026 \cdot 10^{-6}$ | $1.026 \cdot 10^{-6}$ | 0 | $2.332 \cdot 10^{-8}$ | $2.332 \cdot 10^{-8}$ | 0 |
| ctBIm | $-9.539 \cdot 10^{-7}$ | $-9.539 \cdot 10^{-7}$ | 0 | $1.833 \cdot 10^{-5}$ | $1.833 \cdot 10^{-5}$ | 0 |
| ctHIm | $1.142 \cdot 10^{-6}$ | $1.142 \cdot 10^{-6}$ | 0 | $1.252 \cdot 10^{-5}$ | $1.252 \cdot 10^{-5}$ | 0 |
| ctHRe | $-3.625 \cdot 10^{-7}$ | $-3.625 \cdot 10^{-7}$ | 0 | $1.394 \cdot 10^{-6}$ | $1.394 \cdot 10^{-6}$ | 0 |
| ctWIm | $3.177 \cdot 10^{-7}$ | $3.177 \cdot 10^{-7}$ | 0 | $1.243 \cdot 10^{-5}$ | $1.243 \cdot 10^{-5}$ | 0 |
| ctWRe | $7.78 \cdot 10^{-7}$ | $7.78 \cdot 10^{-7}$ | 0 | $5.088 \cdot 10^{-5}$ | $5.088 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | 0.0001099 | 0.0001099 | 0 |

## 1.20 $HH \to zz$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |

| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|
| cH | 0.01175 | 0.01175 | 0 | 0.06606 | 0.06606 | 0 |
| cHB | 0.01832 | 0.01832 | 0 | 0.2077 | 0.2077 | 0 |
| cHBtil | $2.205 \cdot 10^{-17}$ | $2.205 \cdot 10^{-17}$ | 0 | 0.1869 | 0.1869 | 0 |
| cHDD | $-0.0332$ | $-0.0332$ | 0 | 0.4524 | 0.4524 | 0 |
| cHW | 0.02966 | 0.02966 | 0 | 2.324 | 2.324 | 0 |
| cHWB | 0.05668 | 0.05668 | 0 | 0.7912 | 0.7912 | 0 |
| cHWBtil | $-2.277 \cdot 10^{-18}$ | $-2.277 \cdot 10^{-18}$ | 0 | 0.8315 | 0.8315 | 0 |
| cHWtil | $1.372 \cdot 10^{-16}$ | $1.372 \cdot 10^{-16}$ | 0 | 2.383 | 2.383 | 0 |
| cHl311 | $-0.1409$ | $-0.1409$ | 0 | 0.004272 | 0.004272 | 0 |
| cHl322 | $-0.07872$ | $-0.07872$ | 0 | 0.002386 | 0.002386 | 0 |
| cll1221 | 0.004707 | 0.004707 | 0 | $7.134 \cdot 10^{-5}$ | $7.134 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | 5.263 | 5.263 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| cHB | $-5.082 \cdot 10^{-6}$ | $-5.082 \cdot 10^{-6}$ | 0 | $1.473 \cdot 10^{-7}$ | $1.473 \cdot 10^{-7}$ | 0 |
| cHBtil | $7.814 \cdot 10^{-8}$ | $7.814 \cdot 10^{-8}$ | 0 | $3.005 \cdot 10^{-7}$ | $3.005 \cdot 10^{-7}$ | 0 |
| cHDD | $-1.374 \cdot 10^{-7}$ | $-1.374 \cdot 10^{-7}$ | 0 | $4.671 \cdot 10^{-9}$ | $4.671 \cdot 10^{-9}$ | 0 |
| cHQ3 | $-5.439 \cdot 10^{-7}$ | $-5.439 \cdot 10^{-7}$ | 0 | $8.228 \cdot 10^{-8}$ | $8.228 \cdot 10^{-8}$ | 0 |
| cHW | $-2.956 \cdot 10^{-6}$ | $-2.956 \cdot 10^{-6}$ | 0 | $1.509 \cdot 10^{-6}$ | $1.509 \cdot 10^{-6}$ | 0 |
| cHWB | $-1.012 \cdot 10^{-6}$ | $-1.012 \cdot 10^{-6}$ | 0 | $1.078 \cdot 10^{-6}$ | $1.078 \cdot 10^{-6}$ | 0 |
| cHWBtil | $3.054 \cdot 10^{-7}$ | $3.054 \cdot 10^{-7}$ | 0 | $1.422 \cdot 10^{-6}$ | $1.422 \cdot 10^{-6}$ | 0 |
| cHWtil | $2.032 \cdot 10^{-8}$ | $2.032 \cdot 10^{-8}$ | 0 | $8.371 \cdot 10^{-7}$ | $8.371 \cdot 10^{-7}$ | 0 |
| cHl311 | $-2.446 \cdot 10^{-6}$ | $-2.446 \cdot 10^{-6}$ | 0 | $1.112 \cdot 10^{-7}$ | $1.112 \cdot 10^{-7}$ | 0 |
| cHl322 | $-1.008 \cdot 10^{-7}$ | $-1.008 \cdot 10^{-7}$ | 0 | $4.582 \cdot 10^{-9}$ | $4.582 \cdot 10^{-9}$ | 0 |
| cHtbIm | $-1.992 \cdot 10^{-8}$ | $-1.992 \cdot 10^{-8}$ | 0 | $5.558 \cdot 10^{-7}$ | $5.558 \cdot 10^{-7}$ | 0 |
| cHtbRe | $-4.977 \cdot 10^{-9}$ | $-4.977 \cdot 10^{-9}$ | 0 | $3.381 \cdot 10^{-8}$ | $3.381 \cdot 10^{-8}$ | 0 |

| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|
| cW | $4.462 \cdot 10^{-8}$ | $4.462 \cdot 10^{-8}$ | 0 | $5.814 \cdot 10^{-7}$ | $5.814 \cdot 10^{-7}$ | 0 |
| cWtil | $-3.456 \cdot 10^{-8}$ | $-3.456 \cdot 10^{-8}$ | 0 | $3.759 \cdot 10^{-7}$ | $3.759 \cdot 10^{-7}$ | 0 |
| cbBIm | $2.362 \cdot 10^{-7}$ | $2.362 \cdot 10^{-7}$ | 0 | $3.33 \cdot 10^{-6}$ | $3.33 \cdot 10^{-6}$ | 0 |
| cbBRe | $-7.842 \cdot 10^{-8}$ | $-7.842 \cdot 10^{-8}$ | 0 | $1.595 \cdot 10^{-6}$ | $1.595 \cdot 10^{-6}$ | 0 |
| cbHIm | $-3.058 \cdot 10^{-9}$ | $-3.058 \cdot 10^{-9}$ | 0 | $2.164 \cdot 10^{-8}$ | $2.164 \cdot 10^{-8}$ | 0 |
| cbHRe | $2.33 \cdot 10^{-8}$ | $2.33 \cdot 10^{-8}$ | 0 | $1.322 \cdot 10^{-7}$ | $1.322 \cdot 10^{-7}$ | 0 |
| cbWIm | $-6.245 \cdot 10^{-9}$ | $-6.245 \cdot 10^{-9}$ | 0 | $1.998 \cdot 10^{-6}$ | $1.998 \cdot 10^{-6}$ | 0 |
| cbWRe | $-2.512 \cdot 10^{-8}$ | $-2.512 \cdot 10^{-8}$ | 0 | $1.209 \cdot 10^{-6}$ | $1.209 \cdot 10^{-6}$ | 0 |
| cll1221 | $1.919 \cdot 10^{-7}$ | $1.919 \cdot 10^{-7}$ | 0 | $4.362 \cdot 10^{-9}$ | $4.362 \cdot 10^{-9}$ | 0 |
| ctBIm | $2.772 \cdot 10^{-9}$ | $2.772 \cdot 10^{-9}$ | 0 | $3.186 \cdot 10^{-8}$ | $3.186 \cdot 10^{-8}$ | 0 |
| ctHIm | $-4.39 \cdot 10^{-8}$ | $-4.39 \cdot 10^{-8}$ | 0 | $7.055 \cdot 10^{-9}$ | $7.055 \cdot 10^{-9}$ | 0 |
| ctHRe | $-2.046 \cdot 10^{-7}$ | $-2.046 \cdot 10^{-7}$ | 0 | $3.119 \cdot 10^{-8}$ | $3.119 \cdot 10^{-8}$ | 0 |
| ctWIm | $-1.232 \cdot 10^{-7}$ | $-1.232 \cdot 10^{-7}$ | 0 | $6.019 \cdot 10^{-6}$ | $6.019 \cdot 10^{-6}$ | 0 |
| ctWRe | $1.267 \cdot 10^{-7}$ | $1.267 \cdot 10^{-7}$ | 0 | $2.031 \cdot 10^{-6}$ | $2.031 \cdot 10^{-6}$ | 0 |
| sm | 0 | 0 | 0 | $6.994 \cdot 10^{-6}$ | $6.994 \cdot 10^{-6}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| cHB | $2.805 \cdot 10^{-7}$ | $2.805 \cdot 10^{-7}$ | 0 | $3.391 \cdot 10^{-8}$ | $3.391 \cdot 10^{-8}$ | 0 |
| cHBtil | $2.649 \cdot 10^{-9}$ | $2.649 \cdot 10^{-9}$ | 0 | $1.985 \cdot 10^{-9}$ | $1.985 \cdot 10^{-9}$ | 0 |
| cHDD | $-1.253 \cdot 10^{-8}$ | $-1.253 \cdot 10^{-8}$ | 0 | $4.261 \cdot 10^{-10}$ | $4.261 \cdot 10^{-10}$ | 0 |
| cHW | $4.821 \cdot 10^{-8}$ | $4.821 \cdot 10^{-8}$ | 0 | $5.739 \cdot 10^{-6}$ | $5.739 \cdot 10^{-6}$ | 0 |
| cHWB | $-4.915 \cdot 10^{-7}$ | $-4.915 \cdot 10^{-7}$ | 0 | $4.298 \cdot 10^{-6}$ | $4.298 \cdot 10^{-6}$ | 0 |
| cHWBtil | $6.927 \cdot 10^{-8}$ | $6.927 \cdot 10^{-8}$ | 0 | $1.991 \cdot 10^{-7}$ | $1.991 \cdot 10^{-7}$ | 0 |
| cHWtil | $-5.196 \cdot 10^{-9}$ | $-5.196 \cdot 10^{-9}$ | 0 | $5.89 \cdot 10^{-7}$ | $5.89 \cdot 10^{-7}$ | 0 |
| cHj3 | $1.147 \cdot 10^{-6}$ | $1.147 \cdot 10^{-6}$ | 0 | $5.349 \cdot 10^{-6}$ | $5.349 \cdot 10^{-6}$ | 0 |
| cHl311 | $-1.34 \cdot 10^{-7}$ | $-1.34 \cdot 10^{-7}$ | 0 | $6.091 \cdot 10^{-9}$ | $6.091 \cdot 10^{-9}$ | 0 |

|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|
| cHl322 | $-4.97 \cdot 10^{-8}$ | $-4.97 \cdot 10^{-8}$ | 0 | $2.26 \cdot 10^{-9}$ | $2.26 \cdot 10^{-9}$ | 0 |
| cHudIm | $-7.866 \cdot 10^{-26}$ | $-7.866 \cdot 10^{-26}$ | $-1.335 \cdot 10^{-6}$ | $1.927 \cdot 10^{-26}$ | $1.927 \cdot 10^{-26}$ | $-2.646 \cdot 10^{-6}$ |
| cHudRe | $-1.823 \cdot 10^{-23}$ | $-1.823 \cdot 10^{-23}$ | $-1.371 \cdot 10^{-6}$ | $2.456 \cdot 10^{-25}$ | $2.456 \cdot 10^{-25}$ | $-2.647 \cdot 10^{-6}$ |
| cW | $9.814 \cdot 10^{-7}$ | $9.814 \cdot 10^{-7}$ | 0 | $3.387 \cdot 10^{-6}$ | $3.387 \cdot 10^{-6}$ | 0 |
| cWtil | $1.055 \cdot 10^{-9}$ | $1.055 \cdot 10^{-9}$ | 0 | $2.357 \cdot 10^{-7}$ | $2.357 \cdot 10^{-7}$ | 0 |
| cdBIm | $-8.801 \cdot 10^{-16}$ | $-8.801 \cdot 10^{-16}$ | $-5.795 \cdot 10^{-7}$ | $5.039 \cdot 10^{-17}$ | $5.039 \cdot 10^{-17}$ | $-1.171 \cdot 10^{-6}$ |
| cdBRe | $-3.059 \cdot 10^{-16}$ | $-3.059 \cdot 10^{-16}$ | $-5.885 \cdot 10^{-7}$ | $7.565 \cdot 10^{-16}$ | $7.565 \cdot 10^{-16}$ | $-1.176 \cdot 10^{-6}$ |
| cdHIm | $-1.464 \cdot 10^{-16}$ | $-1.464 \cdot 10^{-16}$ | $-6.148 \cdot 10^{-7}$ | $9.321 \cdot 10^{-17}$ | $9.321 \cdot 10^{-17}$ | $-1.169 \cdot 10^{-6}$ |
| cdHRe | $-5.974 \cdot 10^{-15}$ | $-5.974 \cdot 10^{-15}$ | $-5.859 \cdot 10^{-7}$ | $9.411 \cdot 10^{-17}$ | $9.411 \cdot 10^{-17}$ | $-1.169 \cdot 10^{-6}$ |
| cdWIm | $-1.027 \cdot 10^{-15}$ | $-1.027 \cdot 10^{-15}$ | $-5.843 \cdot 10^{-7}$ | $4.68 \cdot 10^{-15}$ | $4.68 \cdot 10^{-15}$ | $-1.175 \cdot 10^{-6}$ |
| cdWRe | $-1.838 \cdot 10^{-15}$ | $-1.838 \cdot 10^{-15}$ | $-5.983 \cdot 10^{-7}$ | $1.352 \cdot 10^{-15}$ | $1.352 \cdot 10^{-15}$ | $-1.183 \cdot 10^{-6}$ |
| cll1221 | $2.315 \cdot 10^{-9}$ | $2.315 \cdot 10^{-9}$ | 0 | $5.263 \cdot 10^{-11}$ | $5.263 \cdot 10^{-11}$ | 0 |
| cuBIm | $7.79 \cdot 10^{-17}$ | $7.79 \cdot 10^{-17}$ | $-7.189 \cdot 10^{-7}$ | $7.598 \cdot 10^{-18}$ | $7.598 \cdot 10^{-18}$ | $-1.448 \cdot 10^{-6}$ |
| cuBRe | $2.215 \cdot 10^{-17}$ | $2.215 \cdot 10^{-17}$ | $-7.676 \cdot 10^{-7}$ | $1.689 \cdot 10^{-18}$ | $1.689 \cdot 10^{-18}$ | $-1.421 \cdot 10^{-6}$ |
| cuHIm | $-5.61 \cdot 10^{-16}$ | $-5.61 \cdot 10^{-16}$ | $-7.131 \cdot 10^{-7}$ | $4.382 \cdot 10^{-16}$ | $4.382 \cdot 10^{-16}$ | $-1.438 \cdot 10^{-6}$ |
| cuHRe | $-7.081 \cdot 10^{-16}$ | $-7.081 \cdot 10^{-16}$ | $-7.202 \cdot 10^{-7}$ | $2.072 \cdot 10^{-17}$ | $2.072 \cdot 10^{-17}$ | $-1.448 \cdot 10^{-6}$ |
| cuWIm | $-3.214 \cdot 10^{-17}$ | $-3.214 \cdot 10^{-17}$ | $-7.155 \cdot 10^{-7}$ | $1.133 \cdot 10^{-16}$ | $1.133 \cdot 10^{-16}$ | $-1.413 \cdot 10^{-6}$ |
| sm | 0 | 0 | 0 | $2.123 \cdot 10^{-7}$ | $2.123 \cdot 10^{-7}$ | 0 |

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

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| cHDD | $-0.000283$ | $-0.000283$ | 0 | $2.145 \cdot 10^{-6}$ | $2.145 \cdot 10^{-6}$ | 0 |
| cHW | $0.01659$ | $0.01659$ | 0 | $0.07783$ | $0.07783$ | 0 |
| cHWtil | $-5.974 \cdot 10^{-15}$ | $-5.974 \cdot 10^{-15}$ | 0 | $0.05262$ | $0.05262$ | 0 |
| cHj3 | $0.1356$ | $0.1356$ | 0 | $0.6359$ | $0.6359$ | 0 |
| cHl311 | $-0.002825$ | $-0.002825$ | 0 | $8.563 \cdot 10^{-5}$ | $8.563 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.002398$ | $-0.002398$ | 0 | $7.27 \cdot 10^{-5}$ | $7.27 \cdot 10^{-5}$ | 0 |
| cHudIm | $3.762 \cdot 10^{-23}$ | $3.762 \cdot 10^{-23}$ | $-1.329 \cdot 10^{-6}$ | $1.078 \cdot 10^{-20}$ | $1.078 \cdot 10^{-20}$ | $-2.691 \cdot 10^{-6}$ |

| | mod1 | mod2 | | mod1 | mod2 | |
|---|---|---|---|---|---|---|
| cHudRe | $-2.346 \cdot 10^{-19}$ | $-2.346 \cdot 10^{-19}$ | $-1.322 \cdot 10^{-6}$ | $3.17 \cdot 10^{-20}$ | $3.17 \cdot 10^{-20}$ | $-2.65 \cdot 10^{-6}$ |
| cdHIm | $-2.41 \cdot 10^{-13}$ | $-2.41 \cdot 10^{-13}$ | $-5.809 \cdot 10^{-7}$ | $4.565 \cdot 10^{-11}$ | $4.565 \cdot 10^{-11}$ | $-1.161 \cdot 10^{-6}$ |
| cdHRe | $-7.262 \cdot 10^{-12}$ | $-7.262 \cdot 10^{-12}$ | $-5.921 \cdot 10^{-7}$ | $4.406 \cdot 10^{-11}$ | $4.406 \cdot 10^{-11}$ | $-1.157 \cdot 10^{-6}$ |
| cdWIm | $-1.29 \cdot 10^{-13}$ | $-1.29 \cdot 10^{-13}$ | $-5.425 \cdot 10^{-7}$ | $4.112 \cdot 10^{-10}$ | $4.112 \cdot 10^{-10}$ | $-1.167 \cdot 10^{-6}$ |
| cdWRe | $-3.561 \cdot 10^{-11}$ | $-3.561 \cdot 10^{-11}$ | $-5.616 \cdot 10^{-7}$ | $9.243 \cdot 10^{-10}$ | $9.243 \cdot 10^{-10}$ | $-1.179 \cdot 10^{-6}$ |
| cll1221 | $0.0003434$ | $0.0003434$ | $0$ | $5.204 \cdot 10^{-6}$ | $5.204 \cdot 10^{-6}$ | $0$ |
| cuHIm | $5.152 \cdot 10^{-14}$ | $5.152 \cdot 10^{-14}$ | $-7.182 \cdot 10^{-7}$ | $1.035 \cdot 10^{-11}$ | $1.035 \cdot 10^{-11}$ | $-1.45 \cdot 10^{-6}$ |
| cuHRe | $-2.521 \cdot 10^{-12}$ | $-2.521 \cdot 10^{-12}$ | $-7.536 \cdot 10^{-7}$ | $9.484 \cdot 10^{-12}$ | $9.484 \cdot 10^{-12}$ | $-1.444 \cdot 10^{-6}$ |
| cuWIm | $-3.079 \cdot 10^{-14}$ | $-3.079 \cdot 10^{-14}$ | $-7.47 \cdot 10^{-7}$ | $4.9 \cdot 10^{-11}$ | $4.9 \cdot 10^{-11}$ | $-1.449 \cdot 10^{-6}$ |
| sm | $0$ | $0$ | $0$ | $0.01857$ | $0.01857$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-0.05469$ | $-0.05469$ | $0$ | $0.0004144$ | $0.0004144$ | $0$ |
| cHQ3 | $-0.6571$ | $-0.6571$ | $0$ | $1.304$ | $1.304$ | $0$ |
| cHW | $-0.1055$ | $-0.1055$ | $0$ | $0.06885$ | $0.06885$ | $0$ |
| cHWtil | $-3.847 \cdot 10^{-5}$ | $-3.847 \cdot 10^{-5}$ | $0$ | $0.06272$ | $0.06272$ | $0$ |
| cHl311 | $-0.02413$ | $-0.02413$ | $0$ | $0.0007316$ | $0.0007316$ | $0$ |
| cHl322 | $-0.2195$ | $-0.2195$ | $0$ | $0.006654$ | $0.006654$ | $0$ |
| cHtbIm | $-7.797 \cdot 10^{-6}$ | $-7.797 \cdot 10^{-6}$ | $0$ | $0.3036$ | $0.3036$ | $0$ |
| cHtbRe | $-0.04844$ | $-0.04844$ | $0$ | $0.3702$ | $0.3702$ | $0$ |
| cbHIm | $5.006 \cdot 10^{-6}$ | $5.006 \cdot 10^{-6}$ | $0$ | $0.06337$ | $0.06337$ | $0$ |
| cbHRe | $-0.009146$ | $-0.009146$ | $0$ | $0.07146$ | $0.07146$ | $0$ |
| cbWIm | $-6.495 \cdot 10^{-6}$ | $-6.495 \cdot 10^{-6}$ | $0$ | $1.408$ | $1.408$ | $0$ |
| cbWRe | $0.004016$ | $0.004016$ | $0$ | $1.125$ | $1.125$ | $0$ |
| cll1221 | $0.1555$ | $0.1555$ | $0$ | $0.002357$ | $0.002357$ | $0$ |
| ctHIm | $-0.0008722$ | $-0.0008722$ | $0$ | $0.05854$ | $0.05854$ | $0$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| ctHRe | 0.05617 | 0.05617 | 0 | 0.05056 | 0.05056 | 0 |
| ctWIm | 0.0007365 | 0.0007365 | 0 | 1.455 | 1.455 | 0 |
| ctWRe | 0.2851 | 0.2851 | 0 | 2.1 | 2.1 | 0 |
| sm | 0 | 0 | 0 | 0.4306 | 0.4306 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| cHB | $6.607 \cdot 10^{-9}$ | $6.607 \cdot 10^{-9}$ | 0 | $9.121 \cdot 10^{-9}$ | $9.121 \cdot 10^{-9}$ | 0 |
| cHBtil | $-1.236 \cdot 10^{-10}$ | $-1.236 \cdot 10^{-10}$ | 0 | $7.297 \cdot 10^{-9}$ | $7.297 \cdot 10^{-9}$ | 0 |
| cHDD | $-1.715 \cdot 10^{-9}$ | $-1.715 \cdot 10^{-9}$ | 0 | $5.83 \cdot 10^{-11}$ | $5.83 \cdot 10^{-11}$ | 0 |
| cHW | $-1.61 \cdot 10^{-7}$ | $-1.61 \cdot 10^{-7}$ | 0 | $1.655 \cdot 10^{-6}$ | $1.655 \cdot 10^{-6}$ | 0 |
| cHWB | $-2.015 \cdot 10^{-8}$ | $-2.015 \cdot 10^{-8}$ | 0 | $1.755 \cdot 10^{-8}$ | $1.755 \cdot 10^{-8}$ | 0 |
| cHWBtil | $-1.582 \cdot 10^{-8}$ | $-1.582 \cdot 10^{-8}$ | 0 | $4.42 \cdot 10^{-8}$ | $4.42 \cdot 10^{-8}$ | 0 |
| cHWtil | $-5.876 \cdot 10^{-10}$ | $-5.876 \cdot 10^{-10}$ | 0 | $3.28 \cdot 10^{-8}$ | $3.28 \cdot 10^{-8}$ | 0 |
| cHl311 | $2.663 \cdot 10^{-9}$ | $2.663 \cdot 10^{-9}$ | 0 | $1.207 \cdot 10^{-8}$ | $1.207 \cdot 10^{-8}$ | 0 |
| cHl322 | $-5.228 \cdot 10^{-8}$ | $-5.228 \cdot 10^{-8}$ | 0 | $2.377 \cdot 10^{-9}$ | $2.377 \cdot 10^{-9}$ | 0 |
| cW | $9.898 \cdot 10^{-8}$ | $9.898 \cdot 10^{-8}$ | 0 | $6.531 \cdot 10^{-7}$ | $6.531 \cdot 10^{-7}$ | 0 |
| cWtil | $-5.602 \cdot 10^{-9}$ | $-5.602 \cdot 10^{-9}$ | 0 | $3.441 \cdot 10^{-8}$ | $3.441 \cdot 10^{-8}$ | 0 |
| ceBIm11 | $8.948 \cdot 10^{-14}$ | $8.948 \cdot 10^{-14}$ | 0 | $7.908 \cdot 10^{-8}$ | $7.908 \cdot 10^{-8}$ | 0 |
| ceBRe11 | $-1.607 \cdot 10^{-12}$ | $-1.607 \cdot 10^{-12}$ | 0 | $2.455 \cdot 10^{-7}$ | $2.455 \cdot 10^{-7}$ | 0 |
| ceHIm11 | $-3.451 \cdot 10^{-13}$ | $-3.451 \cdot 10^{-13}$ | 0 | $5.332 \cdot 10^{-9}$ | $5.332 \cdot 10^{-9}$ | 0 |
| ceHRe11 | $2.623 \cdot 10^{-11}$ | $2.623 \cdot 10^{-11}$ | 0 | $4.01 \cdot 10^{-7}$ | $4.01 \cdot 10^{-7}$ | 0 |
| ceWRe11 | $-1.177 \cdot 10^{-12}$ | $-1.177 \cdot 10^{-12}$ | 0 | $1.174 \cdot 10^{-6}$ | $1.174 \cdot 10^{-6}$ | 0 |
| cll1221 | $1.782 \cdot 10^{-8}$ | $1.782 \cdot 10^{-8}$ | 0 | $4.05 \cdot 10^{-10}$ | $4.05 \cdot 10^{-10}$ | 0 |
| sm | 0 | 0 | 0 | $2.948 \cdot 10^{-10}$ | $2.948 \cdot 10^{-10}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-4.719 \cdot 10^{-5}$ | $-4.719 \cdot 10^{-5}$ | 0 | $3.576 \cdot 10^{-7}$ | $3.576 \cdot 10^{-7}$ | 0 |
| cHW | 0.006514 | 0.006514 | 0 | 0.03055 | 0.03055 | 0 |
| cHWtil | $-2.022 \cdot 10^{-11}$ | $-2.022 \cdot 10^{-11}$ | 0 | 0.03185 | 0.03185 | 0 |
| cHl311 | $-0.0007822$ | $-0.0007822$ | 0 | $2.371 \cdot 10^{-5}$ | $2.371 \cdot 10^{-5}$ | 0 |
| cHl322 | 0.1351 | 0.1351 | 0 | 0.6295 | 0.6295 | 0 |
| ceHIm22 | $6.775 \cdot 10^{-8}$ | $6.775 \cdot 10^{-8}$ | 0 | 0.02143 | 0.02143 | 0 |
| ceHRe22 | $-1.158 \cdot 10^{-5}$ | $-1.158 \cdot 10^{-5}$ | 0 | 0.02107 | 0.02107 | 0 |
| ceWIm22 | $-2.356 \cdot 10^{-8}$ | $-2.356 \cdot 10^{-8}$ | 0 | 0.4923 | 0.4923 | 0 |
| ceWRe22 | $-1.238 \cdot 10^{-5}$ | $-1.238 \cdot 10^{-5}$ | 0 | 0.6806 | 0.6806 | 0 |
| cll1221 | 0.0003335 | 0.0003335 | 0 | $5.054 \cdot 10^{-6}$ | $5.054 \cdot 10^{-6}$ | 0 |
| sm | 0 | 0 | 0 | 0.007452 | 0.007452 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | $-3.976 \cdot 10^{-6}$ | $-3.976 \cdot 10^{-6}$ | 0 | 0.007175 | 0.007175 | 0 |
| cHBtil | $-7.139 \cdot 10^{-10}$ | $-7.139 \cdot 10^{-10}$ | 0 | 0.005093 | 0.005093 | 0 |
| cHDD | $-0.0008759$ | $-0.0008759$ | 0 | $2.978 \cdot 10^{-5}$ | $2.978 \cdot 10^{-5}$ | 0 |
| cHW | $-1.267 \cdot 10^{-5}$ | $-1.267 \cdot 10^{-5}$ | 0 | 0.01303 | 0.01303 | 0 |
| cHWB | $-1.889 \cdot 10^{-5}$ | $-1.889 \cdot 10^{-5}$ | 0 | 0.009422 | 0.009422 | 0 |
| cHWBtil | $7.472 \cdot 10^{-10}$ | $7.472 \cdot 10^{-10}$ | 0 | 0.007197 | 0.007197 | 0 |
| cHWtil | $-6.222 \cdot 10^{-10}$ | $-6.222 \cdot 10^{-10}$ | 0 | 0.009097 | 0.009097 | 0 |
| cHl311 | $-8.868 \cdot 10^{-6}$ | $-8.868 \cdot 10^{-6}$ | 0 | $2.688 \cdot 10^{-7}$ | $2.688 \cdot 10^{-7}$ | 0 |
| cHl322 | $-9.368 \cdot 10^{-6}$ | $-9.368 \cdot 10^{-6}$ | 0 | $2.84 \cdot 10^{-7}$ | $2.84 \cdot 10^{-7}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cbBIm | $-2.665 \cdot 10^{-20}$ | $-2.665 \cdot 10^{-20}$ | 0 | 1.197 | 1.197 | 0 |
| cbBRe | $-1.284 \cdot 10^{-5}$ | $-1.284 \cdot 10^{-5}$ | 0 | 0.3315 | 0.3315 | 0 |
| cbHIm | $1.714 \cdot 10^{-18}$ | $1.714 \cdot 10^{-18}$ | 0 | 0.04106 | 0.04106 | 0 |
| cbHRe | $-0.0003693$ | $-0.0003693$ | 0 | 0.0004663 | 0.0004663 | 0 |
| cbWIm | $-1.075 \cdot 10^{-23}$ | $-1.075 \cdot 10^{-23}$ | 0 | 0.5975 | 0.5975 | 0 |
| cbWRe | $1.25 \cdot 10^{-6}$ | $1.25 \cdot 10^{-6}$ | 0 | 0.5223 | 0.5223 | 0 |
| cll1221 | $5.667 \cdot 10^{-6}$ | $5.667 \cdot 10^{-6}$ | 0 | $8.589 \cdot 10^{-8}$ | $8.589 \cdot 10^{-8}$ | 0 |
| sm | 0 | 0 | 0 | $8.495 \cdot 10^{-5}$ | $8.495 \cdot 10^{-5}$ | 0 |

## 1.28 $\quad H\gamma \to c\bar{c}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | $-5.333 \cdot 10^{-7}$ | $-5.333 \cdot 10^{-7}$ | 0 | 0.01824 | 0.01824 | 0 |
| cHBtil | $8.41 \cdot 10^{-11}$ | $8.41 \cdot 10^{-11}$ | 0 | 0.01669 | 0.01669 | 0 |
| cHDD | $-6.839 \cdot 10^{-6}$ | $-6.839 \cdot 10^{-6}$ | 0 | $2.325 \cdot 10^{-7}$ | $2.325 \cdot 10^{-7}$ | 0 |
| cHW | $-2.077 \cdot 10^{-7}$ | $-2.077 \cdot 10^{-7}$ | 0 | 0.009423 | 0.009423 | 0 |
| cHWB | $-7.553 \cdot 10^{-6}$ | $-7.553 \cdot 10^{-6}$ | 0 | 0.01375 | 0.01375 | 0 |
| cHWBtil | $4.102 \cdot 10^{-10}$ | $4.102 \cdot 10^{-10}$ | 0 | 0.01439 | 0.01439 | 0 |
| cHWtil | $3.898 \cdot 10^{-10}$ | $3.898 \cdot 10^{-10}$ | 0 | 0.01101 | 0.01101 | 0 |
| cHl311 | $-3.364 \cdot 10^{-6}$ | $-3.364 \cdot 10^{-6}$ | 0 | $1.02 \cdot 10^{-7}$ | $1.02 \cdot 10^{-7}$ | 0 |
| cHl322 | $-5.047 \cdot 10^{-6}$ | $-5.047 \cdot 10^{-6}$ | 0 | $1.53 \cdot 10^{-7}$ | $1.53 \cdot 10^{-7}$ | 0 |
| cll1221 | $4.099 \cdot 10^{-6}$ | $4.099 \cdot 10^{-6}$ | 0 | $6.212 \cdot 10^{-8}$ | $6.212 \cdot 10^{-8}$ | 0 |
| cuBIm | $1.507 \cdot 10^{-21}$ | $1.507 \cdot 10^{-21}$ | $6.02 \cdot 10^{-5}$ | $7.318 \cdot 10^{-5}$ | $7.318 \cdot 10^{-5}$ | $2.87 \cdot 10^{-7}$ |
| cuBRe | $7.623 \cdot 10^{-10}$ | $7.623 \cdot 10^{-10}$ | $1.443 \cdot 10^{-7}$ | 0.0001214 | 0.0001214 | $2.47 \cdot 10^{-7}$ |
| cuHIm | $\color{blue}{-2.014 \cdot 10^{-28}}$ | $\color{blue}{-1.509 \cdot 10^{-28}}$ | $\color{blue}{0.2507}$ | $1.285 \cdot 10^{-7}$ | $1.285 \cdot 10^{-7}$ | $3.113 \cdot 10^{-7}$ |
| cuHRe | $-3.364 \cdot 10^{-6}$ | $-3.364 \cdot 10^{-6}$ | $1.486 \cdot 10^{-7}$ | $1.02 \cdot 10^{-7}$ | $1.02 \cdot 10^{-7}$ | $2.942 \cdot 10^{-7}$ |
| cuWIm | $3.744 \cdot 10^{-22}$ | $3.743 \cdot 10^{-22}$ | $8.86 \cdot 10^{-5}$ | $1.739 \cdot 10^{-5}$ | $1.739 \cdot 10^{-5}$ | $2.874 \cdot 10^{-7}$ |
| sm | 0 | 0 | 0 | $5.205 \cdot 10^{-5}$ | $5.205 \cdot 10^{-5}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | $-1.456 \cdot 10^{-11}$ | $-1.456 \cdot 10^{-11}$ | 0 | 0.008394 | 0.008394 | 0 |
| cHBtil | $2.569 \cdot 10^{-15}$ | $2.569 \cdot 10^{-15}$ | 0 | 0.006077 | 0.006077 | 0 |
| cHDD | $-1.272 \cdot 10^{-11}$ | $-1.272 \cdot 10^{-11}$ | 0 | $4.325 \cdot 10^{-13}$ | $4.325 \cdot 10^{-13}$ | 0 |
| cHW | $-1.24 \cdot 10^{-11}$ | $-1.24 \cdot 10^{-11}$ | 0 | 0.0125 | 0.0125 | 0 |
| cHWB | $-2.466 \cdot 10^{-11}$ | $-2.466 \cdot 10^{-11}$ | 0 | 0.009927 | 0.009927 | 0 |
| cHWBtil | $-2.678 \cdot 10^{-16}$ | $-2.678 \cdot 10^{-16}$ | 0 | 0.006574 | 0.006574 | 0 |
| cHWtil | $-2.379 \cdot 10^{-15}$ | $-2.379 \cdot 10^{-15}$ | 0 | 0.01077 | 0.01077 | 0 |
| cHl311 | $-6.067 \cdot 10^{-10}$ | $-6.067 \cdot 10^{-10}$ | 0 | $1.839 \cdot 10^{-11}$ | $1.839 \cdot 10^{-11}$ | 0 |
| cHl322 | $-1.63 \cdot 10^{-11}$ | $-1.63 \cdot 10^{-11}$ | 0 | $4.942 \cdot 10^{-13}$ | $4.942 \cdot 10^{-13}$ | 0 |
| cdBIm | $3.782 \cdot 10^{-28}$ | $3.782 \cdot 10^{-28}$ | $-5.816 \cdot 10^{-7}$ | $1.169 \cdot 10^{-9}$ | $1.169 \cdot 10^{-9}$ | $-1.198 \cdot 10^{-6}$ |
| cdBRe | $-3.485 \cdot 10^{-19}$ | $-3.485 \cdot 10^{-19}$ | $-5.739 \cdot 10^{-7}$ | $3.253 \cdot 10^{-10}$ | $3.253 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| cdHIm | $8.078 \cdot 10^{-28}$ | $8.078 \cdot 10^{-28}$ | 0 | $3.387 \cdot 10^{-13}$ | $3.387 \cdot 10^{-13}$ | $-1.152 \cdot 10^{-6}$ |
| cdHRe | $-6.067 \cdot 10^{-10}$ | $-6.067 \cdot 10^{-10}$ | $-5.934 \cdot 10^{-7}$ | $1.839 \cdot 10^{-11}$ | $1.839 \cdot 10^{-11}$ | $-1.142 \cdot 10^{-6}$ |
| cdWIm | $-3.007 \cdot 10^{-27}$ | $-3.007 \cdot 10^{-27}$ | $-5.986 \cdot 10^{-7}$ | $3.601 \cdot 10^{-10}$ | $3.601 \cdot 10^{-10}$ | $-1.166 \cdot 10^{-6}$ |
| cdWRe | $1.866 \cdot 10^{-19}$ | $1.866 \cdot 10^{-19}$ | $-5.895 \cdot 10^{-7}$ | $9.328 \cdot 10^{-11}$ | $9.328 \cdot 10^{-11}$ | $-1.169 \cdot 10^{-6}$ |
| cll1221 | $5.919 \cdot 10^{-12}$ | $5.919 \cdot 10^{-12}$ | 0 | $8.971 \cdot 10^{-14}$ | $8.971 \cdot 10^{-14}$ | 0 |
| sm | 0 | 0 | 0 | $1.69 \cdot 10^{-10}$ | $1.69 \cdot 10^{-10}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | $-7.697 \cdot 10^{-14}$ | $-7.697 \cdot 10^{-14}$ | 0 | 0.01607 | 0.01607 | 0 |
| cHBtil | $-2.135 \cdot 10^{-17}$ | $-2.135 \cdot 10^{-17}$ | 0 | 0.01665 | 0.01665 | 0 |
| cHDD | $-9.142 \cdot 10^{-13}$ | $-9.142 \cdot 10^{-13}$ | 0 | $3.109 \cdot 10^{-14}$ | $3.109 \cdot 10^{-14}$ | 0 |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cHW | $-2.086 \cdot 10^{-13}$ | $-2.086 \cdot 10^{-13}$ | 0 | 0.004396 | 0.004396 | 0 |
| cHWB | $-1.217 \cdot 10^{-12}$ | $-1.217 \cdot 10^{-12}$ | 0 | 0.007723 | 0.007723 | 0 |
| cHWBtil | $-2.455 \cdot 10^{-17}$ | $-2.455 \cdot 10^{-17}$ | 0 | 0.006538 | 0.006538 | 0 |
| cHWtil | $4.312 \cdot 10^{-18}$ | $4.312 \cdot 10^{-18}$ | 0 | 0.002932 | 0.002932 | 0 |
| cHl311 | $-1.023 \cdot 10^{-12}$ | $-1.023 \cdot 10^{-12}$ | 0 | $3.1 \cdot 10^{-14}$ | $3.1 \cdot 10^{-14}$ | 0 |
| cHl322 | $-1.032 \cdot 10^{-12}$ | $-1.032 \cdot 10^{-12}$ | 0 | $3.128 \cdot 10^{-14}$ | $3.128 \cdot 10^{-14}$ | 0 |
| ceBIm11 | $-1.096 \cdot 10^{-23}$ | $-1.096 \cdot 10^{-23}$ | 0 | 0.2474 | 0.2474 | 0 |
| ceBRe11 | $-6.656 \cdot 10^{-18}$ | $-6.656 \cdot 10^{-18}$ | 0 | 0.3786 | 0.3786 | 0 |
| ceHIm11 | $1.654 \cdot 10^{-23}$ | $1.654 \cdot 10^{-23}$ | 0 | 0.003632 | 0.003632 | 0 |
| ceHRe11 | $-1.435 \cdot 10^{-7}$ | $-1.435 \cdot 10^{-7}$ | 0 | 0.001482 | 0.001482 | 0 |
| ceWRe11 | $1.822 \cdot 10^{-18}$ | $1.822 \cdot 10^{-18}$ | 0 | 0.2223 | 0.2223 | 0 |
| cll1221 | $6.234 \cdot 10^{-13}$ | $6.234 \cdot 10^{-13}$ | 0 | $9.449 \cdot 10^{-15}$ | $9.449 \cdot 10^{-15}$ | 0 |
| sm | 0 | 0 | 0 | $8.928 \cdot 10^{-12}$ | $8.928 \cdot 10^{-12}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHB | $-0.03256$ | $-0.03256$ | 0 | 0.02081 | 0.02081 | 0 |
| cHBtil | $8.077 \cdot 10^{-5}$ | $8.077 \cdot 10^{-5}$ | 0 | 0.02462 | 0.02462 | 0 |
| cHDD | $-0.07207$ | $-0.07207$ | 0 | 0.002451 | 0.002451 | 0 |
| cHW | $-0.03258$ | $-0.03258$ | 0 | 0.01178 | 0.01178 | 0 |
| cHWB | $-0.1285$ | $-0.1285$ | 0 | 0.0175 | 0.0175 | 0 |
| cHWBtil | $1.388 \cdot 10^{-5}$ | $1.388 \cdot 10^{-5}$ | 0 | 0.01277 | 0.01277 | 0 |
| cHWtil | $-9.393 \cdot 10^{-5}$ | $-9.393 \cdot 10^{-5}$ | 0 | 0.01294 | 0.01294 | 0 |
| cHl311 | $-0.05015$ | $-0.05015$ | 0 | 0.00152 | 0.00152 | 0 |
| cHl322 | $-0.1933$ | $-0.1933$ | 0 | 0.005861 | 0.005861 | 0 |
| cll1221 | 0.02696 | 0.02696 | 0 | 0.0004086 | 0.0004086 | 0 |
| ctBIm | $1.479 \cdot 10^{-16}$ | $1.479 \cdot 10^{-16}$ | 0 | 1.259 | 1.259 | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| ctHIm | $-1.748 \cdot 10^{-18}$ | $-1.748 \cdot 10^{-18}$ | 0 | 0.005527 | 0.005527 | 0 |
| ctHRe | $-0.1669$ | $-0.1669$ | 0 | 0.005099 | 0.005099 | 0 |
| ctWIm | $1.355 \cdot 10^{-18}$ | $1.355 \cdot 10^{-18}$ | 0 | 0.6374 | 0.6374 | 0 |
| ctWRe | 0.2654 | 0.2654 | 0 | 0.4703 | 0.4703 | 0 |
| sm | 0 | 0 | 0 | 2.341 | 2.341 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHB | 0.0003301 | 0.0003301 | 0 | 0.003899 | 0.003899 | 0 |
| cHBtil | $-5.068 \cdot 10^{-8}$ | $-5.068 \cdot 10^{-8}$ | 0 | 0.002786 | 0.002786 | 0 |
| cHDD | $6.74 \cdot 10^{-5}$ | $6.74 \cdot 10^{-5}$ | 0 | $2.925 \cdot 10^{-5}$ | $2.925 \cdot 10^{-5}$ | 0 |
| cHW | 0.001542 | 0.001542 | 0 | 0.007831 | 0.007831 | 0 |
| cHWB | 0.000682 | 0.000682 | 0 | 0.002033 | 0.002033 | 0 |
| cHWBtil | $-1.222 \cdot 10^{-7}$ | $-1.222 \cdot 10^{-7}$ | 0 | 0.002209 | 0.002209 | 0 |
| cHWtil | $6.939 \cdot 10^{-10}$ | $6.939 \cdot 10^{-10}$ | 0 | 0.006758 | 0.006758 | 0 |
| cHe22 | $-0.04239$ | $-0.04239$ | 0 | 0.3467 | 0.3467 | 0 |
| cHl122 | 0.04421 | 0.04421 | 0 | 0.2908 | 0.2908 | 0 |
| cHl311 | $-0.0003526$ | $-0.0003526$ | 0 | $1.069 \cdot 10^{-5}$ | $1.069 \cdot 10^{-5}$ | 0 |
| cHl322 | 0.04771 | 0.04771 | 0 | 0.3133 | 0.3133 | 0 |
| ceBIm22 | $1.684 \cdot 10^{-8}$ | $1.684 \cdot 10^{-8}$ | 0 | 0.1093 | 0.1093 | 0 |
| ceBRe22 | $-9.112 \cdot 10^{-7}$ | $-9.112 \cdot 10^{-7}$ | 0 | 0.1262 | 0.1262 | 0 |
| ceHIm22 | $4.306 \cdot 10^{-12}$ | $4.306 \cdot 10^{-12}$ | 0 | 0.02035 | 0.02035 | 0 |
| ceHRe22 | $-1.313 \cdot 10^{-6}$ | $-1.313 \cdot 10^{-6}$ | 0 | 0.02045 | 0.02045 | 0 |
| ceWIm22 | $-3.739 \cdot 10^{-8}$ | $-3.739 \cdot 10^{-8}$ | 0 | 0.3173 | 0.3173 | 0 |
| ceWRe22 | $-1.702 \cdot 10^{-6}$ | $-1.702 \cdot 10^{-6}$ | 0 | 0.1039 | 0.1039 | 0 |
| cll1221 | $1.714 \cdot 10^{-5}$ | $1.714 \cdot 10^{-5}$ | 0 | $2.598 \cdot 10^{-7}$ | $2.598 \cdot 10^{-7}$ | 0 |
| sm | 0 | 0 | 0 | 0.001223 | 0.001223 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | 0.0007685 | 0.0007685 | 0 | 0.0006244 | 0.0006244 | 0 |
| cHBtil | $6.776 \cdot 10^{-21}$ | $6.776 \cdot 10^{-21}$ | 0 | 0.0005853 | 0.0005853 | 0 |
| cHDD | $1.079 \cdot 10^{-19}$ | $1.079 \cdot 10^{-19}$ | 0 | $1.119 \cdot 10^{-35}$ | $1.119 \cdot 10^{-35}$ | 0 |
| cHW | 0.00362 | 0.00362 | 0 | 0.01025 | 0.01025 | 0 |
| cHWB | 0.001774 | 0.001774 | 0 | 0.002692 | 0.002692 | 0 |
| cHWBtil | $-7.454 \cdot 10^{-20}$ | $-7.454 \cdot 10^{-20}$ | 0 | 0.003094 | 0.003094 | 0 |
| cHWtil | $-1.412 \cdot 10^{-22}$ | $-1.412 \cdot 10^{-22}$ | 0 | 0.01305 | 0.01305 | 0 |
| cHl133 | $-0.08573$ | $-0.08573$ | 0 | 0.3125 | 0.3125 | 0 |
| cHl311 | $-0.0005905$ | $-0.0005905$ | 0 | $1.79 \cdot 10^{-5}$ | $1.79 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.0003523$ | $-0.0003523$ | 0 | $1.068 \cdot 10^{-5}$ | $1.068 \cdot 10^{-5}$ | 0 |
| cll1221 | 0.000112 | 0.000112 | 0 | $1.697 \cdot 10^{-6}$ | $1.697 \cdot 10^{-6}$ | 0 |
| sm | 0 | 0 | 0 | 0.005414 | 0.005414 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | 0.00115 | 0.00115 | 0 | 0.001355 | 0.001355 | 0 |
| cHBtil | $-1.945 \cdot 10^{-7}$ | $-1.945 \cdot 10^{-7}$ | 0 | 0.001078 | 0.001078 | 0 |
| cHDD | $9.723 \cdot 10^{-5}$ | $9.723 \cdot 10^{-5}$ | 0 | $1.193 \cdot 10^{-5}$ | $1.193 \cdot 10^{-5}$ | 0 |
| cHQ1 | 0.1557 | 0.1557 | 0 | 0.6719 | 0.6719 | 0 |
| cHQ3 | 0.2213 | 0.2213 | 0 | 0.9528 | 0.9528 | 0 |
| cHW | 0.009514 | 0.009514 | 0 | 0.03193 | 0.03193 | 0 |
| cHWB | 0.003276 | 0.003276 | 0 | 0.004021 | 0.004021 | 0 |
| cHWBtil | $-8.548 \cdot 10^{-8}$ | $-8.548 \cdot 10^{-8}$ | 0 | 0.003494 | 0.003494 | 0 |

| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
|---|---|---|---|---|---|---|
| cHWtil | $1.912 \cdot 10^{-8}$ | $1.912 \cdot 10^{-8}$ | 0 | 0.02041 | 0.02041 | 0 |
| cHbq | $-0.01864$ | $-0.01864$ | 0 | 0.4877 | 0.4877 | 0 |
| cHl311 | $-0.0008365$ | $-0.0008365$ | 0 | $2.536 \cdot 10^{-5}$ | $2.536 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.001476$ | $-0.001476$ | 0 | $4.475 \cdot 10^{-5}$ | $4.475 \cdot 10^{-5}$ | 0 |
| cbBIm | $-2.779 \cdot 10^{-6}$ | $-2.779 \cdot 10^{-6}$ | 0 | 0.2038 | 0.2038 | 0 |
| cbBRe | $-0.0006987$ | $-0.0006987$ | 0 | 0.2863 | 0.2863 | 0 |
| cbHIm | $1.765 \cdot 10^{-8}$ | $1.765 \cdot 10^{-8}$ | 0 | 0.06655 | 0.06655 | 0 |
| cbHRe | $-0.02806$ | $-0.02806$ | 0 | 0.09707 | 0.09707 | 0 |
| cbWIm | $1.847 \cdot 10^{-6}$ | $1.847 \cdot 10^{-6}$ | 0 | 1.494 | 1.494 | 0 |
| cbWRe | $-0.001305$ | $-0.001305$ | 0 | 1.199 | 1.199 | 0 |
| cll1221 | 0.0006782 | 0.0006782 | 0 | $1.028 \cdot 10^{-5}$ | $1.028 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | 0.01079 | 0.01079 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| cHB | 0.001081 | 0.001081 | 0 | 0.001258 | 0.001258 | 0 |
| cHBtil | $-3.425 \cdot 10^{-7}$ | $-3.425 \cdot 10^{-7}$ | 0 | 0.001387 | 0.001387 | 0 |
| cHDD | 0.0003012 | 0.0003012 | 0 | $6.735 \cdot 10^{-6}$ | $6.735 \cdot 10^{-6}$ | 0 |
| cHW | 0.006166 | 0.006166 | 0 | 0.02049 | 0.02049 | 0 |
| cHWB | 0.002859 | 0.002859 | 0 | 0.003302 | 0.003302 | 0 |
| cHWBtil | $6.947 \cdot 10^{-8}$ | $6.947 \cdot 10^{-8}$ | 0 | 0.00341 | 0.00341 | 0 |
| cHWtil | $-4.234 \cdot 10^{-7}$ | $-4.234 \cdot 10^{-7}$ | 0 | 0.03575 | 0.03575 | 0 |
| cHd | $-0.04261$ | $-0.04261$ | 0 | 1.045 | 1.045 | 0 |
| cHj1 | 0.1745 | 0.1745 | 0 | 0.7473 | 0.7473 | 0 |
| cHj3 | 0.1321 | 0.1321 | 0 | 0.5654 | 0.5654 | 0 |
| cHl311 | $-0.001715$ | $-0.001715$ | 0 | $5.198 \cdot 10^{-5}$ | $5.198 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.0002854$ | $-0.0002854$ | 0 | $8.652 \cdot 10^{-6}$ | $8.652 \cdot 10^{-6}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2/mod1}$ | mod1 | mod2 | $1-\text{mod2/mod1}$ |
| cdBIm | $2.437 \cdot 10^{-11}$ | $2.437 \cdot 10^{-11}$ | $3.283 \cdot 10^{-7}$ | $9.159 \cdot 10^{-8}$ | $9.159 \cdot 10^{-8}$ | $6.332 \cdot 10^{-7}$ |
| cdBRe | $-8.321 \cdot 10^{-9}$ | $-8.321 \cdot 10^{-9}$ | $3.125 \cdot 10^{-7}$ | $6.524 \cdot 10^{-8}$ | $6.524 \cdot 10^{-8}$ | $6.284 \cdot 10^{-7}$ |
| cdHIm | $-1.151 \cdot 10^{-14}$ | $-1.151 \cdot 10^{-14}$ | $2.606 \cdot 10^{-7}$ | $1.746 \cdot 10^{-8}$ | $1.746 \cdot 10^{-8}$ | $6.3 \cdot 10^{-7}$ |
| cdHRe | $-4.021 \cdot 10^{-10}$ | $-4.021 \cdot 10^{-10}$ | $3.233 \cdot 10^{-7}$ | $1.746 \cdot 10^{-8}$ | $1.746 \cdot 10^{-8}$ | $6.3 \cdot 10^{-7}$ |
| cdWIm | $5.755 \cdot 10^{-11}$ | $5.755 \cdot 10^{-11}$ | $3.302 \cdot 10^{-7}$ | $2.359 \cdot 10^{-7}$ | $2.359 \cdot 10^{-7}$ | $6.357 \cdot 10^{-7}$ |
| cdWRe | $-1.554 \cdot 10^{-8}$ | $-1.554 \cdot 10^{-8}$ | $3.218 \cdot 10^{-7}$ | $2.275 \cdot 10^{-7}$ | $2.275 \cdot 10^{-7}$ | $6.593 \cdot 10^{-7}$ |
| cll1221 | $0.0008907$ | $0.0008907$ | $0$ | $1.35 \cdot 10^{-5}$ | $1.35 \cdot 10^{-5}$ | $0$ |
| sm | $0$ | $0$ | $0$ | $0.002803$ | $0.002803$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2/mod1}$ | mod1 | mod2 | $1-\text{mod2/mod1}$ |
| cHB | $-0.01222$ | $-0.01222$ | $0$ | $0.004164$ | $0.004164$ | $0$ |
| cHBtil | $-6.381 \cdot 10^{-5}$ | $-6.381 \cdot 10^{-5}$ | $0$ | $0.006783$ | $0.006783$ | $0$ |
| cHDD | $-0.002253$ | $-0.002253$ | $0$ | $0.01604$ | $0.01604$ | $0$ |
| cHQ1 | $1.604$ | $1.604$ | $0$ | $0.298$ | $0.298$ | $0$ |
| cHQ3 | $-1.973$ | $-1.973$ | $0$ | $0.6405$ | $0.6405$ | $0$ |
| cHW | $-0.08269$ | $-0.08269$ | $0$ | $0.03501$ | $0.03501$ | $0$ |
| cHWB | $-0.01627$ | $-0.01627$ | $0$ | $0.007793$ | $0.007793$ | $0$ |
| cHWBtil | $-5.131 \cdot 10^{-6}$ | $-5.131 \cdot 10^{-6}$ | $0$ | $0.004699$ | $0.004699$ | $0$ |
| cHWtil | $1.108 \cdot 10^{-5}$ | $1.108 \cdot 10^{-5}$ | $0$ | $0.02922$ | $0.02922$ | $0$ |
| cHl311 | $-0.5189$ | $-0.5189$ | $0$ | $0.01573$ | $0.01573$ | $0$ |
| cHl322 | $-0.3308$ | $-0.3308$ | $0$ | $0.01003$ | $0.01003$ | $0$ |
| cHt | $-2.22$ | $-2.22$ | $0$ | $1.271$ | $1.271$ | $0$ |
| cll1221 | $0.1799$ | $0.1799$ | $0$ | $0.002726$ | $0.002726$ | $0$ |
| ctBIm | $-0.0002479$ | $-0.0002479$ | $0$ | $0.5783$ | $0.5783$ | $0$ |
| ctHIm | $0.000397$ | $0.000397$ | $0$ | $0.06503$ | $0.06503$ | $0$ |
| ctHRe | $-0.02447$ | $-0.02447$ | $0$ | $0.06527$ | $0.06527$ | $0$ |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| ctWIm | $6.743 \cdot 10^{-5}$ | $6.743 \cdot 10^{-5}$ | 0 | 1.285 | 1.285 | 0 |
| ctWRe | 0.04633 | 0.04633 | 0 | 2.598 | 2.598 | 0 |
| sm | 0 | 0 | 0 | 6.452 | 6.452 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHB | 0.0005915 | 0.0005915 | 0 | 0.005405 | 0.005405 | 0 |
| cHBtil | $3.204 \cdot 10^{-7}$ | $3.204 \cdot 10^{-7}$ | 0 | 0.003462 | 0.003462 | 0 |
| cHDD | $9.114 \cdot 10^{-5}$ | $9.114 \cdot 10^{-5}$ | 0 | $7.056 \cdot 10^{-6}$ | $7.056 \cdot 10^{-6}$ | 0 |
| cHW | 0.006045 | 0.006045 | 0 | 0.02428 | 0.02428 | 0 |
| cHWB | 0.003297 | 0.003297 | 0 | 0.006171 | 0.006171 | 0 |
| cHWBtil | $-1.312 \cdot 10^{-7}$ | $-1.312 \cdot 10^{-7}$ | 0 | 0.003375 | 0.003375 | 0 |
| cHWtil | $8.442 \cdot 10^{-7}$ | $8.442 \cdot 10^{-7}$ | 0 | 0.03557 | 0.03557 | 0 |
| cHj1 | $-0.034$ | $-0.034$ | 0 | 0.1763 | 0.1763 | 0 |
| cHj3 | 0.1821 | 0.1821 | 0 | 0.9445 | 0.9445 | 0 |
| cHl311 | $-0.0007462$ | $-0.0007462$ | 0 | $2.262 \cdot 10^{-5}$ | $2.262 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.001394$ | $-0.001394$ | 0 | $4.226 \cdot 10^{-5}$ | $4.226 \cdot 10^{-5}$ | 0 |
| cll1221 | 0.0006581 | 0.0006581 | 0 | $9.974 \cdot 10^{-6}$ | $9.974 \cdot 10^{-6}$ | 0 |
| cuBIm | $-4.782 \cdot 10^{-15}$ | $-4.782 \cdot 10^{-15}$ | $-7.319 \cdot 10^{-7}$ | $6.809 \cdot 10^{-11}$ | $6.809 \cdot 10^{-11}$ | $-1.454 \cdot 10^{-6}$ |
| cuBRe | $2.591 \cdot 10^{-12}$ | $2.591 \cdot 10^{-12}$ | $-7.333 \cdot 10^{-7}$ | $6.341 \cdot 10^{-11}$ | $6.341 \cdot 10^{-11}$ | $-1.451 \cdot 10^{-6}$ |
| cuHIm | $3.766 \cdot 10^{-18}$ | $3.766 \cdot 10^{-18}$ | $-7.17 \cdot 10^{-7}$ | $9.366 \cdot 10^{-12}$ | $9.366 \cdot 10^{-12}$ | $-1.452 \cdot 10^{-6}$ |
| cuHRe | $-3.974 \cdot 10^{-12}$ | $-3.974 \cdot 10^{-12}$ | $-7.045 \cdot 10^{-7}$ | $9.536 \cdot 10^{-12}$ | $9.536 \cdot 10^{-12}$ | $-1.447 \cdot 10^{-6}$ |
| cuWIm | $-5.801 \cdot 10^{-15}$ | $-5.801 \cdot 10^{-15}$ | $-7.241 \cdot 10^{-7}$ | $2.432 \cdot 10^{-10}$ | $2.432 \cdot 10^{-10}$ | $-1.439 \cdot 10^{-6}$ |
| sm | 0 | 0 | 0 | 0.01151 | 0.01151 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $-3.096 \cdot 10^{-10}$ | $-3.096 \cdot 10^{-10}$ | 0 | $1.315 \cdot 10^{-10}$ | $1.315 \cdot 10^{-10}$ | 0 |
| cHB | $-1.41 \cdot 10^{-8}$ | $-1.41 \cdot 10^{-8}$ | 0 | $1.295 \cdot 10^{-10}$ | $1.295 \cdot 10^{-10}$ | 0 |
| cHBtil | $5.015 \cdot 10^{-9}$ | $5.015 \cdot 10^{-9}$ | 0 | $6.862 \cdot 10^{-12}$ | $6.862 \cdot 10^{-12}$ | 0 |
| cHDD | $-2.576 \cdot 10^{-7}$ | $-2.576 \cdot 10^{-7}$ | 0 | $3.015 \cdot 10^{-9}$ | $3.015 \cdot 10^{-9}$ | 0 |
| cHQ1 | $8.422 \cdot 10^{-7}$ | $8.422 \cdot 10^{-7}$ | 0 | $1.274 \cdot 10^{-7}$ | $1.274 \cdot 10^{-7}$ | 0 |
| cHQ3 | $-1.648 \cdot 10^{-5}$ | $-1.648 \cdot 10^{-5}$ | 0 | $9.448 \cdot 10^{-7}$ | $9.448 \cdot 10^{-7}$ | 0 |
| cHW | $-7.675 \cdot 10^{-8}$ | $-7.675 \cdot 10^{-8}$ | 0 | $4.835 \cdot 10^{-8}$ | $4.835 \cdot 10^{-8}$ | 0 |
| cHWB | $-1.064 \cdot 10^{-7}$ | $-1.064 \cdot 10^{-7}$ | 0 | $1.396 \cdot 10^{-8}$ | $1.396 \cdot 10^{-8}$ | 0 |
| cHWBtil | $-2.296 \cdot 10^{-8}$ | $-2.296 \cdot 10^{-8}$ | 0 | $1.636 \cdot 10^{-8}$ | $1.636 \cdot 10^{-8}$ | 0 |
| cHWtil | $2.8 \cdot 10^{-8}$ | $2.8 \cdot 10^{-8}$ | 0 | $1.858 \cdot 10^{-8}$ | $1.858 \cdot 10^{-8}$ | 0 |
| cHbq | $-3.001 \cdot 10^{-8}$ | $-3.001 \cdot 10^{-8}$ | 0 | $4.907 \cdot 10^{-7}$ | $4.907 \cdot 10^{-7}$ | 0 |
| cHl311 | $-5.391 \cdot 10^{-6}$ | $-5.391 \cdot 10^{-6}$ | 0 | $2.451 \cdot 10^{-7}$ | $2.451 \cdot 10^{-7}$ | 0 |
| cHl322 | $-1.008 \cdot 10^{-6}$ | $-1.008 \cdot 10^{-6}$ | 0 | $4.585 \cdot 10^{-8}$ | $4.585 \cdot 10^{-8}$ | 0 |
| cHtbIm | $-7.873 \cdot 10^{-9}$ | $-7.873 \cdot 10^{-9}$ | 0 | $3.703 \cdot 10^{-7}$ | $3.703 \cdot 10^{-7}$ | 0 |
| cHtbRe | $-3.095 \cdot 10^{-8}$ | $-3.095 \cdot 10^{-8}$ | 0 | $2.439 \cdot 10^{-7}$ | $2.439 \cdot 10^{-7}$ | 0 |
| cW | $-2.143 \cdot 10^{-8}$ | $-2.143 \cdot 10^{-8}$ | 0 | $8.478 \cdot 10^{-7}$ | $8.478 \cdot 10^{-7}$ | 0 |
| cWtil | $2.881 \cdot 10^{-7}$ | $2.881 \cdot 10^{-7}$ | 0 | $8.697 \cdot 10^{-7}$ | $8.697 \cdot 10^{-7}$ | 0 |
| cbBIm | $-1.226 \cdot 10^{-10}$ | $-1.226 \cdot 10^{-10}$ | 0 | $5.001 \cdot 10^{-9}$ | $5.001 \cdot 10^{-9}$ | 0 |
| cbBRe | $4.697 \cdot 10^{-9}$ | $4.697 \cdot 10^{-9}$ | 0 | $4.542 \cdot 10^{-9}$ | $4.542 \cdot 10^{-9}$ | 0 |
| cbHIm | $8.752 \cdot 10^{-9}$ | $8.752 \cdot 10^{-9}$ | 0 | $2.367 \cdot 10^{-7}$ | $2.367 \cdot 10^{-7}$ | 0 |
| cbHRe | $1.127 \cdot 10^{-7}$ | $1.127 \cdot 10^{-7}$ | 0 | $4.266 \cdot 10^{-7}$ | $4.266 \cdot 10^{-7}$ | 0 |
| cbWIm | $-2.977 \cdot 10^{-8}$ | $-2.977 \cdot 10^{-8}$ | 0 | $4.104 \cdot 10^{-6}$ | $4.104 \cdot 10^{-6}$ | 0 |
| cbWRe | $7.506 \cdot 10^{-9}$ | $7.506 \cdot 10^{-9}$ | 0 | $1.583 \cdot 10^{-6}$ | $1.583 \cdot 10^{-6}$ | 0 |
| cll1221 | $4.668 \cdot 10^{-8}$ | $4.668 \cdot 10^{-8}$ | 0 | $1.061 \cdot 10^{-9}$ | $1.061 \cdot 10^{-9}$ | 0 |
| ctHIm | $-9.944 \cdot 10^{-8}$ | $-9.944 \cdot 10^{-8}$ | 0 | $1.323 \cdot 10^{-9}$ | $1.323 \cdot 10^{-9}$ | 0 |
| ctHRe | $4.103 \cdot 10^{-7}$ | $4.103 \cdot 10^{-7}$ | 0 | $3.39 \cdot 10^{-8}$ | $3.39 \cdot 10^{-8}$ | 0 |
| ctWIm | $-1.492 \cdot 10^{-6}$ | $-1.492 \cdot 10^{-6}$ | 0 | $2.5 \cdot 10^{-6}$ | $2.5 \cdot 10^{-6}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| ctWRe | $8.329 \cdot 10^{-7}$ | $8.329 \cdot 10^{-7}$ | $0$ | $2.624 \cdot 10^{-6}$ | $2.624 \cdot 10^{-6}$ | $0$ |
| sm | $0$ | $0$ | $0$ | $1.453 \cdot 10^{-5}$ | $1.453 \cdot 10^{-5}$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cH | $1.397 \cdot 10^{-10}$ | $1.397 \cdot 10^{-10}$ | $0$ | $3.43 \cdot 10^{-11}$ | $3.43 \cdot 10^{-11}$ | $0$ |
| cHB | $1.782 \cdot 10^{-8}$ | $1.782 \cdot 10^{-8}$ | $0$ | $1.227 \cdot 10^{-9}$ | $1.227 \cdot 10^{-9}$ | $0$ |
| cHBtil | $-3.782 \cdot 10^{-9}$ | $-3.782 \cdot 10^{-9}$ | $0$ | $1.35 \cdot 10^{-9}$ | $1.35 \cdot 10^{-9}$ | $0$ |
| cHDD | $-2.77 \cdot 10^{-8}$ | $-2.77 \cdot 10^{-8}$ | $0$ | $5.016 \cdot 10^{-10}$ | $5.016 \cdot 10^{-10}$ | $0$ |
| cHW | $-1.331 \cdot 10^{-7}$ | $-1.331 \cdot 10^{-7}$ | $0$ | $7.849 \cdot 10^{-8}$ | $7.849 \cdot 10^{-8}$ | $0$ |
| cHWB | $8.005 \cdot 10^{-9}$ | $8.005 \cdot 10^{-9}$ | $0$ | $2.039 \cdot 10^{-7}$ | $2.039 \cdot 10^{-7}$ | $0$ |
| cHWBtil | $8.743 \cdot 10^{-8}$ | $8.743 \cdot 10^{-8}$ | $0$ | $4.798 \cdot 10^{-7}$ | $4.798 \cdot 10^{-7}$ | $0$ |
| cHWtil | $5.25 \cdot 10^{-7}$ | $5.25 \cdot 10^{-7}$ | $0$ | $4.741 \cdot 10^{-6}$ | $4.741 \cdot 10^{-6}$ | $0$ |
| cHj1 | $-7.341 \cdot 10^{-7}$ | $-7.341 \cdot 10^{-7}$ | $0$ | $6.91 \cdot 10^{-7}$ | $6.91 \cdot 10^{-7}$ | $0$ |
| cHj3 | $-5.551 \cdot 10^{-5}$ | $-5.551 \cdot 10^{-5}$ | $0$ | $5.722 \cdot 10^{-5}$ | $5.722 \cdot 10^{-5}$ | $0$ |
| cHl311 | $-4.628 \cdot 10^{-7}$ | $-4.628 \cdot 10^{-7}$ | $0$ | $2.104 \cdot 10^{-8}$ | $2.104 \cdot 10^{-8}$ | $0$ |
| cHl322 | $-1.206 \cdot 10^{-7}$ | $-1.206 \cdot 10^{-7}$ | $0$ | $5.482 \cdot 10^{-9}$ | $5.482 \cdot 10^{-9}$ | $0$ |
| cHudIm | $5.296 \cdot 10^{-18}$ | $5.296 \cdot 10^{-18}$ | $4.721 \cdot 10^{-7}$ | $6.235 \cdot 10^{-24}$ | $6.235 \cdot 10^{-24}$ | $9.462 \cdot 10^{-7}$ |
| cHudRe | $-4.459 \cdot 10^{-18}$ | $-4.459 \cdot 10^{-18}$ | $4.709 \cdot 10^{-7}$ | $9.064 \cdot 10^{-25}$ | $9.064 \cdot 10^{-25}$ | $9.488 \cdot 10^{-7}$ |
| cW | $-1.859 \cdot 10^{-7}$ | $-1.859 \cdot 10^{-7}$ | $0$ | $4.46 \cdot 10^{-7}$ | $4.46 \cdot 10^{-7}$ | $0$ |
| cWtil | $2.509 \cdot 10^{-8}$ | $2.509 \cdot 10^{-8}$ | $0$ | $4.036 \cdot 10^{-7}$ | $4.036 \cdot 10^{-7}$ | $0$ |
| cdHIm | $-6.869 \cdot 10^{-13}$ | $-6.869 \cdot 10^{-13}$ | $3.203 \cdot 10^{-7}$ | $9.567 \cdot 10^{-21}$ | $9.567 \cdot 10^{-21}$ | $6.271 \cdot 10^{-7}$ |
| cdHRe | $2.712 \cdot 10^{-13}$ | $2.712 \cdot 10^{-13}$ | $3.318 \cdot 10^{-7}$ | $7.707 \cdot 10^{-21}$ | $7.707 \cdot 10^{-21}$ | $6.228 \cdot 10^{-7}$ |
| cdWIm | $1.776 \cdot 10^{-11}$ | $1.776 \cdot 10^{-11}$ | $2.816 \cdot 10^{-7}$ | $2.426 \cdot 10^{-17}$ | $2.426 \cdot 10^{-17}$ | $6.183 \cdot 10^{-7}$ |
| cdWRe | $-1.638 \cdot 10^{-13}$ | $-1.638 \cdot 10^{-13}$ | $3.052 \cdot 10^{-7}$ | $2.762 \cdot 10^{-19}$ | $2.762 \cdot 10^{-19}$ | $6.518 \cdot 10^{-7}$ |
| cll1221 | $7.45 \cdot 10^{-8}$ | $7.45 \cdot 10^{-8}$ | $0$ | $1.694 \cdot 10^{-9}$ | $1.694 \cdot 10^{-9}$ | $0$ |
| cuBIm | $2.386 \cdot 10^{-11}$ | $2.386 \cdot 10^{-11}$ | $1.258 \cdot 10^{-7}$ | $4.839 \cdot 10^{-13}$ | $4.839 \cdot 10^{-13}$ | $2.893 \cdot 10^{-7}$ |

| | | interference | | | square | |
|---|---|---|---|---|---|---|
| cuBRe | $-6.127 \cdot 10^{-11}$ | $-6.127 \cdot 10^{-11}$ | $1.469 \cdot 10^{-7}$ | $9.68 \cdot 10^{-12}$ | $9.68 \cdot 10^{-12}$ | $2.789 \cdot 10^{-7}$ |
| cuHIm | $4.825 \cdot 10^{-11}$ | $4.825 \cdot 10^{-11}$ | $1.451 \cdot 10^{-7}$ | $1.667 \cdot 10^{-12}$ | $1.667 \cdot 10^{-12}$ | $2.999 \cdot 10^{-7}$ |
| cuHRe | $-1.183 \cdot 10^{-11}$ | $-1.183 \cdot 10^{-11}$ | $1.69 \cdot 10^{-7}$ | $2.14 \cdot 10^{-12}$ | $2.14 \cdot 10^{-12}$ | $2.804 \cdot 10^{-7}$ |
| cuWIm | $1.771 \cdot 10^{-10}$ | $1.771 \cdot 10^{-10}$ | $1.129 \cdot 10^{-7}$ | $1.077 \cdot 10^{-10}$ | $1.077 \cdot 10^{-10}$ | $2.784 \cdot 10^{-7}$ |
| sm | $0$ | $0$ | $0$ | $3.795 \cdot 10^{-7}$ | $3.795 \cdot 10^{-7}$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| cH | $9.491 \cdot 10^{-16}$ | $9.491 \cdot 10^{-16}$ | $0$ | $2.515 \cdot 10^{-16}$ | $2.515 \cdot 10^{-16}$ | $0$ |
| cHB | $-2.681 \cdot 10^{-8}$ | $-2.681 \cdot 10^{-8}$ | $0$ | $3.063 \cdot 10^{-10}$ | $3.063 \cdot 10^{-10}$ | $0$ |
| cHBtil | $-4.614 \cdot 10^{-9}$ | $-4.614 \cdot 10^{-9}$ | $0$ | $1.167 \cdot 10^{-10}$ | $1.167 \cdot 10^{-10}$ | $0$ |
| cHDD | $-2.649 \cdot 10^{-7}$ | $-2.649 \cdot 10^{-7}$ | $0$ | $3.708 \cdot 10^{-9}$ | $3.708 \cdot 10^{-9}$ | $0$ |
| cHW | $-2.675 \cdot 10^{-6}$ | $-2.675 \cdot 10^{-6}$ | $0$ | $1.138 \cdot 10^{-5}$ | $1.138 \cdot 10^{-5}$ | $0$ |
| cHWB | $-2.598 \cdot 10^{-8}$ | $-2.598 \cdot 10^{-8}$ | $0$ | $1.542 \cdot 10^{-8}$ | $1.542 \cdot 10^{-8}$ | $0$ |
| cHWBtil | $-3.298 \cdot 10^{-9}$ | $-3.298 \cdot 10^{-9}$ | $0$ | $1.401 \cdot 10^{-8}$ | $1.401 \cdot 10^{-8}$ | $0$ |
| cHWtil | $7.293 \cdot 10^{-7}$ | $7.293 \cdot 10^{-7}$ | $0$ | $1.58 \cdot 10^{-6}$ | $1.58 \cdot 10^{-6}$ | $0$ |
| cHd | $-1.555 \cdot 10^{-7}$ | $-1.555 \cdot 10^{-7}$ | $0$ | $8.943 \cdot 10^{-7}$ | $8.943 \cdot 10^{-7}$ | $0$ |
| cHj1 | $4.919 \cdot 10^{-6}$ | $4.919 \cdot 10^{-6}$ | $0$ | $2.799 \cdot 10^{-7}$ | $2.799 \cdot 10^{-7}$ | $0$ |
| cHj3 | $8.424 \cdot 10^{-7}$ | $8.424 \cdot 10^{-7}$ | $0$ | $8.571 \cdot 10^{-7}$ | $8.571 \cdot 10^{-7}$ | $0$ |
| cHl311 | $-3.494 \cdot 10^{-7}$ | $-3.494 \cdot 10^{-7}$ | $0$ | $1.589 \cdot 10^{-8}$ | $1.589 \cdot 10^{-8}$ | $0$ |
| cHl322 | $-2.237 \cdot 10^{-7}$ | $-2.237 \cdot 10^{-7}$ | $0$ | $1.017 \cdot 10^{-8}$ | $1.017 \cdot 10^{-8}$ | $0$ |
| cHudIm | $1.782 \cdot 10^{-25}$ | $1.782 \cdot 10^{-25}$ | $-1.347 \cdot 10^{-6}$ | $2.18 \cdot 10^{-35}$ | $2.18 \cdot 10^{-35}$ | $-2.66 \cdot 10^{-6}$ |
| cHudRe | $-4.241 \cdot 10^{-24}$ | $-4.241 \cdot 10^{-24}$ | $-1.344 \cdot 10^{-6}$ | $3.508 \cdot 10^{-35}$ | $3.508 \cdot 10^{-35}$ | $-2.651 \cdot 10^{-6}$ |
| cW | $-2.003 \cdot 10^{-8}$ | $-2.003 \cdot 10^{-8}$ | $0$ | $2.382 \cdot 10^{-6}$ | $2.382 \cdot 10^{-6}$ | $0$ |
| cWtil | $1.954 \cdot 10^{-7}$ | $1.954 \cdot 10^{-7}$ | $0$ | $4.626 \cdot 10^{-7}$ | $4.626 \cdot 10^{-7}$ | $0$ |
| cdBIm | $-4.263 \cdot 10^{-16}$ | $-4.263 \cdot 10^{-16}$ | $-5.864 \cdot 10^{-7}$ | $2.43 \cdot 10^{-18}$ | $2.43 \cdot 10^{-18}$ | $-1.194 \cdot 10^{-6}$ |
| cdBRe | $1.297 \cdot 10^{-16}$ | $1.297 \cdot 10^{-16}$ | $-6.168 \cdot 10^{-7}$ | $5.219 \cdot 10^{-18}$ | $5.219 \cdot 10^{-18}$ | $-1.169 \cdot 10^{-6}$ |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cdHIm | $-2.511 \cdot 10^{-16}$ | $-2.511 \cdot 10^{-16}$ | $-5.973 \cdot 10^{-7}$ | $8.428 \cdot 10^{-17}$ | $8.428 \cdot 10^{-17}$ | $-1.175 \cdot 10^{-6}$ |
| cdHRe | $-1.176 \cdot 10^{-16}$ | $-1.176 \cdot 10^{-16}$ | $-5.951 \cdot 10^{-7}$ | $3.727 \cdot 10^{-17}$ | $3.727 \cdot 10^{-17}$ | $-1.181 \cdot 10^{-6}$ |
| cdWIm | $7.359 \cdot 10^{-16}$ | $7.359 \cdot 10^{-16}$ | $-5.843 \cdot 10^{-7}$ | $7.448 \cdot 10^{-16}$ | $7.448 \cdot 10^{-16}$ | $-1.168 \cdot 10^{-6}$ |
| cdWRe | $2.182 \cdot 10^{-16}$ | $2.182 \cdot 10^{-16}$ | $-5.959 \cdot 10^{-7}$ | $2.275 \cdot 10^{-15}$ | $2.275 \cdot 10^{-15}$ | $-1.143 \cdot 10^{-6}$ |
| cll1221 | $7.225 \cdot 10^{-6}$ | $7.225 \cdot 10^{-6}$ | $0$ | $1.643 \cdot 10^{-7}$ | $1.643 \cdot 10^{-7}$ | $0$ |
| cuHIm | $-5.805 \cdot 10^{-17}$ | $-5.805 \cdot 10^{-17}$ | $-7.235 \cdot 10^{-7}$ | $1.491 \cdot 10^{-27}$ | $1.491 \cdot 10^{-27}$ | $-1.475 \cdot 10^{-6}$ |
| cuHRe | $1.179 \cdot 10^{-16}$ | $1.179 \cdot 10^{-16}$ | $-6.784 \cdot 10^{-7}$ | $3.74 \cdot 10^{-27}$ | $3.74 \cdot 10^{-27}$ | $-1.444 \cdot 10^{-6}$ |
| cuWIm | $8.9 \cdot 10^{-17}$ | $8.9 \cdot 10^{-17}$ | $-7.191 \cdot 10^{-7}$ | $1.378 \cdot 10^{-25}$ | $1.378 \cdot 10^{-25}$ | $-1.452 \cdot 10^{-6}$ |
| sm | $0$ | $0$ | $0$ | $2.204 \cdot 10^{-6}$ | $2.204 \cdot 10^{-6}$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cH | $2.769 \cdot 10^{-7}$ | $2.769 \cdot 10^{-7}$ | $0$ | $5.769 \cdot 10^{-8}$ | $5.769 \cdot 10^{-8}$ | $0$ |
| cHB | $2.639 \cdot 10^{-8}$ | $2.639 \cdot 10^{-8}$ | $0$ | $7.342 \cdot 10^{-10}$ | $7.342 \cdot 10^{-10}$ | $0$ |
| cHBtil | $-8.031 \cdot 10^{-9}$ | $-8.031 \cdot 10^{-9}$ | $0$ | $5.795 \cdot 10^{-11}$ | $5.795 \cdot 10^{-11}$ | $0$ |
| cHDD | $-2.676 \cdot 10^{-7}$ | $-2.676 \cdot 10^{-7}$ | $0$ | $3.002 \cdot 10^{-7}$ | $3.002 \cdot 10^{-7}$ | $0$ |
| cHQ1 | $-4.062 \cdot 10^{-7}$ | $-4.062 \cdot 10^{-7}$ | $0$ | $1.91 \cdot 10^{-6}$ | $1.91 \cdot 10^{-6}$ | $0$ |
| cHQ3 | $5.637 \cdot 10^{-6}$ | $5.637 \cdot 10^{-6}$ | $0$ | $8.383 \cdot 10^{-6}$ | $8.383 \cdot 10^{-6}$ | $0$ |
| cHW | $-9.358 \cdot 10^{-7}$ | $-9.358 \cdot 10^{-7}$ | $0$ | $1.928 \cdot 10^{-5}$ | $1.928 \cdot 10^{-5}$ | $0$ |
| cHWB | $2.32 \cdot 10^{-5}$ | $2.32 \cdot 10^{-5}$ | $0$ | $7.45 \cdot 10^{-7}$ | $7.45 \cdot 10^{-7}$ | $0$ |
| cHWBtil | $1.96 \cdot 10^{-8}$ | $1.96 \cdot 10^{-8}$ | $0$ | $1.844 \cdot 10^{-7}$ | $1.844 \cdot 10^{-7}$ | $0$ |
| cHWtil | $1.861 \cdot 10^{-7}$ | $1.861 \cdot 10^{-7}$ | $0$ | $2.509 \cdot 10^{-5}$ | $2.509 \cdot 10^{-5}$ | $0$ |
| cHl311 | $-1.802 \cdot 10^{-5}$ | $-1.802 \cdot 10^{-5}$ | $0$ | $8.192 \cdot 10^{-7}$ | $8.192 \cdot 10^{-7}$ | $0$ |
| cHl322 | $-2.368 \cdot 10^{-6}$ | $-2.368 \cdot 10^{-6}$ | $0$ | $1.077 \cdot 10^{-7}$ | $1.077 \cdot 10^{-7}$ | $0$ |
| cHt | $2.019 \cdot 10^{-5}$ | $2.019 \cdot 10^{-5}$ | $0$ | $7.366 \cdot 10^{-7}$ | $7.366 \cdot 10^{-7}$ | $0$ |
| cHtbIm | $-4.241 \cdot 10^{-8}$ | $-4.241 \cdot 10^{-8}$ | $0$ | $1.654 \cdot 10^{-9}$ | $1.654 \cdot 10^{-9}$ | $0$ |
| cHtbRe | $-5.255 \cdot 10^{-7}$ | $-5.255 \cdot 10^{-7}$ | $0$ | $2.009 \cdot 10^{-9}$ | $2.009 \cdot 10^{-9}$ | $0$ |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cW | $-6.19 \cdot 10^{-7}$ | $-6.19 \cdot 10^{-7}$ | 0 | $5.731 \cdot 10^{-6}$ | $5.731 \cdot 10^{-6}$ | 0 |
| cWtil | $5.107 \cdot 10^{-7}$ | $5.107 \cdot 10^{-7}$ | 0 | $4.477 \cdot 10^{-6}$ | $4.477 \cdot 10^{-6}$ | 0 |
| cbHIm | $5.843 \cdot 10^{-10}$ | $5.843 \cdot 10^{-10}$ | 0 | $1.427 \cdot 10^{-12}$ | $1.427 \cdot 10^{-12}$ | 0 |
| cbHRe | $7.057 \cdot 10^{-9}$ | $7.057 \cdot 10^{-9}$ | 0 | $1.248 \cdot 10^{-11}$ | $1.248 \cdot 10^{-11}$ | 0 |
| cbWIm | $-3.23 \cdot 10^{-9}$ | $-3.23 \cdot 10^{-9}$ | 0 | $3.81 \cdot 10^{-8}$ | $3.81 \cdot 10^{-8}$ | 0 |
| cbWRe | $-1.28 \cdot 10^{-7}$ | $-1.28 \cdot 10^{-7}$ | 0 | $1.193 \cdot 10^{-8}$ | $1.193 \cdot 10^{-8}$ | 0 |
| cll1221 | $2.181 \cdot 10^{-7}$ | $2.181 \cdot 10^{-7}$ | 0 | $4.958 \cdot 10^{-9}$ | $4.958 \cdot 10^{-9}$ | 0 |
| ctBIm | $2.888 \cdot 10^{-7}$ | $2.888 \cdot 10^{-7}$ | 0 | $5.866 \cdot 10^{-8}$ | $5.866 \cdot 10^{-8}$ | 0 |
| ctHIm | $9.834 \cdot 10^{-7}$ | $9.834 \cdot 10^{-7}$ | 0 | $2.77 \cdot 10^{-7}$ | $2.77 \cdot 10^{-7}$ | 0 |
| ctHRe | $-8.812 \cdot 10^{-8}$ | $-8.812 \cdot 10^{-8}$ | 0 | $7.631 \cdot 10^{-7}$ | $7.631 \cdot 10^{-7}$ | 0 |
| ctWIm | $-6.905 \cdot 10^{-7}$ | $-6.905 \cdot 10^{-7}$ | 0 | $2.401 \cdot 10^{-5}$ | $2.401 \cdot 10^{-5}$ | 0 |
| ctWRe | $2.501 \cdot 10^{-5}$ | $2.501 \cdot 10^{-5}$ | 0 | $7.639 \cdot 10^{-5}$ | $7.639 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | $7.602 \cdot 10^{-6}$ | $7.602 \cdot 10^{-6}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | 2.515 | 2.515 | 0 | 0.03812 | 0.03812 | 0 |
| cHW | 0.2915 | 0.2915 | 0 | 3.341 | 3.341 | 0 |
| cHWB | 0.6213 | 0.6213 | 0 | 0.04208 | 0.04208 | 0 |
| cHWBtil | $-2.013 \cdot 10^{-15}$ | $-2.013 \cdot 10^{-15}$ | 0 | 0.001982 | 0.001982 | 0 |
| cHWtil | $-2.755 \cdot 10^{-15}$ | $-2.755 \cdot 10^{-15}$ | 0 | 3.439 | 3.439 | 0 |
| cHl311 | $-1.139$ | $-1.139$ | 0 | 0.03454 | 0.03454 | 0 |
| cHl322 | $-5.053$ | $-5.053$ | 0 | 0.1532 | 0.1532 | 0 |
| cW | 0.04155 | 0.04155 | 0 | 0.4104 | 0.4104 | 0 |
| cWtil | <span style="color:red">$4.762 \cdot 10^{-14}$</span> | <span style="color:red">$1.237 \cdot 10^{-13}$</span> | <span style="color:red">$-1.598$</span> | 6.927 | 6.927 | 0 |
| cll1221 | 0.6226 | 0.6226 | 0 | 0.009436 | 0.009436 | 0 |
| sm | 0 | 0 | 0 | 26.54 | 26.54 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | $-0.04495$ | $-0.04495$ | 0 | 0.2771 | 0.2771 | 0 |
| cHBtil | $-1.718 \cdot 10^{-17}$ | $-1.718 \cdot 10^{-17}$ | 0 | 0.2771 | 0.2771 | 0 |
| cHDD | $-0.02145$ | $-0.02145$ | 0 | 0.001133 | 0.001133 | 0 |
| cHW | $-0.01318$ | $-0.01318$ | 0 | 0.02279 | 0.02279 | 0 |
| cHWB | $-0.04994$ | $-0.04994$ | 0 | 0.08126 | 0.08126 | 0 |
| cHWBtil | $-3.41 \cdot 10^{-17}$ | $-3.41 \cdot 10^{-17}$ | 0 | 0.07495 | 0.07495 | 0 |
| cHWtil | $-1.34 \cdot 10^{-17}$ | $-1.34 \cdot 10^{-17}$ | 0 | 0.02279 | 0.02279 | 0 |
| cHl311 | $-0.04842$ | $-0.04842$ | 0 | 0.001468 | 0.001468 | 0 |
| cHl322 | $-0.009239$ | $-0.009239$ | 0 | 0.0002801 | 0.0002801 | 0 |
| cW | 0.0005342 | 0.0005342 | 0 | 0.6648 | 0.6648 | 0 |
| cWtil | $8.222 \cdot 10^{-18}$ | $8.217 \cdot 10^{-18}$ | 0.0006639 | 0.6626 | 0.6626 | 0 |
| cll1221 | 0.004412 | 0.004412 | 0 | $6.686 \cdot 10^{-5}$ | $6.686 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | 0.09284 | 0.09284 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | $-1.189 \cdot 10^{-8}$ | $-1.189 \cdot 10^{-8}$ | 0 | $1.33 \cdot 10^{-7}$ | $1.33 \cdot 10^{-7}$ | 0 |
| cHBtil | $-2.577 \cdot 10^{-9}$ | $-2.577 \cdot 10^{-9}$ | 0 | $1.453 \cdot 10^{-7}$ | $1.453 \cdot 10^{-7}$ | 0 |
| cHDD | $-3.321 \cdot 10^{-7}$ | $-3.321 \cdot 10^{-7}$ | 0 | $2.633 \cdot 10^{-8}$ | $2.633 \cdot 10^{-8}$ | 0 |
| cHW | $3.524 \cdot 10^{-9}$ | $3.524 \cdot 10^{-9}$ | 0 | $2.47 \cdot 10^{-8}$ | $2.47 \cdot 10^{-8}$ | 0 |
| cHWB | $-3.571 \cdot 10^{-7}$ | $-3.571 \cdot 10^{-7}$ | 0 | $1.322 \cdot 10^{-7}$ | $1.322 \cdot 10^{-7}$ | 0 |
| cHWBtil | $1.14 \cdot 10^{-8}$ | $1.14 \cdot 10^{-8}$ | 0 | $8.041 \cdot 10^{-8}$ | $8.041 \cdot 10^{-8}$ | 0 |
| cHWtil | $-8.243 \cdot 10^{-10}$ | $-8.243 \cdot 10^{-10}$ | 0 | $2.561 \cdot 10^{-9}$ | $2.561 \cdot 10^{-9}$ | 0 |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|---|
| cHl311 | $-3.929 \cdot 10^{-6}$ | $-3.929 \cdot 10^{-6}$ | 0 | | $1.787 \cdot 10^{-7}$ | $1.787 \cdot 10^{-7}$ | 0 |
| cHl322 | $-9.117 \cdot 10^{-8}$ | $-9.117 \cdot 10^{-8}$ | 0 | | $4.145 \cdot 10^{-9}$ | $4.145 \cdot 10^{-9}$ | 0 |
| cW | $-1.081 \cdot 10^{-6}$ | $-1.081 \cdot 10^{-6}$ | 0 | | $1.631 \cdot 10^{-6}$ | $1.631 \cdot 10^{-6}$ | 0 |
| cWtil | $1.011 \cdot 10^{-6}$ | $1.011 \cdot 10^{-6}$ | 0 | | $1.886 \cdot 10^{-6}$ | $1.886 \cdot 10^{-6}$ | 0 |
| cll1221 | $8.682 \cdot 10^{-8}$ | $8.682 \cdot 10^{-8}$ | 0 | | $1.974 \cdot 10^{-9}$ | $1.974 \cdot 10^{-9}$ | 0 |
| sm | 0 | 0 | 0 | | $6.386 \cdot 10^{-6}$ | $6.386 \cdot 10^{-6}$ | 0 |

## 1.45 $\quad \bar{b}t \to \bar{d}u$

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHQ3 | 0.0008963 | 0.0008963 | 0 | | $2.717 \cdot 10^{-5}$ | $2.717 \cdot 10^{-5}$ | 0 |
| cHj3 | 0.000155 | 0.000155 | 0 | | $4.698 \cdot 10^{-6}$ | $4.698 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.001622$ | $-0.001622$ | 0 | | $4.917 \cdot 10^{-5}$ | $4.917 \cdot 10^{-5}$ | 0 |
| cHl322 | $-1.658 \cdot 10^{-5}$ | $-1.658 \cdot 10^{-5}$ | 0 | | $5.025 \cdot 10^{-7}$ | $5.025 \cdot 10^{-7}$ | 0 |
| cHtbIm | $-3.644 \cdot 10^{-21}$ | $-3.644 \cdot 10^{-21}$ | 0 | | $3.806 \cdot 10^{-6}$ | $3.806 \cdot 10^{-6}$ | 0 |
| cHtbRe | $-2.016 \cdot 10^{-6}$ | $-2.016 \cdot 10^{-6}$ | 0 | | $6.552 \cdot 10^{-7}$ | $6.552 \cdot 10^{-7}$ | 0 |
| cHudIm | $\textcolor{blue}{1.681 \cdot 10^{-37}}$ | $\textcolor{blue}{-4.089 \cdot 10^{-38}}$ | $\textcolor{blue}{1.243}$ | | $1.338 \cdot 10^{-25}$ | $1.338 \cdot 10^{-25}$ | $-2.691 \cdot 10^{-6}$ |
| cHudRe | $3.298 \cdot 10^{-21}$ | $3.298 \cdot 10^{-21}$ | $-1.334 \cdot 10^{-6}$ | | $1.767 \cdot 10^{-24}$ | $1.767 \cdot 10^{-24}$ | $-2.66 \cdot 10^{-6}$ |
| cQj31 | 0.007809 | 0.007809 | 0 | | 0.0364 | 0.0364 | 0 |
| cQj38 | $\textcolor{red}{1.589 \cdot 10^{-10}}$ | $\textcolor{red}{6.744 \cdot 10^{-19}}$ | $\textcolor{red}{1}$ | | 0.02468 | 0.02468 | 0 |
| cQtjd1Im | $6.058 \cdot 10^{-14}$ | $6.058 \cdot 10^{-14}$ | $-5.943 \cdot 10^{-7}$ | | $1.799 \cdot 10^{-10}$ | $1.799 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| cQtjd1Re | $-3.56 \cdot 10^{-10}$ | $-3.56 \cdot 10^{-10}$ | $-5.899 \cdot 10^{-7}$ | | $1.799 \cdot 10^{-10}$ | $1.799 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| cQtjd8Im | $\textcolor{blue}{3.841 \cdot 10^{-29}}$ | $\textcolor{blue}{-8.975 \cdot 10^{-29}}$ | $\textcolor{blue}{3.336}$ | | $3.997 \cdot 10^{-11}$ | $3.997 \cdot 10^{-11}$ | $-1.176 \cdot 10^{-6}$ |
| cQtjd8Re | $\textcolor{blue}{-5.039 \cdot 10^{-27}}$ | $\textcolor{blue}{2.088 \cdot 10^{-38}}$ | $\textcolor{blue}{1}$ | | $3.997 \cdot 10^{-11}$ | $3.997 \cdot 10^{-11}$ | $-1.176 \cdot 10^{-6}$ |
| cQujb1Im | $-6.61 \cdot 10^{-17}$ | $-6.61 \cdot 10^{-17}$ | $-7.261 \cdot 10^{-7}$ | | $1.485 \cdot 10^{-11}$ | $1.485 \cdot 10^{-11}$ | $-1.414 \cdot 10^{-6}$ |
| cQujb1Re | $-5.952 \cdot 10^{-13}$ | $-5.952 \cdot 10^{-13}$ | $-7.225 \cdot 10^{-7}$ | | $3.536 \cdot 10^{-11}$ | $3.536 \cdot 10^{-11}$ | $-1.442 \cdot 10^{-6}$ |
| cQujb8Im | $-2.024 \cdot 10^{-17}$ | $-2.024 \cdot 10^{-17}$ | $-7.41 \cdot 10^{-7}$ | | $1.222 \cdot 10^{-13}$ | $1.222 \cdot 10^{-13}$ | $-1.391 \cdot 10^{-6}$ |
| cQujb8Re | $-1.2 \cdot 10^{-13}$ | $-1.2 \cdot 10^{-13}$ | $-7.5 \cdot 10^{-7}$ | | $1.222 \cdot 10^{-13}$ | $1.222 \cdot 10^{-13}$ | $-1.391 \cdot 10^{-6}$ |
| cbWIm | $-4.287 \cdot 10^{-19}$ | $-4.287 \cdot 10^{-19}$ | 0 | | 0.01094 | 0.01094 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cbWRe | $-3.649 \cdot 10^{-5}$ | $-3.649 \cdot 10^{-5}$ | $0$ | $0.004372$ | $0.004372$ | $0$ |
| cdWIm | $8.824 \cdot 10^{-26}$ | $8.861 \cdot 10^{-26}$ | $-0.0042$ | $5.056 \cdot 10^{-12}$ | $5.056 \cdot 10^{-12}$ | $-1.167 \cdot 10^{-6}$ |
| cdWRe | $9.687 \cdot 10^{-15}$ | $9.687 \cdot 10^{-15}$ | $-5.884 \cdot 10^{-7}$ | $3.772 \cdot 10^{-12}$ | $3.772 \cdot 10^{-12}$ | $-1.166 \cdot 10^{-6}$ |
| cjQbd1Im | $-1.003 \cdot 10^{-15}$ | $-1.003 \cdot 10^{-15}$ | $-5.981 \cdot 10^{-7}$ | $7.195 \cdot 10^{-10}$ | $7.195 \cdot 10^{-10}$ | $-1.181 \cdot 10^{-6}$ |
| cjQbd1Re | $5.955 \cdot 10^{-12}$ | $5.955 \cdot 10^{-12}$ | $-5.878 \cdot 10^{-7}$ | $7.195 \cdot 10^{-10}$ | $7.195 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| cjQbd8Im | $-1.34 \cdot 10^{-15}$ | $-1.34 \cdot 10^{-15}$ | $-5.972 \cdot 10^{-7}$ | $1.599 \cdot 10^{-10}$ | $1.599 \cdot 10^{-10}$ | $-1.126 \cdot 10^{-6}$ |
| cjQbd8Re | $7.864 \cdot 10^{-12}$ | $7.864 \cdot 10^{-12}$ | $-5.977 \cdot 10^{-7}$ | $1.599 \cdot 10^{-10}$ | $1.599 \cdot 10^{-10}$ | $-1.188 \cdot 10^{-6}$ |
| cjQtu1Im | $8.542 \cdot 10^{-15}$ | $8.542 \cdot 10^{-15}$ | $-7.258 \cdot 10^{-7}$ | $1.539 \cdot 10^{-10}$ | $1.539 \cdot 10^{-10}$ | $-1.429 \cdot 10^{-6}$ |
| cjQtu1Re | $5.062 \cdot 10^{-11}$ | $5.062 \cdot 10^{-11}$ | $-7.309 \cdot 10^{-7}$ | $1.539 \cdot 10^{-10}$ | $1.539 \cdot 10^{-10}$ | $-1.494 \cdot 10^{-6}$ |
| cjQtu8Im | $1.15 \cdot 10^{-14}$ | $1.15 \cdot 10^{-14}$ | $-6.954 \cdot 10^{-7}$ | $3.42 \cdot 10^{-11}$ | $3.42 \cdot 10^{-11}$ | $-1.433 \cdot 10^{-6}$ |
| cjQtu8Re | $6.748 \cdot 10^{-11}$ | $6.748 \cdot 10^{-11}$ | $-7.262 \cdot 10^{-7}$ | $3.42 \cdot 10^{-11}$ | $3.42 \cdot 10^{-11}$ | $-1.462 \cdot 10^{-6}$ |
| cjtQd1Im | $5.678 \cdot 10^{-15}$ | $5.678 \cdot 10^{-15}$ | $-5.812 \cdot 10^{-7}$ | $1.433 \cdot 10^{-11}$ | $1.433 \cdot 10^{-11}$ | $-1.186 \cdot 10^{-6}$ |
| cjtQd1Re | $-1.1 \cdot 10^{-10}$ | $-1.1 \cdot 10^{-10}$ | $-6.364 \cdot 10^{-7}$ | $1.518 \cdot 10^{-10}$ | $1.518 \cdot 10^{-10}$ | $-1.186 \cdot 10^{-6}$ |
| cjtQd8Im | $8.047 \cdot 10^{-15}$ | $8.047 \cdot 10^{-15}$ | $-5.841 \cdot 10^{-7}$ | $3.596 \cdot 10^{-12}$ | $3.596 \cdot 10^{-12}$ | $-1.168 \cdot 10^{-6}$ |
| cjtQd8Re | $-9.907 \cdot 10^{-11}$ | $-9.907 \cdot 10^{-11}$ | $-5.854 \cdot 10^{-7}$ | $1.542 \cdot 10^{-11}$ | $1.542 \cdot 10^{-11}$ | $-1.167 \cdot 10^{-6}$ |
| cjuQb1Im | $-3.197 \cdot 10^{-16}$ | $-3.197 \cdot 10^{-16}$ | $-7.195 \cdot 10^{-7}$ | $3.848 \cdot 10^{-11}$ | $3.848 \cdot 10^{-11}$ | $-1.455 \cdot 10^{-6}$ |
| cjuQb1Re | $-1.902 \cdot 10^{-12}$ | $-1.902 \cdot 10^{-12}$ | $-7.36 \cdot 10^{-7}$ | $3.848 \cdot 10^{-11}$ | $3.848 \cdot 10^{-11}$ | $-1.429 \cdot 10^{-6}$ |
| cjuQb8Im | $-2.031 \cdot 10^{-29}$ | $-8.296 \cdot 10^{-30}$ | $0.5915$ | $8.551 \cdot 10^{-12}$ | $8.551 \cdot 10^{-12}$ | $-1.45 \cdot 10^{-6}$ |
| cjuQb8Re | $-2.666 \cdot 10^{-29}$ | $-2.314 \cdot 10^{-29}$ | $0.1319$ | $8.551 \cdot 10^{-12}$ | $8.551 \cdot 10^{-12}$ | $-1.45 \cdot 10^{-6}$ |
| cll1221 | $1.51 \cdot 10^{-5}$ | $1.51 \cdot 10^{-5}$ | $0$ | $2.289 \cdot 10^{-7}$ | $2.289 \cdot 10^{-7}$ | $0$ |
| ctWIm | $7.012 \cdot 10^{-20}$ | $7.012 \cdot 10^{-20}$ | $0$ | $0.01119$ | $0.01119$ | $0$ |
| ctWRe | $-0.004815$ | $-0.004815$ | $0$ | $0.01077$ | $0.01077$ | $0$ |
| cuWIm | $-1.463 \cdot 10^{-26}$ | $-1.454 \cdot 10^{-26}$ | $0.006133$ | $1.094 \cdot 10^{-12}$ | $1.094 \cdot 10^{-12}$ | $-1.371 \cdot 10^{-6}$ |
| cutbd1Im | $8.818 \cdot 10^{-27}$ | $8.818 \cdot 10^{-27}$ | $-1.338 \cdot 10^{-6}$ | $9.591 \cdot 10^{-21}$ | $9.591 \cdot 10^{-21}$ | $-2.669 \cdot 10^{-6}$ |
| cutbd1Re | $-5.227 \cdot 10^{-23}$ | $-5.227 \cdot 10^{-23}$ | $-1.339 \cdot 10^{-6}$ | $3.218 \cdot 10^{-20}$ | $3.218 \cdot 10^{-20}$ | $-2.673 \cdot 10^{-6}$ |
| cutbd8Im | $1.176 \cdot 10^{-26}$ | $1.176 \cdot 10^{-26}$ | $-1.276 \cdot 10^{-6}$ | $2.239 \cdot 10^{-22}$ | $2.239 \cdot 10^{-22}$ | $-2.68 \cdot 10^{-6}$ |
| cutbd8Re | $-6.97 \cdot 10^{-23}$ | $-6.97 \cdot 10^{-23}$ | $-1.32 \cdot 10^{-6}$ | $2.911 \cdot 10^{-21}$ | $2.911 \cdot 10^{-21}$ | $-2.646 \cdot 10^{-6}$ |
| sm | $0$ | $0$ | $0$ | $0.01576$ | $0.01576$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| cHB | $-0.06812$ | $-0.06812$ | 0 | 0.156 | 0.156 | 0 |
| cHBtil | $8.234 \cdot 10^{-16}$ | $8.234 \cdot 10^{-16}$ | 0 | 0.07367 | 0.07367 | 0 |
| cHDD | $-0.02588$ | $-0.02588$ | 0 | 0.0004878 | 0.0004878 | 0 |
| cHW | 0.04747 | 0.04747 | 0 | 0.06296 | 0.06296 | 0 |
| cHWB | 0.06142 | 0.06142 | 0 | 0.4787 | 0.4787 | 0 |
| cHWBtil | $2.64 \cdot 10^{-16}$ | $2.64 \cdot 10^{-16}$ | 0 | 0.4716 | 0.4716 | 0 |
| cHWtil | $-2.977 \cdot 10^{-17}$ | $-2.977 \cdot 10^{-17}$ | 0 | 0.106 | 0.106 | 0 |
| cHl311 | $-0.04476$ | $-0.04476$ | 0 | 0.001357 | 0.001357 | 0 |
| cHl322 | $-0.03006$ | $-0.03006$ | 0 | 0.0009111 | 0.0009111 | 0 |
| cW | 0.003498 | 0.003498 | 0 | 1.913 | 1.913 | 0 |
| cWtil | <span style="color:red">$2.081 \cdot 10^{-15}$</span> | <span style="color:red">$3.203 \cdot 10^{-15}$</span> | <span style="color:red">$-0.5396$</span> | 3.831 | 3.831 | 0 |
| cll1221 | 0.0161 | 0.0161 | 0 | 0.000244 | 0.000244 | 0 |
| sm | 0 | 0 | 0 | 0.1973 | 0.1973 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| cHDD | $-0.001552$ | $-0.001552$ | 0 | $9.644 \cdot 10^{-5}$ | $9.644 \cdot 10^{-5}$ | 0 |
| cHWB | $-0.009911$ | $-0.009911$ | 0 | 0.0008985 | 0.0008985 | 0 |
| cHe22 | $-0.0008$ | $-0.0008$ | 0 | $1.233 \cdot 10^{-5}$ | $1.233 \cdot 10^{-5}$ | 0 |
| cHe33 | 0.0004132 | 0.0004132 | 0 | $1.66 \cdot 10^{-5}$ | $1.66 \cdot 10^{-5}$ | 0 |
| cHl122 | $-0.0003452$ | $-0.0003452$ | 0 | $1.133 \cdot 10^{-5}$ | $1.133 \cdot 10^{-5}$ | 0 |
| cHl133 | $-0.000157$ | $-0.000157$ | 0 | $9.069 \cdot 10^{-6}$ | $9.069 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.001651$ | $-0.001651$ | 0 | $5.005 \cdot 10^{-5}$ | $5.005 \cdot 10^{-5}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| cHl322 | $-0.002553$ | $-0.002553$ | 0 | $6.203 \cdot 10^{-5}$ | $6.203 \cdot 10^{-5}$ | 0 |
| ceBIm22 | $1.989 \cdot 10^{-21}$ | $1.989 \cdot 10^{-21}$ | 0 | $0.004184$ | $0.004184$ | 0 |
| ceBIm33 | $5.51 \cdot 10^{-21}$ | $5.51 \cdot 10^{-21}$ | 0 | $0.00762$ | $0.00762$ | 0 |
| ceBRe22 | $5.258 \cdot 10^{-6}$ | $5.258 \cdot 10^{-6}$ | 0 | $0.003621$ | $0.003621$ | 0 |
| ceBRe33 | $0.0001492$ | $0.0001492$ | 0 | $0.00565$ | $0.00565$ | 0 |
| ceHIm22 | $7.283 \cdot 10^{-26}$ | $7.283 \cdot 10^{-26}$ | 0 | $9.878 \cdot 10^{-8}$ | $9.878 \cdot 10^{-8}$ | 0 |
| ceHIm33 | $4.855 \cdot 10^{-28}$ | $4.855 \cdot 10^{-28}$ | 0 | $3.493 \cdot 10^{-10}$ | $3.493 \cdot 10^{-10}$ | 0 |
| ceHRe22 | $-1.957 \cdot 10^{-9}$ | $-1.957 \cdot 10^{-9}$ | 0 | $9.878 \cdot 10^{-8}$ | $9.878 \cdot 10^{-8}$ | 0 |
| ceHRe33 | $-1.163 \cdot 10^{-10}$ | $-1.163 \cdot 10^{-10}$ | 0 | $3.492 \cdot 10^{-10}$ | $3.492 \cdot 10^{-10}$ | 0 |
| ceWIm22 | $7.611 \cdot 10^{-22}$ | $7.611 \cdot 10^{-22}$ | 0 | $0.005072$ | $0.005072$ | 0 |
| ceWIm33 | $1.441 \cdot 10^{-21}$ | $1.441 \cdot 10^{-21}$ | 0 | $0.006229$ | $0.006229$ | 0 |
| ceWRe22 | $-3.283 \cdot 10^{-6}$ | $-3.283 \cdot 10^{-6}$ | 0 | $0.002282$ | $0.002282$ | 0 |
| ceWRe33 | $-5.043 \cdot 10^{-5}$ | $-5.043 \cdot 10^{-5}$ | 0 | $0.0005002$ | $0.0005002$ | 0 |
| cee2233 | $0.03998$ | $0.03998$ | 0 | $0.1632$ | $0.1632$ | 0 |
| cle2332 | $1.241 \cdot 10^{-5}$ | $1.241 \cdot 10^{-5}$ | 0 | $2$ | $2$ | 0 |
| cle3322 | $0.05422$ | $0.05422$ | 0 | $0.4455$ | $0.4455$ | 0 |
| cll1221 | $0.0004394$ | $0.0004394$ | 0 | $6.659 \cdot 10^{-6}$ | $6.659 \cdot 10^{-6}$ | 0 |
| cll2233 | $0.04268$ | $0.04268$ | 0 | $0.1552$ | $0.1552$ | 0 |
| cll2332 | $0.01689$ | $0.01689$ | 0 | $0.06142$ | $0.06142$ | 0 |
| sm | $0$ | $0$ | 0 | $0.02493$ | $0.02493$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| cHDD | $-1.171 \cdot 10^{-5}$ | $-1.171 \cdot 10^{-5}$ | 0 | $1.775 \cdot 10^{-7}$ | $1.775 \cdot 10^{-7}$ | 0 |
| cHl133 | $-0.02255$ | $-0.02255$ | 0 | $0.001367$ | $0.001367$ | 0 |
| cHl311 | $-6.407 \cdot 10^{-7}$ | $-6.407 \cdot 10^{-7}$ | 0 | $1.942 \cdot 10^{-8}$ | $1.942 \cdot 10^{-8}$ | 0 |
| cHl322 | $-0.0001266$ | $-0.0001266$ | 0 | $3.836 \cdot 10^{-6}$ | $3.836 \cdot 10^{-6}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cll1221 | $3.047 \cdot 10^{-6}$ | $3.047 \cdot 10^{-6}$ | 0 | $4.618 \cdot 10^{-8}$ | $4.618 \cdot 10^{-8}$ | 0 |
| cll3333 | $-1.843$ | $-1.843$ | 0 | 9.127 | 9.127 | 0 |
| sm | 0 | 0 | 0 | 0.04074 | 0.04074 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-0.0001433$ | $-0.0001433$ | 0 | $2.171 \cdot 10^{-6}$ | $2.171 \cdot 10^{-6}$ | 0 |
| cHl111 | $-0.0001112$ | $-0.0001112$ | 0 | $3.37 \cdot 10^{-6}$ | $3.37 \cdot 10^{-6}$ | 0 |
| cHl122 | $-0.001227$ | $-0.001227$ | 0 | $3.72 \cdot 10^{-5}$ | $3.72 \cdot 10^{-5}$ | 0 |
| cHl311 | $8.245 \cdot 10^{-22}$ | $8.245 \cdot 10^{-22}$ | 0 | $2.939 \cdot 10^{-39}$ | $2.939 \cdot 10^{-39}$ | 0 |
| cHl322 | $-1.429 \cdot 10^{-19}$ | $-1.429 \cdot 10^{-19}$ | 0 | $2.941 \cdot 10^{-37}$ | $2.941 \cdot 10^{-37}$ | 0 |
| cll1122 | 0.2638 | 0.2638 | 0 | 0.9535 | 0.9535 | 0 |
| cll1221 | 0.2441 | 0.2441 | 0 | 0.886 | 0.886 | 0 |
| sm | 0 | 0 | 0 | 0.01193 | 0.01193 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHB | $-3.892 \cdot 10^{-7}$ | $-3.892 \cdot 10^{-7}$ | 0 | $7.26 \cdot 10^{-6}$ | $7.26 \cdot 10^{-6}$ | 0 |
| cHBtil | $6.275 \cdot 10^{-21}$ | $6.275 \cdot 10^{-21}$ | 0 | $7.26 \cdot 10^{-6}$ | $7.26 \cdot 10^{-6}$ | 0 |
| cHDD | $-0.00205$ | $-0.00205$ | 0 | 0.0001084 | 0.0001084 | 0 |
| cHW | $-1.134 \cdot 10^{-7}$ | $-1.134 \cdot 10^{-7}$ | 0 | $5.97 \cdot 10^{-7}$ | $5.97 \cdot 10^{-7}$ | 0 |
| cHWB | $-3.803 \cdot 10^{-5}$ | $-3.803 \cdot 10^{-5}$ | 0 | $6.362 \cdot 10^{-6}$ | $6.362 \cdot 10^{-6}$ | 0 |
| cHWBtil | $5.942 \cdot 10^{-25}$ | $5.942 \cdot 10^{-25}$ | 0 | $2.082 \cdot 10^{-6}$ | $2.082 \cdot 10^{-6}$ | 0 |
| cHWtil | $1.797 \cdot 10^{-24}$ | $1.797 \cdot 10^{-24}$ | 0 | $5.97 \cdot 10^{-7}$ | $5.97 \cdot 10^{-7}$ | 0 |
| cHl311 | $-3.967 \cdot 10^{-5}$ | $-3.967 \cdot 10^{-5}$ | 0 | $1.203 \cdot 10^{-6}$ | $1.203 \cdot 10^{-6}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cHl322 | $-1.233 \cdot 10^{-5}$ | $-1.233 \cdot 10^{-5}$ | 0 | $3.738 \cdot 10^{-7}$ | $3.738 \cdot 10^{-7}$ | 0 |
| cbBIm | $-1.004 \cdot 10^{-23}$ | $-4.289 \cdot 10^{-23}$ | $-3.273$ | 0.00199 | 0.00199 | 0 |
| cbBRe | $9.225 \cdot 10^{-6}$ | $9.225 \cdot 10^{-6}$ | 0 | 0.00199 | 0.00199 | 0 |
| cbWIm | $-6.013 \cdot 10^{-23}$ | $-6.013 \cdot 10^{-23}$ | 0 | 0.0005705 | 0.0005705 | 0 |
| cbWRe | $-4.012 \cdot 10^{-6}$ | $-4.012 \cdot 10^{-6}$ | 0 | 0.0005706 | 0.0005706 | 0 |
| cll1221 | $4.589 \cdot 10^{-6}$ | $4.589 \cdot 10^{-6}$ | 0 | $6.955 \cdot 10^{-8}$ | $6.955 \cdot 10^{-8}$ | 0 |
| sm | 0 | 0 | 0 | $7.482 \cdot 10^{-5}$ | $7.482 \cdot 10^{-5}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| cHDD | $-3.345 \cdot 10^{-5}$ | $-3.345 \cdot 10^{-5}$ | 0 | $4.624 \cdot 10^{-6}$ | $4.624 \cdot 10^{-6}$ | 0 |
| cHQ1 | 0.0001829 | 0.0001829 | 0 | $4.557 \cdot 10^{-6}$ | $4.557 \cdot 10^{-6}$ | 0 |
| cHQ3 | $8.356 \cdot 10^{-5}$ | $8.356 \cdot 10^{-5}$ | 0 | $2.921 \cdot 10^{-6}$ | $2.921 \cdot 10^{-6}$ | 0 |
| cHWB | $-5.227 \cdot 10^{-5}$ | $-5.227 \cdot 10^{-5}$ | 0 | $1.437 \cdot 10^{-5}$ | $1.437 \cdot 10^{-5}$ | 0 |
| cHbq | $-8.574 \cdot 10^{-5}$ | $-8.574 \cdot 10^{-5}$ | 0 | $3.988 \cdot 10^{-6}$ | $3.988 \cdot 10^{-6}$ | 0 |
| cHe22 | $-2.701 \cdot 10^{-5}$ | $-2.701 \cdot 10^{-5}$ | 0 | $2.526 \cdot 10^{-6}$ | $2.526 \cdot 10^{-6}$ | 0 |
| cHl122 | 0.0001851 | 0.0001851 | 0 | $6.963 \cdot 10^{-6}$ | $6.963 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.0003162$ | $-0.0003162$ | 0 | $9.585 \cdot 10^{-6}$ | $9.585 \cdot 10^{-6}$ | 0 |
| cHl322 | $-2.695 \cdot 10^{-5}$ | $-2.695 \cdot 10^{-5}$ | 0 | $1.583 \cdot 10^{-6}$ | $1.583 \cdot 10^{-6}$ | 0 |
| cQe22 | $-8.793 \cdot 10^{-5}$ | $-8.793 \cdot 10^{-5}$ | 0 | 0.002124 | 0.002124 | 0 |
| cQl122 | 0.02569 | 0.02569 | 0 | 0.1325 | 0.1325 | 0 |
| cQl322 | 0.01804 | 0.01804 | 0 | 0.09302 | 0.09302 | 0 |
| cbBIm | $-1.037 \cdot 10^{-22}$ | $-1.037 \cdot 10^{-22}$ | 0 | 0.002981 | 0.002981 | 0 |
| cbBRe | $4.522 \cdot 10^{-5}$ | $4.522 \cdot 10^{-5}$ | 0 | 0.00216 | 0.00216 | 0 |
| cbHIm | $4.174 \cdot 10^{-27}$ | $4.174 \cdot 10^{-27}$ | 0 | $1.164 \cdot 10^{-10}$ | $1.164 \cdot 10^{-10}$ | 0 |
| cbHRe | $-9.272 \cdot 10^{-11}$ | $-9.272 \cdot 10^{-11}$ | 0 | $1.164 \cdot 10^{-10}$ | $1.164 \cdot 10^{-10}$ | 0 |
| cbWIm | $-1.396 \cdot 10^{-22}$ | $-1.396 \cdot 10^{-22}$ | 0 | 0.001965 | 0.001965 | 0 |

| | mod1 | mod2 | 1−mod2/mod1 | mod1 | mod2 | 1−mod2/mod1 |
|---|---|---|---|---|---|---|
| cbWRe | $-3.136 \cdot 10^{-5}$ | $-3.136 \cdot 10^{-5}$ | 0 | 0.002045 | 0.002045 | 0 |
| cbe22 | 0.007596 | 0.007596 | 0 | 0.09302 | 0.09302 | 0 |
| cbl22 | 0.003638 | 0.003638 | 0 | 0.08965 | 0.08965 | 0 |
| ceBIm22 | $-1.869 \cdot 10^{-23}$ | $-1.869 \cdot 10^{-23}$ | 0 | 0.000346 | 0.000346 | 0 |
| ceBRe22 | $3.301 \cdot 10^{-8}$ | $3.301 \cdot 10^{-8}$ | 0 | 0.0003211 | 0.0003211 | 0 |
| ceHIm22 | $-1.635 \cdot 10^{-25}$ | $-1.635 \cdot 10^{-25}$ | 0 | $1.822 \cdot 10^{-7}$ | $1.822 \cdot 10^{-7}$ | 0 |
| ceHRe22 | $-3.662 \cdot 10^{-9}$ | $-3.662 \cdot 10^{-9}$ | 0 | $1.822 \cdot 10^{-7}$ | $1.822 \cdot 10^{-7}$ | 0 |
| ceWIm22 | $-2.333 \cdot 10^{-23}$ | $-2.333 \cdot 10^{-23}$ | 0 | 0.001715 | 0.001715 | 0 |
| ceWRe22 | $-1.413 \cdot 10^{-6}$ | $-1.413 \cdot 10^{-6}$ | 0 | 0.0006418 | 0.0006418 | 0 |
| clebQIm22 | $7.087 \cdot 10^{-23}$ | $7.087 \cdot 10^{-23}$ | 0 | 0.1667 | 0.1667 | 0 |
| clebQRe22 | $-4.912 \cdot 10^{-6}$ | $-4.912 \cdot 10^{-6}$ | 0 | 0.1667 | 0.1667 | 0 |
| cll1221 | $3.859 \cdot 10^{-5}$ | $3.859 \cdot 10^{-5}$ | 0 | $5.849 \cdot 10^{-7}$ | $5.849 \cdot 10^{-7}$ | 0 |
| sm | 0 | 0 | 0 | 0.001016 | 0.001016 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1−mod2/mod1 | mod1 | mod2 | 1−mod2/mod1 |
| cHDD | $-2.928 \cdot 10^{-5}$ | $-2.928 \cdot 10^{-5}$ | 0 | $1.219 \cdot 10^{-6}$ | $1.219 \cdot 10^{-6}$ | 0 |
| cHQ1 | 0.0002766 | 0.0002766 | 0 | $9.846 \cdot 10^{-6}$ | $9.846 \cdot 10^{-6}$ | 0 |
| cHQ3 | 0.0002177 | 0.0002177 | 0 | $7.749 \cdot 10^{-6}$ | $7.749 \cdot 10^{-6}$ | 0 |
| cHWB | $9.092 \cdot 10^{-5}$ | $9.092 \cdot 10^{-5}$ | 0 | $1.07 \cdot 10^{-6}$ | $1.07 \cdot 10^{-6}$ | 0 |
| cHbq | $-1.202 \cdot 10^{-5}$ | $-1.202 \cdot 10^{-5}$ | 0 | $2.455 \cdot 10^{-6}$ | $2.455 \cdot 10^{-6}$ | 0 |
| cHl111 | $-5.283 \cdot 10^{-5}$ | $-5.283 \cdot 10^{-5}$ | 0 | $1.601 \cdot 10^{-6}$ | $1.601 \cdot 10^{-6}$ | 0 |
| cHl311 | $7.843 \cdot 10^{-22}$ | $7.937 \cdot 10^{-22}$ | $-0.01187$ | $4.191 \cdot 10^{-39}$ | $4.287 \cdot 10^{-39}$ | $-0.02312$ |
| cHl322 | $-0.0001303$ | $-0.0001303$ | 0 | $3.95 \cdot 10^{-6}$ | $3.95 \cdot 10^{-6}$ | 0 |
| cQl111 | $-1.647 \cdot 10^{-5}$ | $-1.647 \cdot 10^{-5}$ | 0 | $7.096 \cdot 10^{-5}$ | $7.096 \cdot 10^{-5}$ | 0 |
| cQl311 | 0.0001869 | 0.0001869 | 0 | 0.0007945 | 0.0007945 | 0 |
| cbBIm | $2.143 \cdot 10^{-21}$ | $2.143 \cdot 10^{-21}$ | 0 | $5.091 \cdot 10^{-5}$ | $5.091 \cdot 10^{-5}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cbBRe | $-2.364 \cdot 10^{-5}$ | $-2.364 \cdot 10^{-5}$ | 0 | 0.000573 | 0.000573 | 0 |
| cbWIm | $6.219 \cdot 10^{-20}$ | $6.219 \cdot 10^{-20}$ | 0 | 0.002148 | 0.002148 | 0 |
| cbWRe | $-2.781 \cdot 10^{-5}$ | $-2.781 \cdot 10^{-5}$ | 0 | 0.002179 | 0.002179 | 0 |
| cbl11 | 0.004095 | 0.004095 | 0 | 0.09966 | 0.09966 | 0 |
| cll1221 | $6.259 \cdot 10^{-5}$ | $6.259 \cdot 10^{-5}$ | 0 | $9.487 \cdot 10^{-7}$ | $9.487 \cdot 10^{-7}$ | 0 |
| sm | 0 | 0 | 0 | 0.001775 | 0.001775 | 0 |

## 1.53 $\quad b\bar{b} \to b\bar{b}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-3.683 \cdot 10^{-6}$ | $-3.683 \cdot 10^{-6}$ | 0 | $3.436 \cdot 10^{-6}$ | $3.436 \cdot 10^{-6}$ | 0 |
| cHQ1 | $-0.002244$ | $-0.002244$ | 0 | $2.573 \cdot 10^{-5}$ | $2.573 \cdot 10^{-5}$ | 0 |
| cHQ3 | $-0.02018$ | $-0.02018$ | 0 | 0.0002647 | 0.0002647 | 0 |
| cHWB | 0.009449 | 0.009449 | 0 | $8.671 \cdot 10^{-5}$ | $8.671 \cdot 10^{-5}$ | 0 |
| cHbq | $1.871 \cdot 10^{-5}$ | $1.871 \cdot 10^{-5}$ | 0 | 0.0002213 | 0.0002213 | 0 |
| cHl311 | 0.0001023 | 0.0001023 | 0 | $8.111 \cdot 10^{-7}$ | $8.111 \cdot 10^{-7}$ | 0 |
| cHl322 | $8.466 \cdot 10^{-5}$ | $8.466 \cdot 10^{-5}$ | 0 | $7.512 \cdot 10^{-7}$ | $7.512 \cdot 10^{-7}$ | 0 |
| cQQ1 | $-1.773$ | $-1.773$ | 0 | 3.885 | 3.885 | 0 |
| cQQ8 | $-0.03429$ | $-0.03429$ | 0 | 0.09617 | 0.09617 | $-2.08 \cdot 10^{-8}$ |
| cQb1 | 0.01726 | 0.01726 | 0 | 3.204 | 3.204 | 0 |
| cQb8 | $-88.97$ | $-88.97$ | 0 | 0.4445 | 0.4445 | 0 |
| cbBIm | $7.597 \cdot 10^{-19}$ | $7.603 \cdot 10^{-19}$ | $-0.0007433$ | 0.006707 | 0.006707 | 0 |
| cbBRe | 0.0004022 | 0.0004022 | 0 | 0.005121 | 0.005121 | 0 |
| cbGIm | $5.933 \cdot 10^{-21}$ | $5.933 \cdot 10^{-21}$ | 0 | 0.01243 | 0.01243 | 0 |
| cbGRe | $-0.01547$ | $-0.01547$ | 0 | 0.01389 | 0.01389 | 0 |
| cbHIm | $-5.255 \cdot 10^{-20}$ | $-5.254 \cdot 10^{-20}$ | 0.0002239 | $2.826 \cdot 10^{-6}$ | $2.826 \cdot 10^{-6}$ | 0 |
| cbHRe | 0.003825 | 0.003825 | 0 | $4.943 \cdot 10^{-6}$ | $4.943 \cdot 10^{-6}$ | 0 |
| cbWIm | $-5.499 \cdot 10^{-18}$ | $-5.463 \cdot 10^{-18}$ | 0.006539 | 0.01432 | 0.01432 | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| cbWRe | 0.2655 | 0.2655 | 0 | 1.69 | 1.69 | 0 |
| cbb | $8.568 \cdot 10^{-5}$ | $8.568 \cdot 10^{-5}$ | 0 | 0.01127 | 0.01127 | 0 |
| cll1221 | 0.9458 | 0.9458 | 0 | 0.02274 | 0.02274 | 0 |
| sm | 0 | 0 | 0 | 10.94 | 10.94 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-0.0001274$ | $-0.0001274$ | 0 | $3.071 \cdot 10^{-6}$ | $3.071 \cdot 10^{-6}$ | 0 |
| cHQ1 | 0.00121 | 0.00121 | 0 | $3.899 \cdot 10^{-5}$ | $3.899 \cdot 10^{-5}$ | 0 |
| cHQ3 | 0.000139 | 0.000139 | 0 | $4.984 \cdot 10^{-6}$ | $4.984 \cdot 10^{-6}$ | 0 |
| cHWB | $2.027 \cdot 10^{-5}$ | $2.027 \cdot 10^{-5}$ | 0 | $1.103 \cdot 10^{-6}$ | $1.103 \cdot 10^{-6}$ | 0 |
| cHbq | $-2.569 \cdot 10^{-5}$ | $-2.569 \cdot 10^{-5}$ | 0 | $5.745 \cdot 10^{-6}$ | $5.745 \cdot 10^{-6}$ | 0 |
| cHd | $-7.933 \cdot 10^{-5}$ | $-7.933 \cdot 10^{-5}$ | 0 | $4.063 \cdot 10^{-5}$ | $4.063 \cdot 10^{-5}$ | 0 |
| cHj1 | 0.000139 | 0.000139 | 0 | $4.983 \cdot 10^{-6}$ | $4.983 \cdot 10^{-6}$ | 0 |
| cHj3 | 0.0003525 | 0.0003525 | 0 | $1.163 \cdot 10^{-5}$ | $1.163 \cdot 10^{-5}$ | 0 |
| cHl311 | $-0.001133$ | $-0.001133$ | 0 | $3.433 \cdot 10^{-5}$ | $3.433 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.0001979$ | $-0.0001979$ | 0 | $5.998 \cdot 10^{-6}$ | $5.998 \cdot 10^{-6}$ | 0 |
| cQd8 | 0.02044 | 0.02044 | 0 | 0.006895 | 0.006895 | 0 |
| cQj11 | 0.04004 | 0.04004 | 0 | 0.1806 | 0.1806 | 0 |
| cQj18 | 0.5525 | 0.5525 | 0 | 0.1865 | 0.1865 | 0 |
| cQj31 | $7.918 \cdot 10^{-5}$ | $7.918 \cdot 10^{-5}$ | 0 | 0.0003583 | 0.0003583 | 0 |
| cQj38 | 0.1447 | 0.1447 | 0 | 0.04882 | 0.04882 | 0 |
| cbBIm | $-8.636 \cdot 10^{-21}$ | $-8.636 \cdot 10^{-21}$ | 0 | 0.0009978 | 0.0009978 | 0 |
| cbBRe | $-2.578 \cdot 10^{-5}$ | $-2.578 \cdot 10^{-5}$ | 0 | 0.0004578 | 0.0004578 | 0 |
| cbGIm | $-1.838 \cdot 10^{-25}$ | $-1.838 \cdot 10^{-25}$ | 0 | 0.03667 | 0.03667 | 0 |
| cbGRe | $-0.004666$ | $-0.004666$ | 0 | 0.0144 | 0.0144 | 0 |
| cbHIm | $-1.258 \cdot 10^{-29}$ | $-1.258 \cdot 10^{-29}$ | 0 | $6.823 \cdot 10^{-13}$ | $6.823 \cdot 10^{-13}$ | 0 |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cbHRe | $-5.43 \cdot 10^{-13}$ | $-5.43 \cdot 10^{-13}$ | 0 | $6.822 \cdot 10^{-13}$ | $6.822 \cdot 10^{-13}$ | 0 |
| cbWIm | $-6.213 \cdot 10^{-19}$ | $-6.213 \cdot 10^{-19}$ | $2.366 \cdot 10^{-6}$ | 0.006407 | 0.006407 | 0 |
| cbWRe | $-1.093 \cdot 10^{-5}$ | $-1.093 \cdot 10^{-5}$ | 0 | 0.002513 | 0.002513 | 0 |
| cbd1 | 0.004305 | 0.004305 | 0 | 0.1582 | 0.1582 | 0 |
| cbd8 | 0.0076 | 0.0076 | 0 | 0.002561 | 0.002561 | 0 |
| cbj1 | $-9.401 \cdot 10^{-5}$ | $-9.401 \cdot 10^{-5}$ | 0 | 0.007054 | 0.007054 | 0 |
| cbj8 | 0.04669 | 0.04669 | 0 | 0.01575 | 0.01575 | 0 |
| cdBIm | $3.484 \cdot 10^{-29}$ | $-1.288 \cdot 10^{-29}$ | 1.37 | $6.132 \cdot 10^{-13}$ | $6.132 \cdot 10^{-13}$ | $-1.158 \cdot 10^{-6}$ |
| cdBRe | $-7.919 \cdot 10^{-13}$ | $-7.919 \cdot 10^{-13}$ | $-5.935 \cdot 10^{-7}$ | $2.702 \cdot 10^{-13}$ | $2.702 \cdot 10^{-13}$ | $-1.184 \cdot 10^{-6}$ |
| cdGIm | $-2.059 \cdot 10^{-27}$ | $-2.476 \cdot 10^{-27}$ | $-0.203$ | $1.036 \cdot 10^{-11}$ | $1.036 \cdot 10^{-11}$ | $-1.158 \cdot 10^{-6}$ |
| cdGRe | $-1.398 \cdot 10^{-10}$ | $-1.398 \cdot 10^{-10}$ | $-6.436 \cdot 10^{-7}$ | $2.678 \cdot 10^{-11}$ | $2.678 \cdot 10^{-11}$ | $-1.158 \cdot 10^{-6}$ |
| cdHIm | $1.918 \cdot 10^{-31}$ | $1.877 \cdot 10^{-31}$ | 0.02142 | $3.933 \cdot 10^{-16}$ | $3.933 \cdot 10^{-16}$ | $-1.17 \cdot 10^{-6}$ |
| cdHRe | $-1.304 \cdot 10^{-14}$ | $-1.304 \cdot 10^{-14}$ | $-6.137 \cdot 10^{-7}$ | $3.933 \cdot 10^{-16}$ | $3.933 \cdot 10^{-16}$ | $-1.17 \cdot 10^{-6}$ |
| cdWIm | $6.542 \cdot 10^{-29}$ | $8.204 \cdot 10^{-29}$ | $-0.2541$ | $4.697 \cdot 10^{-12}$ | $4.697 \cdot 10^{-12}$ | $-1.171 \cdot 10^{-6}$ |
| cdWRe | $-5.687 \cdot 10^{-12}$ | $-5.687 \cdot 10^{-12}$ | $-5.803 \cdot 10^{-7}$ | $1.701 \cdot 10^{-12}$ | $1.701 \cdot 10^{-12}$ | $-1.117 \cdot 10^{-6}$ |
| cjQbd1Im | $3.949 \cdot 10^{-28}$ | $-2.334 \cdot 10^{-28}$ | 1.591 | $1.439 \cdot 10^{-9}$ | $1.439 \cdot 10^{-9}$ | $-1.181 \cdot 10^{-6}$ |
| cjQbd1Re | $1.37 \cdot 10^{-11}$ | $1.37 \cdot 10^{-11}$ | $-5.839 \cdot 10^{-7}$ | $1.439 \cdot 10^{-9}$ | $1.439 \cdot 10^{-9}$ | $-1.181 \cdot 10^{-6}$ |
| cjQbd8Im | $1.118 \cdot 10^{-28}$ | $-3.278 \cdot 10^{-28}$ | 3.932 | $3.198 \cdot 10^{-10}$ | $3.198 \cdot 10^{-10}$ | $-1.157 \cdot 10^{-6}$ |
| cjQbd8Re | $1.58 \cdot 10^{-11}$ | $1.58 \cdot 10^{-11}$ | $-5.697 \cdot 10^{-7}$ | $3.198 \cdot 10^{-10}$ | $3.198 \cdot 10^{-10}$ | $-1.157 \cdot 10^{-6}$ |
| cll1221 | $1.336 \cdot 10^{-5}$ | $1.336 \cdot 10^{-5}$ | 0 | $2.025 \cdot 10^{-7}$ | $2.025 \cdot 10^{-7}$ | 0 |
| sm | 0 | 0 | 0 | 0.6204 | 0.6204 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHDD | 0.00048 | 0.00048 | 0 | $3.863 \cdot 10^{-6}$ | $3.863 \cdot 10^{-6}$ | 0 |
| cHQ1 | $-0.000623$ | $-0.000623$ | 0 | $3.297 \cdot 10^{-6}$ | $3.297 \cdot 10^{-6}$ | 0 |
| cHQ3 | 0.009176 | 0.009176 | 0 | 0.004458 | 0.004458 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cHWB | $-0.0004979$ | $-0.0004979$ | 0 | $1.618 \cdot 10^{-5}$ | $1.618 \cdot 10^{-5}$ | 0 |
| cHbq | $-0.0001138$ | $-0.0001138$ | 0 | $5.066 \cdot 10^{-6}$ | $5.066 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.00198$ | $-0.00198$ | 0 | $0.001057$ | $0.001057$ | 0 |
| cHl322 | $-0.1796$ | $-0.1796$ | 0 | $0.008597$ | $0.008597$ | 0 |
| cHt | $-0.001949$ | $-0.001949$ | 0 | $3.637 \cdot 10^{-5}$ | $3.637 \cdot 10^{-5}$ | 0 |
| cHtbIm | $1.208 \cdot 10^{-20}$ | $1.203 \cdot 10^{-20}$ | $0.004017$ | $0.00108$ | $0.00108$ | 0 |
| cHtbRe | $0.0005355$ | $0.0005355$ | 0 | $0.001098$ | $0.001098$ | 0 |
| cQQ1 | $-0.3358$ | $-0.3358$ | 0 | $1.119$ | $1.119$ | 0 |
| cQQ8 | $0.0916$ | $0.0916$ | 0 | $0.1229$ | $0.1229$ | 0 |
| cQb1 | $-0.003975$ | $-0.003975$ | 0 | $0.1698$ | $0.1698$ | 0 |
| cQb8 | $0.2102$ | $0.2102$ | 0 | $0.06435$ | $0.06435$ | 0 |
| cQt1 | $-0.1558$ | $-0.1558$ | 0 | $0.1698$ | $0.1698$ | 0 |
| cQt8 | $-0.09892$ | $-0.09892$ | 0 | $0.002677$ | $0.002677$ | 0 |
| cQtQb1Im | $1.867 \cdot 10^{-18}$ | $1.066 \cdot 10^{-18}$ | $0.4287$ | $0.8542$ | $0.8542$ | 0 |
| cQtQb1Re | $0.001038$ | $0.001038$ | 0 | $1.091$ | $1.091$ | 0 |
| cQtQb8Im | $-1.44 \cdot 10^{-18}$ | $-1.197 \cdot 10^{-18}$ | $0.1685$ | $0.1076$ | $0.1076$ | 0 |
| cQtQb8Re | $0.005479$ | $0.005479$ | 0 | $0.09513$ | $0.09513$ | 0 |
| cbBIm | $1.049 \cdot 10^{-20}$ | $1.049 \cdot 10^{-20}$ | $3.509 \cdot 10^{-5}$ | $0.003297$ | $0.003297$ | 0 |
| cbBRe | $0.0002247$ | $0.0002247$ | 0 | $0.003228$ | $0.003228$ | 0 |
| cbGIm | $-8.29 \cdot 10^{-20}$ | $-8.29 \cdot 10^{-20}$ | 0 | $0.0219$ | $0.0219$ | 0 |
| cbGRe | $-0.004799$ | $-0.004799$ | 0 | $0.01335$ | $0.01335$ | 0 |
| cbHIm | $-3.39 \cdot 10^{-20}$ | $-9.809 \cdot 10^{-21}$ | $0.7107$ | $0.0008223$ | $0.0008223$ | 0 |
| cbHRe | $-0.0004296$ | $-0.0004296$ | 0 | $0.0008222$ | $0.0008222$ | 0 |
| cbWIm | $-1.835 \cdot 10^{-18}$ | $-1.835 \cdot 10^{-18}$ | 0 | $0.949$ | $0.949$ | 0 |
| cbWRe | $-0.004634$ | $-0.004634$ | 0 | $0.08269$ | $0.08269$ | 0 |
| cll1221 | $0.003989$ | $0.003989$ | 0 | $0.0003063$ | $0.0003063$ | 0 |
| ctBIm | $1.281 \cdot 10^{-18}$ | $9.742 \cdot 10^{-19}$ | $0.2397$ | $0.0008621$ | $0.0008621$ | 0 |
| ctGIm | $1.554 \cdot 10^{-17}$ | $1.554 \cdot 10^{-17}$ | 0 | $0.03392$ | $0.03392$ | 0 |
| ctGRe | $-0.1196$ | $-0.1196$ | 0 | $0.03049$ | $0.03049$ | 0 |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| ctHIm | $-4.369 \cdot 10^{-22}$ | $-4.369 \cdot 10^{-22}$ | 0 | $5.466 \cdot 10^{-7}$ | $5.466 \cdot 10^{-7}$ | 0 |
| ctHRe | $-9.887 \cdot 10^{-6}$ | $-9.887 \cdot 10^{-6}$ | 0 | $4.813 \cdot 10^{-7}$ | $4.813 \cdot 10^{-7}$ | 0 |
| ctWIm | $-1.093 \cdot 10^{-17}$ | $-1.093 \cdot 10^{-17}$ | 0 | 0.02017 | 0.02017 | 0 |
| ctWRe | $-0.02853$ | $-0.02853$ | 0 | 0.0159 | 0.0159 | 0 |
| ctb1 | $-0.01921$ | $-0.01921$ | 0 | 0.3457 | 0.3457 | 0 |
| sm | 0 | 0 | 0 | 0.4167 | 0.4167 | 0 |

## 1.56 $b\bar{b} \to u\bar{u}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHDD | $-4.294 \cdot 10^{-5}$ | $-4.294 \cdot 10^{-5}$ | 0 | $3.333 \cdot 10^{-6}$ | $3.333 \cdot 10^{-6}$ | 0 |
| cHQ1 | 0.0003854 | 0.0003854 | 0 | $1.179 \cdot 10^{-5}$ | $1.179 \cdot 10^{-5}$ | 0 |
| cHQ3 | 0.0006247 | 0.0006247 | 0 | $1.807 \cdot 10^{-5}$ | $1.807 \cdot 10^{-5}$ | 0 |
| cHWB | $-6.567 \cdot 10^{-5}$ | $-6.567 \cdot 10^{-5}$ | 0 | $1.74 \cdot 10^{-5}$ | $1.74 \cdot 10^{-5}$ | 0 |
| cHbq | $3.692 \cdot 10^{-5}$ | $3.692 \cdot 10^{-5}$ | 0 | $2.023 \cdot 10^{-5}$ | $2.023 \cdot 10^{-5}$ | 0 |
| cHj1 | $-0.0007484$ | $-0.0007484$ | 0 | $2.589 \cdot 10^{-5}$ | $2.589 \cdot 10^{-5}$ | 0 |
| cHj3 | 0.000124 | 0.000124 | 0 | $5.305 \cdot 10^{-6}$ | $5.305 \cdot 10^{-6}$ | 0 |
| cHl311 | $-8.011 \cdot 10^{-5}$ | $-8.011 \cdot 10^{-5}$ | 0 | $2.428 \cdot 10^{-6}$ | $2.428 \cdot 10^{-6}$ | 0 |
| cHl322 | $-0.0006551$ | $-0.0006551$ | 0 | $1.986 \cdot 10^{-5}$ | $1.986 \cdot 10^{-5}$ | 0 |
| cQj11 | $-0.01928$ | $-0.01928$ | 0 | 0.09281 | 0.09281 | 0 |
| cQj18 | 0.03854 | 0.03854 | 0 | 0.013 | 0.013 | 0 |
| cQj31 | 0.08047 | 0.08047 | 0 | 0.3873 | 0.3873 | 0 |
| cQj38 | $-0.05869$ | $-0.05869$ | 0 | 0.0198 | 0.0198 | 0 |
| cQu1 | 0.01366 | 0.01366 | 0 | 0.4921 | 0.4921 | 0 |
| cQu8 | 0.05503 | 0.05503 | 0 | 0.01857 | 0.01857 | 0 |
| cQujb1Im | $-4.393 \cdot 10^{-30}$ | $-2.371 \cdot 10^{-29}$ | $-4.398$ | $2.533 \cdot 10^{-11}$ | $2.533 \cdot 10^{-11}$ | $-1.46 \cdot 10^{-6}$ |
| cQujb1Re | $-1.305 \cdot 10^{-14}$ | $-1.305 \cdot 10^{-14}$ | $-6.895 \cdot 10^{-7}$ | $7.737 \cdot 10^{-12}$ | $7.737 \cdot 10^{-12}$ | $-1.448 \cdot 10^{-6}$ |
| cQujb8Im | $2.269 \cdot 10^{-29}$ | $2.279 \cdot 10^{-29}$ | $-0.004443$ | $1.518 \cdot 10^{-11}$ | $1.518 \cdot 10^{-11}$ | $-1.449 \cdot 10^{-6}$ |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| cQujb8Re | $-1.661 \cdot 10^{-12}$ | $-1.661 \cdot 10^{-12}$ | $-7.225 \cdot 10^{-7}$ | $1.518 \cdot 10^{-11}$ | $1.518 \cdot 10^{-11}$ | $-1.449 \cdot 10^{-6}$ |
| cbBIm | $4.167 \cdot 10^{-20}$ | $4.167 \cdot 10^{-20}$ | $4.411 \cdot 10^{-5}$ | $0.002707$ | $0.002707$ | $0$ |
| cbBRe | $3.198 \cdot 10^{-5}$ | $3.198 \cdot 10^{-5}$ | $0$ | $0.00347$ | $0.00347$ | $0$ |
| cbGIm | $9.191 \cdot 10^{-26}$ | $9.191 \cdot 10^{-26}$ | $0$ | $0.03457$ | $0.03457$ | $0$ |
| cbGRe | $-0.004666$ | $-0.004666$ | $0$ | $0.008716$ | $0.008716$ | $0$ |
| cbHIm | $-1.578 \cdot 10^{-29}$ | $-1.578 \cdot 10^{-29}$ | $0$ | $1.46 \cdot 10^{-13}$ | $1.46 \cdot 10^{-13}$ | $0$ |
| cbHRe | $-1.161 \cdot 10^{-13}$ | $-1.161 \cdot 10^{-13}$ | $0$ | $1.46 \cdot 10^{-13}$ | $1.46 \cdot 10^{-13}$ | $0$ |
| cbWIm | $-4.184 \cdot 10^{-20}$ | $-4.184 \cdot 10^{-20}$ | $0$ | $0.00554$ | $0.00554$ | $0$ |
| cbWRe | $-6.613 \cdot 10^{-5}$ | $-6.613 \cdot 10^{-5}$ | $0$ | $0.005353$ | $0.005353$ | $0$ |
| cbj1 | $-0.007674$ | $-0.007674$ | $0$ | $0.5748$ | $0.5748$ | $0$ |
| cbj8 | $0.04702$ | $0.04702$ | $0$ | $0.01587$ | $0.01587$ | $0$ |
| cbu1 | $-0.003185$ | $-0.003185$ | $0$ | $0.05851$ | $0.05851$ | $0$ |
| cjuQb1Im | $7.012 \cdot 10^{-31}$ | $1.402 \cdot 10^{-30}$ | $-0.9999$ | $7.696 \cdot 10^{-11}$ | $7.696 \cdot 10^{-11}$ | $-1.442 \cdot 10^{-6}$ |
| cjuQb1Re | $-3.733 \cdot 10^{-12}$ | $-3.733 \cdot 10^{-12}$ | $-7.233 \cdot 10^{-7}$ | $7.696 \cdot 10^{-11}$ | $7.696 \cdot 10^{-11}$ | $-1.455 \cdot 10^{-6}$ |
| cjuQb8Im | $4.595 \cdot 10^{-29}$ | $-1.256 \cdot 10^{-29}$ | $1.273$ | $1.71 \cdot 10^{-11}$ | $1.71 \cdot 10^{-11}$ | $-1.403 \cdot 10^{-6}$ |
| cjuQb8Re | $6.282 \cdot 10^{-14}$ | $6.282 \cdot 10^{-14}$ | $-7.322 \cdot 10^{-7}$ | $1.71 \cdot 10^{-11}$ | $1.71 \cdot 10^{-11}$ | $-1.403 \cdot 10^{-6}$ |
| cll1221 | $6.493 \cdot 10^{-5}$ | $6.493 \cdot 10^{-5}$ | $0$ | $9.841 \cdot 10^{-7}$ | $9.841 \cdot 10^{-7}$ | $0$ |
| cuBIm | $3.42 \cdot 10^{-30}$ | $7.771 \cdot 10^{-30}$ | $-1.272$ | $1.358 \cdot 10^{-13}$ | $1.358 \cdot 10^{-13}$ | $-1.399 \cdot 10^{-6}$ |
| cuBRe | $-8.681 \cdot 10^{-15}$ | $-8.681 \cdot 10^{-15}$ | $-7.257 \cdot 10^{-7}$ | $1.343 \cdot 10^{-13}$ | $1.343 \cdot 10^{-13}$ | $-1.415 \cdot 10^{-6}$ |
| cuGRe | $-2.992 \cdot 10^{-11}$ | $-2.992 \cdot 10^{-11}$ | $-7.353 \cdot 10^{-7}$ | $5.147 \cdot 10^{-12}$ | $5.147 \cdot 10^{-12}$ | $-1.438 \cdot 10^{-6}$ |
| cuHIm | $-8.871 \cdot 10^{-32}$ | $-9.008 \cdot 10^{-32}$ | $-0.01544$ | $8.413 \cdot 10^{-17}$ | $8.413 \cdot 10^{-17}$ | $-1.45 \cdot 10^{-6}$ |
| cuHRe | $-2.787 \cdot 10^{-15}$ | $-2.787 \cdot 10^{-15}$ | $-7.534 \cdot 10^{-7}$ | $8.413 \cdot 10^{-17}$ | $8.413 \cdot 10^{-17}$ | $-1.438 \cdot 10^{-6}$ |
| cuWIm | $4.576 \cdot 10^{-29}$ | $-8.017 \cdot 10^{-30}$ | $1.175$ | $9.985 \cdot 10^{-13}$ | $9.985 \cdot 10^{-13}$ | $-1.452 \cdot 10^{-6}$ |
| sm | $0$ | $0$ | $0$ | $0.5634$ | $0.5634$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cHQ3 | 0.001635 | 0.001635 | 0 | $4.956 \cdot 10^{-5}$ | $4.956 \cdot 10^{-5}$ | 0 |
| cHl311 | $1.967 \cdot 10^{-20}$ | $1.967 \cdot 10^{-20}$ | 0 | $4.575 \cdot 10^{-36}$ | $4.575 \cdot 10^{-36}$ | 0 |
| cHl322 | $-0.001164$ | $-0.001164$ | 0 | $3.527 \cdot 10^{-5}$ | $3.527 \cdot 10^{-5}$ | 0 |
| cHtbIm | $-1.141 \cdot 10^{-22}$ | $-1.141 \cdot 10^{-22}$ | 0 | $1.583 \cdot 10^{-7}$ | $1.583 \cdot 10^{-7}$ | 0 |
| cHtbRe | $-6.719 \cdot 10^{-7}$ | $-6.719 \cdot 10^{-7}$ | 0 | $1.413 \cdot 10^{-7}$ | $1.413 \cdot 10^{-7}$ | 0 |
| cQl311 | 0.1725 | 0.1725 | 0 | 0.8039 | 0.8039 | 0 |
| cbWIm | $2.704 \cdot 10^{-19}$ | $2.704 \cdot 10^{-19}$ | 0 | 0.004483 | 0.004483 | 0 |
| cbWRe | $-5.557 \cdot 10^{-6}$ | $-5.557 \cdot 10^{-6}$ | 0 | 0.000701 | 0.000701 | 0 |
| ceWRe11 | $-1.645 \cdot 10^{-8}$ | $-1.645 \cdot 10^{-8}$ | 0 | 0.00207 | 0.00207 | 0 |
| cleQt1Im11 | $8.145 \cdot 10^{-11}$ | $8.145 \cdot 10^{-11}$ | 0 | 0.08333 | 0.08333 | 0 |
| cleQt1Re11 | $4.866 \cdot 10^{-7}$ | $4.866 \cdot 10^{-7}$ | 0 | 0.08333 | 0.08333 | 0 |
| cleQt3Im11 | $-1.702 \cdot 10^{-10}$ | $-1.702 \cdot 10^{-10}$ | 0 | 0.4257 | 0.4257 | 0 |
| cleQt3Re11 | $-1.064 \cdot 10^{-6}$ | $-1.064 \cdot 10^{-6}$ | 0 | 0.4678 | 0.4678 | 0 |
| clebQIm11 | $-2.051 \cdot 10^{-12}$ | $-2.051 \cdot 10^{-12}$ | 0 | 0.08333 | 0.08333 | 0 |
| clebQRe11 | $-1.207 \cdot 10^{-8}$ | $-1.207 \cdot 10^{-8}$ | 0 | 0.08333 | 0.08333 | 0 |
| cll1221 | $4.198 \cdot 10^{-7}$ | $4.198 \cdot 10^{-7}$ | 0 | $6.362 \cdot 10^{-9}$ | $6.362 \cdot 10^{-9}$ | 0 |
| ctWIm | $-1.108 \cdot 10^{-18}$ | $-1.108 \cdot 10^{-18}$ | 0 | 0.004268 | 0.004268 | 0 |
| ctWRe | $-0.005053$ | $-0.005053$ | 0 | 0.002077 | 0.002077 | 0 |
| sm | 0 | 0 | 0 | $2.783 \cdot 10^{-7}$ | $2.783 \cdot 10^{-7}$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-0.0001606$ | $-0.0001606$ | 0 | $1.091 \cdot 10^{-5}$ | $1.091 \cdot 10^{-5}$ | 0 |
| cHWB | $-0.0007871$ | $-0.0007871$ | 0 | $7.222 \cdot 10^{-5}$ | $7.222 \cdot 10^{-5}$ | 0 |
| cHe22 | $7.558 \cdot 10^{-5}$ | $7.558 \cdot 10^{-5}$ | 0 | $1.113 \cdot 10^{-5}$ | $1.113 \cdot 10^{-5}$ | 0 |
| cHj1 | $4.678 \cdot 10^{-5}$ | $4.678 \cdot 10^{-5}$ | 0 | $4.4 \cdot 10^{-6}$ | $4.4 \cdot 10^{-6}$ | 0 |
| cHj3 | $-4.783 \cdot 10^{-5}$ | $-4.783 \cdot 10^{-5}$ | 0 | $4.48 \cdot 10^{-6}$ | $4.48 \cdot 10^{-6}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| cHl122 | $-5.487 \cdot 10^{-6}$ | $-5.487 \cdot 10^{-6}$ | 0 | $1.918 \cdot 10^{-6}$ | $1.918 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.0004374$ | $-0.0004374$ | 0 | $1.326 \cdot 10^{-5}$ | $1.326 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.0001353$ | $-0.0001353$ | 0 | $4.346 \cdot 10^{-6}$ | $4.346 \cdot 10^{-6}$ | 0 |
| ceBIm22 | $2.945 \cdot 10^{-24}$ | $2.945 \cdot 10^{-24}$ | 0 | $0.0006085$ | $0.0006085$ | 0 |
| ceBRe22 | $7.151 \cdot 10^{-7}$ | $7.151 \cdot 10^{-7}$ | 0 | $0.0009011$ | $0.0009011$ | 0 |
| ceHIm22 | $-8.695 \cdot 10^{-28}$ | $-8.695 \cdot 10^{-28}$ | 0 | $1.682 \cdot 10^{-8}$ | $1.682 \cdot 10^{-8}$ | 0 |
| ceHRe22 | $-3.336 \cdot 10^{-10}$ | $-3.336 \cdot 10^{-10}$ | 0 | $1.682 \cdot 10^{-8}$ | $1.682 \cdot 10^{-8}$ | 0 |
| ceWIm22 | $-2.17 \cdot 10^{-23}$ | $-2.17 \cdot 10^{-23}$ | 0 | $0.001385$ | $0.001385$ | 0 |
| ceWRe22 | $-1.1 \cdot 10^{-6}$ | $-1.1 \cdot 10^{-6}$ | 0 | $0.002179$ | $0.002179$ | 0 |
| ceu22 | $-0.026$ | $-0.026$ | 0 | $0.1592$ | $0.1592$ | 0 |
| cje22 | $-0.0003323$ | $-0.0003323$ | 0 | $0.008297$ | $0.008297$ | 0 |
| cleju1Im22 | $-9.166 \cdot 10^{-26}$ | $2.344 \cdot 10^{-28}$ | $1.003$ | $8.868 \cdot 10^{-6}$ | $8.868 \cdot 10^{-6}$ | $2.706 \cdot 10^{-7}$ |
| cleju1Re22 | $1.087 \cdot 10^{-8}$ | $1.087 \cdot 10^{-8}$ | $9.203 \cdot 10^{-8}$ | $8.868 \cdot 10^{-6}$ | $8.868 \cdot 10^{-6}$ | $2.819 \cdot 10^{-7}$ |
| cleju3Im22 | $2.781 \cdot 10^{-24}$ | $4.242 \cdot 10^{-24}$ | $-0.5251$ | $6.356 \cdot 10^{-5}$ | $6.356 \cdot 10^{-5}$ | $2.675 \cdot 10^{-7}$ |
| cleju3Re22 | $-2.497 \cdot 10^{-8}$ | $-2.497 \cdot 10^{-8}$ | $1.201 \cdot 10^{-7}$ | $5.175 \cdot 10^{-5}$ | $5.175 \cdot 10^{-5}$ | $2.899 \cdot 10^{-7}$ |
| clj122 | $-0.05026$ | $-0.05026$ | 0 | $0.2144$ | $0.2144$ | 0 |
| clj322 | $0.03732$ | $0.03732$ | 0 | $0.1592$ | $0.1592$ | 0 |
| cll1221 | $8.255 \cdot 10^{-5}$ | $8.255 \cdot 10^{-5}$ | 0 | $1.251 \cdot 10^{-6}$ | $1.251 \cdot 10^{-6}$ | 0 |
| clu22 | $-0.01478$ | $-0.01478$ | 0 | $0.1821$ | $0.1821$ | 0 |
| cuBIm | $-3.312 \cdot 10^{-24}$ | $-3.312 \cdot 10^{-24}$ | $1.356 \cdot 10^{-5}$ | $1.704 \cdot 10^{-8}$ | $1.704 \cdot 10^{-8}$ | $2.934 \cdot 10^{-7}$ |
| cuBRe | $-6.343 \cdot 10^{-8}$ | $-6.343 \cdot 10^{-8}$ | $1.419 \cdot 10^{-7}$ | $1.249 \cdot 10^{-8}$ | $1.249 \cdot 10^{-8}$ | $2.403 \cdot 10^{-7}$ |
| cuHIm | $-2.72 \cdot 10^{-31}$ | $1.655 \cdot 10^{-29}$ | $61.85$ | $6.195 \cdot 10^{-15}$ | $6.195 \cdot 10^{-15}$ | $2.744 \cdot 10^{-7}$ |
| cuHRe | $-2.029 \cdot 10^{-13}$ | $-2.029 \cdot 10^{-13}$ | $1.478 \cdot 10^{-7}$ | $6.195 \cdot 10^{-15}$ | $6.195 \cdot 10^{-15}$ | $2.744 \cdot 10^{-7}$ |
| cuWIm | $7.008 \cdot 10^{-24}$ | $7.008 \cdot 10^{-24}$ | $-7.684 \cdot 10^{-5}$ | $6.149 \cdot 10^{-8}$ | $6.149 \cdot 10^{-8}$ | $2.765 \cdot 10^{-7}$ |
| sm | 0 | 0 | 0 | $0.00523$ | $0.00523$ | 0 |

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

interference

square

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cHj3 | 0.0007443 | 0.0007443 | 0 | $2.256 \cdot 10^{-5}$ | $2.256 \cdot 10^{-5}$ | 0 |
| cHl311 | $-0.0005913$ | $-0.0005913$ | 0 | $1.792 \cdot 10^{-5}$ | $1.792 \cdot 10^{-5}$ | 0 |
| cHl322 | $-9.56 \cdot 10^{-5}$ | $-9.56 \cdot 10^{-5}$ | 0 | $2.898 \cdot 10^{-6}$ | $2.898 \cdot 10^{-6}$ | 0 |
| cHudIm | $3.308 \cdot 10^{-31}$ | $-3.586 \cdot 10^{-32}$ | 1.108 | $4.512 \cdot 10^{-17}$ | $4.512 \cdot 10^{-17}$ | $9.308 \cdot 10^{-7}$ |
| cHudRe | $-4.122 \cdot 10^{-16}$ | $-4.122 \cdot 10^{-16}$ | $4.609 \cdot 10^{-7}$ | $5.647 \cdot 10^{-17}$ | $5.647 \cdot 10^{-17}$ | $9.562 \cdot 10^{-7}$ |
| cdWIm | $-2.107 \cdot 10^{-24}$ | $-2.09 \cdot 10^{-24}$ | 0.008265 | $1.158 \cdot 10^{-9}$ | $1.158 \cdot 10^{-9}$ | $6.046 \cdot 10^{-7}$ |
| cdWRe | $-1.029 \cdot 10^{-9}$ | $-1.029 \cdot 10^{-9}$ | $2.915 \cdot 10^{-7}$ | $1.157 \cdot 10^{-9}$ | $1.157 \cdot 10^{-9}$ | $6.912 \cdot 10^{-7}$ |
| ceWIm33 | $-2.245 \cdot 10^{-21}$ | $-2.245 \cdot 10^{-21}$ | 0 | 0.003766 | 0.003766 | 0 |
| ceWRe33 | $-3.681 \cdot 10^{-5}$ | $-3.681 \cdot 10^{-5}$ | 0 | 0.004056 | 0.004056 | 0 |
| cledjIm33 | $8.162 \cdot 10^{-14}$ | $8.162 \cdot 10^{-14}$ | $3.063 \cdot 10^{-7}$ | $2.378 \cdot 10^{-8}$ | $2.378 \cdot 10^{-8}$ | $6.308 \cdot 10^{-7}$ |
| cledjRe33 | $-4.861 \cdot 10^{-10}$ | $-4.861 \cdot 10^{-10}$ | $3.086 \cdot 10^{-7}$ | $2.378 \cdot 10^{-8}$ | $2.378 \cdot 10^{-8}$ | $6.308 \cdot 10^{-7}$ |
| cleju1Im33 | $-1.518 \cdot 10^{-11}$ | $-1.518 \cdot 10^{-11}$ | $1.318 \cdot 10^{-7}$ | $4.434 \cdot 10^{-6}$ | $4.434 \cdot 10^{-6}$ | $2.932 \cdot 10^{-7}$ |
| cleju1Re33 | $9.08 \cdot 10^{-8}$ | $9.08 \cdot 10^{-8}$ | $1.432 \cdot 10^{-7}$ | $4.434 \cdot 10^{-6}$ | $4.434 \cdot 10^{-6}$ | $2.706 \cdot 10^{-7}$ |
| cleju3Im33 | $4.942 \cdot 10^{-12}$ | $4.942 \cdot 10^{-12}$ | $1.416 \cdot 10^{-7}$ | $7.348 \cdot 10^{-7}$ | $7.348 \cdot 10^{-7}$ | $2.722 \cdot 10^{-7}$ |
| cleju3Re33 | $-2.93 \cdot 10^{-8}$ | $-2.93 \cdot 10^{-8}$ | $1.365 \cdot 10^{-7}$ | $7.348 \cdot 10^{-7}$ | $7.348 \cdot 10^{-7}$ | $2.722 \cdot 10^{-7}$ |
| clj333 | 0.01867 | 0.01867 | 0 | 0.087 | 0.087 | 0 |
| cll1221 | 0.0008698 | 0.0008698 | 0 | $1.318 \cdot 10^{-5}$ | $1.318 \cdot 10^{-5}$ | 0 |
| cuWIm | $5.594 \cdot 10^{-25}$ | $-9.51 \cdot 10^{-25}$ | 2.7 | $2.307 \cdot 10^{-7}$ | $2.307 \cdot 10^{-7}$ | $3.035 \cdot 10^{-7}$ |
| sm | 0 | 0 | 0 | 0.001074 | 0.001074 | 0 |

**1.60** $\quad d\bar{d} \to c\bar{c}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-8.579 \cdot 10^{-5}$ | $-8.579 \cdot 10^{-5}$ | 0 | $1.182 \cdot 10^{-5}$ | $1.182 \cdot 10^{-5}$ | 0 |
| cHWB | $-9.782 \cdot 10^{-5}$ | $-9.782 \cdot 10^{-5}$ | 0 | $2.358 \cdot 10^{-5}$ | $2.358 \cdot 10^{-5}$ | 0 |
| cHd | $1.864 \cdot 10^{-5}$ | $1.864 \cdot 10^{-5}$ | 0 | $1.586 \cdot 10^{-5}$ | $1.586 \cdot 10^{-5}$ | 0 |
| cHj1 | $2.626 \cdot 10^{-5}$ | $2.626 \cdot 10^{-5}$ | 0 | $4.225 \cdot 10^{-6}$ | $4.225 \cdot 10^{-6}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cHj3 | $0.0001601$ | $0.0001601$ | $0$ | $1.278 \cdot 10^{-5}$ | $1.278 \cdot 10^{-5}$ | $0$ |
| cHl311 | $-0.001025$ | $-0.001025$ | $0$ | $3.106 \cdot 10^{-5}$ | $3.106 \cdot 10^{-5}$ | $0$ |
| cHl322 | $-0.0001442$ | $-0.0001442$ | $0$ | $4.37 \cdot 10^{-6}$ | $4.37 \cdot 10^{-6}$ | $0$ |
| cdBIm | $-6.075 \cdot 10^{-29}$ | $-6.076 \cdot 10^{-29}$ | $-0.0002705$ | $1.998 \cdot 10^{-12}$ | $1.998 \cdot 10^{-12}$ | $-1.151 \cdot 10^{-6}$ |
| cdBRe | $9.258 \cdot 10^{-13}$ | $9.258 \cdot 10^{-13}$ | $-5.833 \cdot 10^{-7}$ | $2.507 \cdot 10^{-12}$ | $2.507 \cdot 10^{-12}$ | $-1.157 \cdot 10^{-6}$ |
| cdGIm | $\color{blue}{-5.256 \cdot 10^{-34}}$ | $\color{blue}{-6.28 \cdot 10^{-33}}$ | $\color{blue}{-10.95}$ | $2.855 \cdot 10^{-11}$ | $2.855 \cdot 10^{-11}$ | $-1.156 \cdot 10^{-6}$ |
| cdGRe | $-1.398 \cdot 10^{-10}$ | $-1.398 \cdot 10^{-10}$ | $-5.721 \cdot 10^{-7}$ | $1.693 \cdot 10^{-11}$ | $1.693 \cdot 10^{-11}$ | $-1.182 \cdot 10^{-6}$ |
| cdHIm | $\color{blue}{7.361 \cdot 10^{-32}}$ | $\color{blue}{-2.876 \cdot 10^{-32}}$ | $\color{blue}{1.391}$ | $3.63 \cdot 10^{-17}$ | $3.63 \cdot 10^{-17}$ | $-1.184 \cdot 10^{-6}$ |
| cdHRe | $-1.191 \cdot 10^{-15}$ | $-1.191 \cdot 10^{-15}$ | $-5.876 \cdot 10^{-7}$ | $3.63 \cdot 10^{-17}$ | $3.63 \cdot 10^{-17}$ | $-1.184 \cdot 10^{-6}$ |
| cdWIm | $8.457 \cdot 10^{-28}$ | $8.458 \cdot 10^{-28}$ | $-0.0001457$ | $3.201 \cdot 10^{-12}$ | $3.201 \cdot 10^{-12}$ | $-1.156 \cdot 10^{-6}$ |
| cdWRe | $-3.381 \cdot 10^{-12}$ | $-3.381 \cdot 10^{-12}$ | $-5.916 \cdot 10^{-7}$ | $4.676 \cdot 10^{-12}$ | $4.676 \cdot 10^{-12}$ | $-1.176 \cdot 10^{-6}$ |
| cjd1 | $-0.008174$ | $-0.008174$ | $0$ | $0.6125$ | $0.6125$ | $0$ |
| cjd8 | $0.2628$ | $0.2628$ | $0$ | $0.08869$ | $0.08869$ | $0$ |
| cjj11 | $-0.05635$ | $-0.05635$ | $0$ | $0.5424$ | $0.5424$ | $0$ |
| cjj18 | $1.111$ | $1.111$ | $0$ | $0.7498$ | $0.7498$ | $0$ |
| cjj31 | $0.2885$ | $0.2885$ | $0$ | $2.777$ | $2.777$ | $0$ |
| cjj38 | $-0.04247$ | $-0.04247$ | $2.355 \cdot 10^{-8}$ | $0.02866$ | $0.02866$ | $0$ |
| cju1 | $0.0001843$ | $0.0001843$ | $0$ | $0.006655$ | $0.006655$ | $0$ |
| cju8 | $0.3488$ | $0.3488$ | $0$ | $0.1177$ | $0.1177$ | $0$ |
| cjujd11Im | $\color{blue}{-8.274 \cdot 10^{-31}}$ | $\color{blue}{-6.89 \cdot 10^{-31}}$ | $\color{blue}{0.1672}$ | $1.279 \cdot 10^{-14}$ | $1.279 \cdot 10^{-14}$ | $-5.474 \cdot 10^{-7}$ |
| cjujd11Re | $-2.104 \cdot 10^{-15}$ | $-2.104 \cdot 10^{-15}$ | $-3.326 \cdot 10^{-7}$ | $5.158 \cdot 10^{-15}$ | $5.158 \cdot 10^{-15}$ | $-6.01 \cdot 10^{-7}$ |
| cjujd1Re | $-3.863 \cdot 10^{-14}$ | $-3.863 \cdot 10^{-14}$ | $-3.107 \cdot 10^{-7}$ | $1.914 \cdot 10^{-14}$ | $1.914 \cdot 10^{-14}$ | $-5.747 \cdot 10^{-7}$ |
| cjujd81Im | $\color{blue}{-6.014 \cdot 10^{-31}}$ | $\color{blue}{-2.485 \cdot 10^{-31}}$ | $\color{blue}{0.5868}$ | $1.698 \cdot 10^{-15}$ | $1.698 \cdot 10^{-15}$ | $-5.89 \cdot 10^{-7}$ |
| cjujd81Re | $-8.758 \cdot 10^{-15}$ | $-8.758 \cdot 10^{-15}$ | $-2.969 \cdot 10^{-7}$ | $9.06 \cdot 10^{-16}$ | $9.06 \cdot 10^{-16}$ | $-5.96 \cdot 10^{-7}$ |
| cjujd8Im | $-5.517 \cdot 10^{-33}$ | $-5.517 \cdot 10^{-33}$ | $-3.625 \cdot 10^{-8}$ | $4.254 \cdot 10^{-15}$ | $4.254 \cdot 10^{-15}$ | $-6.112 \cdot 10^{-7}$ |
| cjujd8Re | $5.953 \cdot 10^{-16}$ | $5.953 \cdot 10^{-16}$ | $-2.856 \cdot 10^{-7}$ | $4.254 \cdot 10^{-15}$ | $4.254 \cdot 10^{-15}$ | $-6.112 \cdot 10^{-7}$ |
| cll1221 | $8.694 \cdot 10^{-5}$ | $8.694 \cdot 10^{-5}$ | $0$ | $1.318 \cdot 10^{-6}$ | $1.318 \cdot 10^{-6}$ | $0$ |
| cuBIm | $\color{blue}{2.63 \cdot 10^{-24}}$ | $\color{blue}{5.491 \cdot 10^{-24}}$ | $\color{blue}{-1.088}$ | $5.157 \cdot 10^{-8}$ | $5.157 \cdot 10^{-8}$ | $2.715 \cdot 10^{-7}$ |
| cuBRe | $-7.78 \cdot 10^{-9}$ | $-7.78 \cdot 10^{-9}$ | $1.414 \cdot 10^{-7}$ | $3.771 \cdot 10^{-8}$ | $3.771 \cdot 10^{-8}$ | $2.917 \cdot 10^{-7}$ |

| | $-1.034 \cdot 10^{-5}$ | $-1.034 \cdot 10^{-5}$ | $9.669 \cdot 10^{-8}$ | $1.446 \cdot 10^{-6}$ | $1.446 \cdot 10^{-6}$ | $2.767 \cdot 10^{-7}$ |
|---|---|---|---|---|---|---|
| cuGRe | $-1.034 \cdot 10^{-5}$ | $-1.034 \cdot 10^{-5}$ | $9.669 \cdot 10^{-8}$ | $1.446 \cdot 10^{-6}$ | $1.446 \cdot 10^{-6}$ | $2.767 \cdot 10^{-7}$ |
| cuHIm | $1.439 \cdot 10^{-31}$ | $1.444 \cdot 10^{-31}$ | $-0.00357$ | $3.63 \cdot 10^{-17}$ | $3.63 \cdot 10^{-17}$ | $2.755 \cdot 10^{-7}$ |
| cuHRe | $-1.191 \cdot 10^{-15}$ | $-1.191 \cdot 10^{-15}$ | $8.394 \cdot 10^{-8}$ | $3.63 \cdot 10^{-17}$ | $3.63 \cdot 10^{-17}$ | $2.755 \cdot 10^{-7}$ |
| cuWIm | $8.857 \cdot 10^{-24}$ | $1.295 \cdot 10^{-23}$ | $-0.4618$ | $1.225 \cdot 10^{-7}$ | $1.225 \cdot 10^{-7}$ | $2.449 \cdot 10^{-7}$ |
| cud1 | $-0.001756$ | $-0.001756$ | $0$ | $0.03225$ | $0.03225$ | $0$ |
| cud8 | $0.3665$ | $0.3665$ | $0$ | $0.1237$ | $0.1237$ | $0$ |
| sm | $0$ | $0$ | $0$ | $0.8997$ | $0.8997$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-5.511 \cdot 10^{-5}$ | $-5.511 \cdot 10^{-5}$ | $0$ | $1.021 \cdot 10^{-5}$ | $1.021 \cdot 10^{-5}$ | $0$ |
| cHWB | $-0.0001328$ | $-0.0001328$ | $0$ | $1.611 \cdot 10^{-5}$ | $1.611 \cdot 10^{-5}$ | $0$ |
| cHd | $8.589 \cdot 10^{-7}$ | $8.589 \cdot 10^{-7}$ | $0$ | $3.181 \cdot 10^{-6}$ | $3.181 \cdot 10^{-6}$ | $0$ |
| cHe11 | $-3.807 \cdot 10^{-5}$ | $-3.807 \cdot 10^{-5}$ | $0$ | $5.527 \cdot 10^{-6}$ | $5.527 \cdot 10^{-6}$ | $0$ |
| cHj1 | $0.0002672$ | $0.0002672$ | $0$ | $6.417 \cdot 10^{-6}$ | $6.417 \cdot 10^{-6}$ | $0$ |
| cHj3 | $7.591 \cdot 10^{-5}$ | $7.591 \cdot 10^{-5}$ | $0$ | $2.863 \cdot 10^{-6}$ | $2.863 \cdot 10^{-6}$ | $0$ |
| cHl111 | $0.0003745$ | $0.0003745$ | $0$ | $1.38 \cdot 10^{-5}$ | $1.38 \cdot 10^{-5}$ | $0$ |
| cHl311 | $-5.469 \cdot 10^{-6}$ | $-5.469 \cdot 10^{-6}$ | $0$ | $1.305 \cdot 10^{-6}$ | $1.305 \cdot 10^{-6}$ | $0$ |
| cHl322 | $-3.174 \cdot 10^{-5}$ | $-3.174 \cdot 10^{-5}$ | $0$ | $9.621 \cdot 10^{-7}$ | $9.621 \cdot 10^{-7}$ | $0$ |
| cdBIm | $-1.041 \cdot 10^{-28}$ | $-1.041 \cdot 10^{-28}$ | $-6.53 \cdot 10^{-6}$ | $4.787 \cdot 10^{-13}$ | $4.787 \cdot 10^{-13}$ | $-1.191 \cdot 10^{-6}$ |
| cdBRe | $1.612 \cdot 10^{-12}$ | $1.612 \cdot 10^{-12}$ | $-6.203 \cdot 10^{-7}$ | $7.928 \cdot 10^{-13}$ | $7.928 \cdot 10^{-13}$ | $-1.173 \cdot 10^{-6}$ |
| cdHIm | $5.02 \cdot 10^{-39}$ | $1.112 \cdot 10^{-39}$ | $0.7785$ | $1.959 \cdot 10^{-24}$ | $1.959 \cdot 10^{-24}$ | $-1.174 \cdot 10^{-6}$ |
| cdHRe | $-6.469 \cdot 10^{-23}$ | $-6.469 \cdot 10^{-23}$ | $-5.874 \cdot 10^{-7}$ | $1.959 \cdot 10^{-24}$ | $1.959 \cdot 10^{-24}$ | $-1.174 \cdot 10^{-6}$ |
| cdWIm | $6.643 \cdot 10^{-27}$ | $6.643 \cdot 10^{-27}$ | $-8.279 \cdot 10^{-7}$ | $1.547 \cdot 10^{-12}$ | $1.547 \cdot 10^{-12}$ | $-1.164 \cdot 10^{-6}$ |
| cdWRe | $-1.702 \cdot 10^{-12}$ | $-1.702 \cdot 10^{-12}$ | $-5.875 \cdot 10^{-7}$ | $5.574 \cdot 10^{-13}$ | $5.574 \cdot 10^{-13}$ | $-1.166 \cdot 10^{-6}$ |
| ceBIm11 | $7.932 \cdot 10^{-26}$ | $7.932 \cdot 10^{-26}$ | $0$ | $0.0003412$ | $0.0003412$ | $0$ |
| ceBRe11 | $-1.978 \cdot 10^{-10}$ | $-1.978 \cdot 10^{-10}$ | $0$ | $4.904 \cdot 10^{-5}$ | $4.904 \cdot 10^{-5}$ | $0$ |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| ceHIm11 | $-1.892 \cdot 10^{-33}$ | $-1.892 \cdot 10^{-33}$ | 0 | $2.274 \cdot 10^{-13}$ | $2.274 \cdot 10^{-13}$ | 0 |
| ceHRe11 | $-2.189 \cdot 10^{-17}$ | $-2.189 \cdot 10^{-17}$ | 0 | $2.274 \cdot 10^{-13}$ | $2.274 \cdot 10^{-13}$ | 0 |
| ceWRe11 | $1.011 \cdot 10^{-9}$ | $1.011 \cdot 10^{-9}$ | 0 | 0.0005455 | 0.0005455 | 0 |
| ced11 | 0.0004386 | 0.0004386 | 0 | 0.005371 | 0.005371 | 0 |
| cje11 | $-0.0001356$ | $-0.0001356$ | 0 | 0.003258 | 0.003258 | 0 |
| cld11 | $4.402 \cdot 10^{-5}$ | $4.402 \cdot 10^{-5}$ | 0 | 0.001085 | 0.001085 | 0 |
| cledjIm11 | $2.519 \cdot 10^{-38}$ | $-2.568 \cdot 10^{-34}$ | $1.02 \cdot 10^{4}$ | $1.199 \cdot 10^{-10}$ | $1.199 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| cledjRe11 | $-7.076 \cdot 10^{-16}$ | $-7.076 \cdot 10^{-16}$ | $-5.794 \cdot 10^{-7}$ | $1.199 \cdot 10^{-10}$ | $1.199 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| clj111 | 0.005129 | 0.005129 | 0 | 0.02645 | 0.02645 | 0 |
| clj311 | 0.02022 | 0.02022 | 0 | 0.1043 | 0.1043 | 0 |
| cll1221 | $4.771 \cdot 10^{-5}$ | $4.771 \cdot 10^{-5}$ | 0 | $7.231 \cdot 10^{-7}$ | $7.231 \cdot 10^{-7}$ | 0 |
| sm | 0 | 0 | 0 | 0.002598 | 0.002598 | 0 |

## 1.62 $\quad d\bar{d} \to s\bar{s}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHDD | $-6.401 \cdot 10^{-5}$ | $-6.401 \cdot 10^{-5}$ | 0 | $1.694 \cdot 10^{-6}$ | $1.694 \cdot 10^{-6}$ | 0 |
| cHWB | $1.958 \cdot 10^{-5}$ | $1.958 \cdot 10^{-5}$ | 0 | $1.043 \cdot 10^{-6}$ | $1.043 \cdot 10^{-6}$ | 0 |
| cHd | $-6.222 \cdot 10^{-5}$ | $-6.222 \cdot 10^{-5}$ | 0 | $2.379 \cdot 10^{-5}$ | $2.379 \cdot 10^{-5}$ | 0 |
| cHj1 | $4.823 \cdot 10^{-5}$ | $4.823 \cdot 10^{-5}$ | 0 | $3.854 \cdot 10^{-6}$ | $3.854 \cdot 10^{-6}$ | 0 |
| cHj3 | $5.832 \cdot 10^{-5}$ | $5.832 \cdot 10^{-5}$ | 0 | $4.471 \cdot 10^{-6}$ | $4.471 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.001199$ | $-0.001199$ | 0 | $3.634 \cdot 10^{-5}$ | $3.634 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.0007717$ | $-0.0007717$ | 0 | $2.339 \cdot 10^{-5}$ | $2.339 \cdot 10^{-5}$ | 0 |
| cdBIm | $9.133 \cdot 10^{-28}$ | $8.937 \cdot 10^{-28}$ | 0.0215 | $8.472 \cdot 10^{-11}$ | $8.472 \cdot 10^{-11}$ | $6.374 \cdot 10^{-7}$ |
| cdBRe | $-8.539 \cdot 10^{-11}$ | $-8.539 \cdot 10^{-11}$ | $3.162 \cdot 10^{-7}$ | $1.766 \cdot 10^{-10}$ | $1.766 \cdot 10^{-10}$ | $6.23 \cdot 10^{-7}$ |
| cdGIm | $-1.053 \cdot 10^{-24}$ | $-9.079 \cdot 10^{-25}$ | 0.1376 | $6.767 \cdot 10^{-9}$ | $6.767 \cdot 10^{-9}$ | $6.354 \cdot 10^{-7}$ |
| cdGRe | $-5.56 \cdot 10^{-8}$ | $-5.56 \cdot 10^{-8}$ | $3.058 \cdot 10^{-7}$ | $5.465 \cdot 10^{-10}$ | $5.465 \cdot 10^{-10}$ | $6.222 \cdot 10^{-7}$ |
| cdHIm | $1.029 \cdot 10^{-33}$ | $2.081 \cdot 10^{-33}$ | $-1.023$ | $3.893 \cdot 10^{-19}$ | $3.893 \cdot 10^{-19}$ | $-2.825 \cdot 10^{-7}$ |

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| cdHRe | $-1.291 \cdot 10^{-17}$ | $-1.291 \cdot 10^{-17}$ | $-1.549 \cdot 10^{-7}$ | | $7.787 \cdot 10^{-19}$ | $7.787 \cdot 10^{-19}$ | $-2.697 \cdot 10^{-7}$ |
| cdWIm | $-1.349 \cdot 10^{-26}$ | $-1.136 \cdot 10^{-26}$ | $0.1578$ | | $6.607 \cdot 10^{-10}$ | $6.607 \cdot 10^{-10}$ | $6.205 \cdot 10^{-7}$ |
| cdWRe | $-3.276 \cdot 10^{-10}$ | $-3.276 \cdot 10^{-10}$ | $3.357 \cdot 10^{-7}$ | | $1.111 \cdot 10^{-9}$ | $1.111 \cdot 10^{-9}$ | $6.3 \cdot 10^{-7}$ |
| cdd8 | $0.04308$ | $0.04308$ | $0$ | | $0.02908$ | $0.02908$ | $0$ |
| cjd1 | $-0.0226$ | $-0.0226$ | $0$ | | $1.629$ | $1.629$ | $0$ |
| cjd8 | $0.2942$ | $0.2942$ | $0$ | | $0.09929$ | $0.09929$ | $0$ |
| cjj11 | $0.1233$ | $0.1233$ | $0$ | | $1.112$ | $1.112$ | $0$ |
| cjj18 | $0.5251$ | $0.5251$ | $-1.905 \cdot 10^{-8}$ | | $0.3544$ | $0.3544$ | $0$ |
| cjj31 | $0.001498$ | $0.001498$ | $0$ | | $0.01352$ | $0.01352$ | $0$ |
| cjj38 | $1.285$ | $1.285$ | $0$ | | $0.8675$ | $0.8675$ | $0$ |
| cll1221 | $0.0002178$ | $0.0002178$ | $0$ | | $3.302 \cdot 10^{-6}$ | $3.302 \cdot 10^{-6}$ | $0$ |
| sm | $0$ | $0$ | $0$ | | $0.7932$ | $0.7932$ | $0$ |

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

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHDD | $-0.001405$ | $-0.001405$ | $0$ | | $9.783 \cdot 10^{-5}$ | $9.783 \cdot 10^{-5}$ | $0$ |
| cHWB | $-0.002497$ | $-0.002497$ | $0$ | | $0.0002926$ | $0.0002926$ | $0$ |
| cHe11 | $-0.006956$ | $-0.006956$ | $0$ | | $0.000473$ | $0.000473$ | $0$ |
| cHl111 | $0.009821$ | $0.009821$ | $0$ | | $0.0005371$ | $0.0005371$ | $0$ |
| cHl122 | $-0.002071$ | $-0.002071$ | $0$ | | $6.276 \cdot 10^{-5}$ | $6.276 \cdot 10^{-5}$ | $0$ |
| cHl311 | $-0.002127$ | $-0.002127$ | $0$ | | $0.0005548$ | $0.0005548$ | $0$ |
| cHl322 | $-6.193 \cdot 10^{-19}$ | $-9.148 \cdot 10^{-19}$ | $-0.4772$ | | $4.419 \cdot 10^{-35}$ | $3.932 \cdot 10^{-35}$ | $0.1103$ |
| ceBIm11 | $-3.809 \cdot 10^{-24}$ | $-3.809 \cdot 10^{-24}$ | $0$ | | $0.01187$ | $0.01187$ | $0$ |
| ceBRe11 | $1.076 \cdot 10^{-8}$ | $1.076 \cdot 10^{-8}$ | $0$ | | $0.001434$ | $0.001434$ | $0$ |
| ceWRe11 | $2.051 \cdot 10^{-7}$ | $2.051 \cdot 10^{-7}$ | $0$ | | $0.1562$ | $0.1562$ | $0$ |
| cle2211 | $-0.4958$ | $-0.4958$ | $0$ | | $1$ | $1$ | $0$ |
| cll1122 | $0.03331$ | $0.03331$ | $0$ | | $0.1392$ | $0.1392$ | $0$ |

| | | interference | | | square | |
|---|---|---|---|---|---|---|
| cll1221 | 0.00249 | 0.00249 | 0 | $3.773 \cdot 10^{-5}$ | $3.773 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | 2.964 | 2.964 | 0 |

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

| | | interference | | | square | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHl311 | $3.705 \cdot 10^{-19}$ | $3.705 \cdot 10^{-19}$ | 0 | $1.505 \cdot 10^{-36}$ | $1.505 \cdot 10^{-36}$ | 0 |
| cHl322 | $2.21 \cdot 10^{-21}$ | $2.21 \cdot 10^{-21}$ | 0 | $5.877 \cdot 10^{-39}$ | $5.877 \cdot 10^{-39}$ | 0 |
| ceWIm22 | $1.059 \cdot 10^{-22}$ | $1.059 \cdot 10^{-22}$ | 0 | 0.01273 | 0.01273 | 0 |
| ceWRe11 | $-3.01 \cdot 10^{-8}$ | $-3.01 \cdot 10^{-8}$ | 0 | 0.01257 | 0.01257 | 0 |
| ceWRe22 | $-6.225 \cdot 10^{-6}$ | $-6.225 \cdot 10^{-6}$ | 0 | 0.01257 | 0.01257 | 0 |
| cle1221 | $1.791 \cdot 10^{-9}$ | $1.791 \cdot 10^{-9}$ | 0 | 1 | 1 | 0 |
| cll1221 | 0.005833 | 0.005833 | 0 | 0.01368 | 0.01368 | 0 |
| sm | 0 | 0 | 0 | 0.04079 | 0.04079 | 0 |

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

| | | interference | | | square | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-0.002301$ | $-0.002301$ | 0 | 0.0002531 | 0.0002531 | 0 |
| cHWB | 0.0003354 | 0.0003354 | 0 | 0.000521 | 0.000521 | 0 |
| cHe11 | $-0.001255$ | $-0.001255$ | 0 | $8.536 \cdot 10^{-5}$ | $8.536 \cdot 10^{-5}$ | 0 |
| cHl111 | $-0.0005536$ | $-0.0005536$ | 0 | $1.884 \cdot 10^{-5}$ | $1.884 \cdot 10^{-5}$ | 0 |
| cHl311 | $6.335 \cdot 10^{-9}$ | $6.335 \cdot 10^{-9}$ | 0 | $2.322 \cdot 10^{-10}$ | $2.322 \cdot 10^{-10}$ | 0 |
| cHl322 | $-0.01914$ | $-0.01914$ | 0 | 0.0005802 | 0.0005802 | 0 |
| ceBIm11 | $-2.18 \cdot 10^{-22}$ | $-2.18 \cdot 10^{-22}$ | 0 | 0.0008839 | 0.0008839 | 0 |
| ceBRe11 | $3.451 \cdot 10^{-8}$ | $3.451 \cdot 10^{-8}$ | 0 | 0.006406 | 0.006406 | 0 |
| ceWRe11 | $-6.01 \cdot 10^{-9}$ | $-6.01 \cdot 10^{-9}$ | 0 | 0.00236 | 0.00236 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cle1111 | $-0.1213$ | $-0.1213$ | 0 | 1 | 1 | 0 |
| cll1111 | 1.927 | 1.927 | 0 | 2.848 | 2.848 | 0 |
| cll1221 | 0.0003433 | 0.0003433 | 0 | $5.204 \cdot 10^{-6}$ | $5.204 \cdot 10^{-6}$ | 0 |
| sm | 0 | 0 | 0 | 0.1062 | 0.1062 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| cHDD | $-0.006529$ | $-0.006529$ | 0 | 0.0004238 | 0.0004238 | 0 |
| cHWB | $-0.0105$ | $-0.0105$ | 0 | 0.001674 | 0.001674 | 0 |
| cHe11 | $-0.01905$ | $-0.01905$ | 0 | 0.003737 | 0.003737 | 0 |
| cHe33 | 0.001111 | 0.001111 | 0 | $5.758 \cdot 10^{-5}$ | $5.758 \cdot 10^{-5}$ | 0 |
| cHl111 | 0.001008 | 0.001008 | 0 | 0.0002088 | 0.0002088 | 0 |
| cHl133 | 0.01232 | 0.01232 | 0 | 0.0008574 | 0.0008574 | 0 |
| cHl311 | $-0.001488$ | $-0.001488$ | 0 | $7.459 \cdot 10^{-5}$ | $7.459 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.1049$ | $-0.1049$ | 0 | 0.003179 | 0.003179 | 0 |
| ceBIm11 | $-1.426 \cdot 10^{-14}$ | $-1.426 \cdot 10^{-14}$ | 0 | 0.3931 | 0.3931 | 0 |
| ceBIm33 | $2.23 \cdot 10^{-14}$ | $2.23 \cdot 10^{-14}$ | 0 | 0.04664 | 0.04664 | 0 |
| ceBRe11 | $9.51 \cdot 10^{-9}$ | $9.51 \cdot 10^{-9}$ | 0 | 0.02043 | 0.02043 | 0 |
| ceBRe33 | $-7.622 \cdot 10^{-5}$ | $-7.622 \cdot 10^{-5}$ | 0 | 0.06895 | 0.06895 | 0 |
| ceHIm11 | $-1.681 \cdot 10^{-20}$ | $-1.681 \cdot 10^{-20}$ | 0 | $8.14 \cdot 10^{-8}$ | $8.14 \cdot 10^{-8}$ | 0 |
| ceHIm33 | $2.122 \cdot 10^{-26}$ | $2.122 \cdot 10^{-26}$ | 0 | $6.731 \cdot 10^{-15}$ | $6.731 \cdot 10^{-15}$ | 0 |
| ceHRe11 | $-1.877 \cdot 10^{-11}$ | $-1.877 \cdot 10^{-11}$ | 0 | $8.112 \cdot 10^{-8}$ | $8.112 \cdot 10^{-8}$ | 0 |
| ceHRe33 | $-5.685 \cdot 10^{-15}$ | $-5.685 \cdot 10^{-15}$ | 0 | $6.658 \cdot 10^{-15}$ | $6.658 \cdot 10^{-15}$ | 0 |
| ceWIm33 | $4.334 \cdot 10^{-14}$ | $4.334 \cdot 10^{-14}$ | 0 | 0.01407 | 0.01407 | 0 |
| ceWRe11 | $1.388 \cdot 10^{-7}$ | $1.388 \cdot 10^{-7}$ | 0 | 0.2266 | 0.2266 | 0 |
| ceWRe33 | $7.313 \cdot 10^{-5}$ | $7.313 \cdot 10^{-5}$ | 0 | 0.05191 | 0.05191 | 0 |
| cee1133 | $-2.087$ | $-2.087$ | 0 | 0.8202 | 0.8202 | 0 |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cle1133 | $-0.6753$ | $-0.6753$ | 0 | 1 | 1 | 0 |
| cle1331 | $-1.746 \cdot 10^{-8}$ | $-1.746 \cdot 10^{-8}$ | 0 | 0.06872 | 0.06872 | 0 |
| cle3311 | $-0.1546$ | $-0.1546$ | 0 | 1 | 1 | 0 |
| cll1133 | $-0.02418$ | $-0.02418$ | 0 | 0.06576 | 0.06576 | 0 |
| cll1221 | $0.2929$ | $0.2929$ | 0 | 0.00444 | 0.00444 | 0 |
| cll1331 | $-0.06106$ | $-0.06106$ | 0 | 0.1399 | 0.1399 | 0 |
| sm | 0 | 0 | 0 | 0.0167 | 0.0167 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-0.002013$ | $-0.002013$ | 0 | 0.0001185 | 0.0001185 | 0 |
| cHWB | $-0.004287$ | $-0.004287$ | 0 | 0.0007247 | 0.0007247 | 0 |
| cHe11 | $0.0005235$ | $0.0005235$ | 0 | $2.006 \cdot 10^{-5}$ | $2.006 \cdot 10^{-5}$ | 0 |
| cHe22 | $-0.000664$ | $-0.000664$ | 0 | $1.073 \cdot 10^{-5}$ | $1.073 \cdot 10^{-5}$ | 0 |
| cHl111 | $-0.0001986$ | $-0.0001986$ | 0 | $9.394 \cdot 10^{-6}$ | $9.394 \cdot 10^{-6}$ | 0 |
| cHl122 | $-0.0004486$ | $-0.0004486$ | 0 | $1.378 \cdot 10^{-5}$ | $1.378 \cdot 10^{-5}$ | 0 |
| cHl311 | $-0.001405$ | $-0.001405$ | 0 | $3.813 \cdot 10^{-5}$ | $3.813 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.0009163$ | $-0.0009163$ | 0 | $3.931 \cdot 10^{-5}$ | $3.931 \cdot 10^{-5}$ | 0 |
| ceBIm11 | $2.709 \cdot 10^{-24}$ | $2.709 \cdot 10^{-24}$ | 0 | 0.001315 | 0.001315 | 0 |
| ceBIm22 | $1.01 \cdot 10^{-22}$ | $1.01 \cdot 10^{-22}$ | 0 | 0.0006948 | 0.0006948 | 0 |
| ceBRe11 | $3.655 \cdot 10^{-8}$ | $3.655 \cdot 10^{-8}$ | 0 | 0.009158 | 0.009158 | 0 |
| ceBRe22 | $4.73 \cdot 10^{-6}$ | $4.73 \cdot 10^{-6}$ | 0 | 0.0002494 | 0.0002494 | 0 |
| ceHIm11 | $-2.88 \cdot 10^{-31}$ | $-2.88 \cdot 10^{-31}$ | 0 | $3.493 \cdot 10^{-10}$ | $3.493 \cdot 10^{-10}$ | 0 |
| ceHIm22 | $-1.543 \cdot 10^{-32}$ | $-1.543 \cdot 10^{-32}$ | 0 | $8.169 \cdot 10^{-15}$ | $8.169 \cdot 10^{-15}$ | 0 |
| ceHRe11 | $-3.397 \cdot 10^{-14}$ | $-3.397 \cdot 10^{-14}$ | 0 | $3.493 \cdot 10^{-10}$ | $3.493 \cdot 10^{-10}$ | 0 |
| ceHRe22 | $-1.611 \cdot 10^{-16}$ | $-1.611 \cdot 10^{-16}$ | 0 | $8.169 \cdot 10^{-15}$ | $8.169 \cdot 10^{-15}$ | 0 |
| ceWIm22 | $-1.597 \cdot 10^{-22}$ | $-1.597 \cdot 10^{-22}$ | 0 | 0.00373 | 0.00373 | 0 |

| | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
|---|---|---|---|---|---|---|
| ceWRe11 | $-2.763 \cdot 10^{-8}$ | $-2.763 \cdot 10^{-8}$ | 0 | 0.004821 | 0.004821 | 0 |
| ceWRe22 | $-5.713 \cdot 10^{-6}$ | $-5.713 \cdot 10^{-6}$ | 0 | 0.004821 | 0.004821 | 0 |
| cee1122 | 0.05156 | 0.05156 | 0 | 0.2104 | 0.2104 | 0 |
| cle1122 | 0.002427 | 0.002427 | 0 | 0.01994 | 0.01994 | 0 |
| cle1221 | $3.554 \cdot 10^{-9}$ | $3.554 \cdot 10^{-9}$ | 0 | 2 | 2 | 0 |
| cle2211 | 0.05782 | 0.05782 | 0 | 0.4751 | 0.4751 | 0 |
| cll1122 | 0.03469 | 0.03469 | 0 | 0.1261 | 0.1261 | 0 |
| cll1221 | 0.0007914 | 0.0007914 | 0 | 0.001371 | 0.001371 | 0 |
| sm | 0 | 0 | 0 | 0.006772 | 0.006772 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| cHDD | $-0.00439$ | $-0.00439$ | 0 | 0.000298 | 0.000298 | 0 |
| cHWB | $-0.01181$ | $-0.01181$ | 0 | 0.001995 | 0.001995 | 0 |
| cHe11 | 0.002594 | 0.002594 | 0 | $9.753 \cdot 10^{-5}$ | $9.753 \cdot 10^{-5}$ | 0 |
| cHl111 | $-0.003388$ | $-0.003388$ | 0 | 0.0001507 | 0.0001507 | 0 |
| cHl311 | $-0.00437$ | $-0.00437$ | 0 | 0.0002631 | 0.0002631 | 0 |
| cHl322 | $-0.02474$ | $-0.02474$ | 0 | 0.00075 | 0.00075 | 0 |
| ceBIm11 | $-3.795 \cdot 10^{-22}$ | $-3.795 \cdot 10^{-22}$ | 0 | 0.07331 | 0.07331 | 0 |
| ceBRe11 | $1.311 \cdot 10^{-7}$ | $1.311 \cdot 10^{-7}$ | 0 | 0.05218 | 0.05218 | 0 |
| ceHIm11 | $-2.329 \cdot 10^{-24}$ | $-2.329 \cdot 10^{-24}$ | 0 | $6.104 \cdot 10^{-14}$ | $6.104 \cdot 10^{-14}$ | 0 |
| ceHRe11 | $5.279 \cdot 10^{-8}$ | $5.279 \cdot 10^{-8}$ | 0 | $9.382 \cdot 10^{-14}$ | $9.382 \cdot 10^{-14}$ | 0 |
| ceWRe11 | $-6.196 \cdot 10^{-9}$ | $-6.196 \cdot 10^{-9}$ | 0 | 0.1347 | 0.1347 | 0 |
| cee1111 | $-0.1786$ | $-0.1786$ | 0 | 3.425 | 3.425 | 0 |
| cle1111 | $-0.2046$ | $-0.2046$ | 0 | 3.076 | 3.076 | 0 |
| cll1111 | $-0.3455$ | $-0.3455$ | 0 | 4.509 | 4.509 | 0 |
| cll1221 | 0.001069 | 0.001069 | 0 | $1.62 \cdot 10^{-5}$ | $1.62 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | 0.02126 | 0.02126 | 0 |

## 1.69  $gg \to gg$

|  | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| cG | $8.154 \cdot 10^{-10}$ | $8.154 \cdot 10^{-10}$ | $1.496 \cdot 10^{-6}$ | | 102.5 | 102.5 | 0 |
| cGtil | $-5.677 \cdot 10^{-16}$ | $-5.371 \cdot 10^{-16}$ | 0.05397 | | 93.73 | 93.73 | 0 |
| cHGtil | $2.344 \cdot 10^{-18}$ | $2.344 \cdot 10^{-18}$ | 0 | | $7.433 \cdot 10^{-34}$ | $7.433 \cdot 10^{-34}$ | 0 |
| sm | 0 | 0 | 0 | | 60.52 | 60.52 | 0 |

## 1.70  $gg \to ggg$

|  | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| cG | 0.005935 | 0.005935 | 0 | | 0.05581 | 0.05581 | 0 |
| cGtil | $-0.005071$ | $-0.005071$ | 0 | | 0.01173 | 0.01173 | 0 |
| cHGtil | $-7.78 \cdot 10^{-15}$ | $-7.78 \cdot 10^{-15}$ | 0 | | $8.694 \cdot 10^{-26}$ | $8.694 \cdot 10^{-26}$ | 0 |
| sm | 0 | 0 | 0 | | 0.01209 | 0.01209 | 0 |

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

|  | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| cG | $-0.2439$ | $-0.2439$ | 0 | | 1.246 | 1.246 | 0 |
| cGtil | $-4.792 \cdot 10^{-17}$ | $-4.792 \cdot 10^{-17}$ | 0 | | 2.488 | 2.488 | 0 |
| cHG | $-0.09152$ | $-0.09152$ | 0 | | 0.04069 | 0.04069 | 0 |
| cHGtil | $2.602 \cdot 10^{-18}$ | $2.602 \cdot 10^{-18}$ | 0 | | 0.04069 | 0.04069 | 0 |
| ctGIm | $2.026 \cdot 10^{-18}$ | $2.026 \cdot 10^{-18}$ | 0 | | 0.08154 | 0.08154 | 0 |
| ctGRe | $-0.1508$ | $-0.1508$ | 0 | | 0.08894 | 0.08894 | 0 |
| sm | 0 | 0 | 0 | | 0.3876 | 0.3876 | 0 |

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

| | interference | | | | square | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cG | $4.128 \cdot 10^{-12}$ | $4.128 \cdot 10^{-12}$ | 0 | | 2.097 | 2.097 | 0 |
| cGtil | $1.309 \cdot 10^{-16}$ | $1.309 \cdot 10^{-16}$ | 0 | | 2.223 | 2.223 | 0 |
| cHG | $-1.194 \cdot 10^{-11}$ | $-1.194 \cdot 10^{-11}$ | 0 | | $7.223 \cdot 10^{-12}$ | $7.223 \cdot 10^{-12}$ | 0 |
| cHGtil | $1.377 \cdot 10^{-27}$ | $1.377 \cdot 10^{-27}$ | 0 | | $7.223 \cdot 10^{-12}$ | $7.223 \cdot 10^{-12}$ | 0 |
| cuGRe | $-2.586 \cdot 10^{-11}$ | $-2.586 \cdot 10^{-11}$ | $-7.347 \cdot 10^{-7}$ | | $1.273 \cdot 10^{-11}$ | $1.273 \cdot 10^{-11}$ | $-1.493 \cdot 10^{-6}$ |
| sm | 0 | 0 | 0 | | 0.9803 | 0.9803 | 0 |

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

| | interference | | | | square | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-3.041 \cdot 10^{-5}$ | $-3.041 \cdot 10^{-5}$ | 0 | | $1.931 \cdot 10^{-6}$ | $1.931 \cdot 10^{-6}$ | 0 |
| cHWB | 0.0001812 | 0.0001812 | 0 | | $1.79 \cdot 10^{-6}$ | $1.79 \cdot 10^{-6}$ | 0 |
| cHd | $-1.348 \cdot 10^{-5}$ | $-1.348 \cdot 10^{-5}$ | 0 | | $2.751 \cdot 10^{-6}$ | $2.751 \cdot 10^{-6}$ | 0 |
| cHj1 | 0.0001919 | 0.0001919 | 0 | | $6.831 \cdot 10^{-6}$ | $6.831 \cdot 10^{-6}$ | 0 |
| cHj3 | 0.0005309 | 0.0005309 | 0 | | $1.89 \cdot 10^{-5}$ | $1.89 \cdot 10^{-5}$ | 0 |
| cHl133 | $-0.0001758$ | $-0.0001758$ | 0 | | $5.33 \cdot 10^{-6}$ | $5.33 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.000289$ | $-0.000289$ | 0 | | $8.76 \cdot 10^{-6}$ | $8.76 \cdot 10^{-6}$ | 0 |
| cHl322 | $-0.0001576$ | $-0.0001576$ | 0 | | $4.778 \cdot 10^{-6}$ | $4.778 \cdot 10^{-6}$ | 0 |
| cdBIm | $-6.269 \cdot 10^{-25}$ | $-6.269 \cdot 10^{-25}$ | 0 | | $1.781 \cdot 10^{-10}$ | $1.781 \cdot 10^{-10}$ | $6.177 \cdot 10^{-7}$ |
| cdBRe | $-1.156 \cdot 10^{-10}$ | $-1.156 \cdot 10^{-10}$ | $3.46 \cdot 10^{-7}$ | | $1.64 \cdot 10^{-10}$ | $1.64 \cdot 10^{-10}$ | $6.099 \cdot 10^{-7}$ |
| cdWIm | $3.984 \cdot 10^{-25}$ | $3.984 \cdot 10^{-25}$ | 0 | | $2.289 \cdot 10^{-10}$ | $2.289 \cdot 10^{-10}$ | $6.117 \cdot 10^{-7}$ |
| cdWRe | $-2.159 \cdot 10^{-10}$ | $-2.159 \cdot 10^{-10}$ | $3.242 \cdot 10^{-7}$ | | $5.718 \cdot 10^{-10}$ | $5.718 \cdot 10^{-10}$ | $6.296 \cdot 10^{-7}$ |
| cld33 | 0.0001424 | 0.0001424 | 0 | | 0.003465 | 0.003465 | 0 |
| clj133 | $-0.05992$ | $-0.05992$ | 0 | | 0.2544 | 0.2544 | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| clj333 | 0.02416 | 0.02416 | 0 | 0.1026 | 0.1026 | 0 |
| cll1221 | 0.0001221 | 0.0001221 | 0 | $1.851 \cdot 10^{-6}$ | $1.851 \cdot 10^{-6}$ | 0 |
| sm | 0 | 0 | 0 | 0.0001925 | 0.0001925 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHDD | 0.003709 | 0.003709 | 0 | $1.28 \cdot 10^{-5}$ | $1.28 \cdot 10^{-5}$ | 0 |
| cHWB | 0.01073 | 0.01073 | 0 | 0.0001033 | 0.0001033 | 0 |
| cHd | 0.01297 | 0.01297 | 0 | 0.00188 | 0.00188 | 0 |
| cHj1 | $1.362 \cdot 10^{-5}$ | $1.362 \cdot 10^{-5}$ | 0 | $6.547 \cdot 10^{-6}$ | $6.547 \cdot 10^{-6}$ | 0 |
| cHj3 | $-0.08061$ | $-0.08061$ | 0 | 0.003362 | 0.003362 | 0 |
| cHl311 | 0.001287 | 0.001287 | 0 | $5.443 \cdot 10^{-6}$ | $5.443 \cdot 10^{-6}$ | 0 |
| cHl322 | 0.000379 | 0.000379 | 0 | $2.081 \cdot 10^{-6}$ | $2.081 \cdot 10^{-6}$ | 0 |
| cdBIm | $2.16 \cdot 10^{-23}$ | $2.169 \cdot 10^{-23}$ | $-0.004282$ | $2.469 \cdot 10^{-10}$ | $2.469 \cdot 10^{-10}$ | $6.481 \cdot 10^{-7}$ |
| cdBRe | $3.543 \cdot 10^{-9}$ | $3.543 \cdot 10^{-9}$ | $3.105 \cdot 10^{-7}$ | $2.679 \cdot 10^{-9}$ | $2.679 \cdot 10^{-9}$ | $6.346 \cdot 10^{-7}$ |
| cdGIm | $-2.036 \cdot 10^{-24}$ | $-1.251 \cdot 10^{-24}$ | 0.3855 | $5.698 \cdot 10^{-8}$ | $5.698 \cdot 10^{-8}$ | $6.318 \cdot 10^{-7}$ |
| cdGRe | $-2.362 \cdot 10^{-7}$ | $-2.362 \cdot 10^{-7}$ | $2.964 \cdot 10^{-7}$ | $1.419 \cdot 10^{-7}$ | $1.419 \cdot 10^{-7}$ | $6.34 \cdot 10^{-7}$ |
| cdHIm | $-1.178 \cdot 10^{-24}$ | $-8.903 \cdot 10^{-25}$ | 0.2445 | $3.973 \cdot 10^{-16}$ | $3.973 \cdot 10^{-16}$ | $6.293 \cdot 10^{-7}$ |
| cdHRe | $4.722 \cdot 10^{-8}$ | $4.722 \cdot 10^{-8}$ | $3.177 \cdot 10^{-7}$ | $6.954 \cdot 10^{-16}$ | $6.954 \cdot 10^{-16}$ | $6.184 \cdot 10^{-7}$ |
| cdWIm | $-2.239 \cdot 10^{-23}$ | $-1.958 \cdot 10^{-23}$ | 0.1256 | $7.073 \cdot 10^{-8}$ | $7.073 \cdot 10^{-8}$ | $6.362 \cdot 10^{-7}$ |
| cdWRe | $-1.561 \cdot 10^{-8}$ | $-1.561 \cdot 10^{-8}$ | $3.203 \cdot 10^{-7}$ | $1.678 \cdot 10^{-8}$ | $1.678 \cdot 10^{-8}$ | $5.96 \cdot 10^{-7}$ |
| cdd8 | $-0.09067$ | $-0.09067$ | $-9.927 \cdot 10^{-8}$ | 0.1836 | 0.1836 | $-2.179 \cdot 10^{-7}$ |
| cjd1 | 0.1304 | 0.1304 | 0 | 2.068 | 2.068 | 0 |
| cjd8 | $-1.002$ | $-1.002$ | 0 | 0.6965 | 0.6965 | 0 |
| cjj11 | $-0.06359$ | $-0.06359$ | 0 | 0.65 | 0.65 | 0 |
| cjj18 | $-0.3866$ | $-0.3866$ | 0 | 0.3552 | 0.3552 | $-2.815 \cdot 10^{-8}$ |
| cjj31 | $-4.068$ | $-4.068$ | 0 | 5.437 | 5.437 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cjj38 | $-0.7563$ | $-0.7563$ | $-9.256 \cdot 10^{-8}$ | 0.4801 | 0.4801 | $-1.875 \cdot 10^{-7}$ |
| cll1221 | $-0.01835$ | $-0.01835$ | 0 | 0.000112 | 0.000112 | 0 |
| sm | 0 | 0 | 0 | 6.847 | 6.847 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $8.215 \cdot 10^{-5}$ | $8.215 \cdot 10^{-5}$ | 0 | $8.462 \cdot 10^{-7}$ | $8.462 \cdot 10^{-7}$ | 0 |
| cHQ1 | $-0.0001068$ | $-0.0001068$ | 0 | $4.902 \cdot 10^{-6}$ | $4.902 \cdot 10^{-6}$ | 0 |
| cHQ3 | $0.0005294$ | $0.0005294$ | 0 | $2.313 \cdot 10^{-5}$ | $2.313 \cdot 10^{-5}$ | 0 |
| cHWB | $0.0001423$ | $0.0001423$ | 0 | $4.786 \cdot 10^{-6}$ | $4.786 \cdot 10^{-6}$ | 0 |
| cHl122 | $-5.288 \cdot 10^{-5}$ | $-5.288 \cdot 10^{-5}$ | 0 | $1.603 \cdot 10^{-6}$ | $1.603 \cdot 10^{-6}$ | 0 |
| cHl311 | $-5.182 \cdot 10^{-5}$ | $-5.182 \cdot 10^{-5}$ | 0 | $1.571 \cdot 10^{-6}$ | $1.571 \cdot 10^{-6}$ | 0 |
| cHl322 | $1.131 \cdot 10^{-20}$ | $1.131 \cdot 10^{-20}$ | 0 | $3.583 \cdot 10^{-36}$ | $3.583 \cdot 10^{-36}$ | 0 |
| cHt | $-1.051 \cdot 10^{-5}$ | $-1.051 \cdot 10^{-5}$ | 0 | $5.821 \cdot 10^{-7}$ | $5.821 \cdot 10^{-7}$ | 0 |
| cQl122 | $0.04128$ | $0.04128$ | 0 | $0.2165$ | $0.2165$ | 0 |
| cQl322 | $0.006924$ | $0.006924$ | 0 | $0.03982$ | $0.03982$ | 0 |
| cll1221 | $7.102 \cdot 10^{-5}$ | $7.102 \cdot 10^{-5}$ | 0 | $1.076 \cdot 10^{-6}$ | $1.076 \cdot 10^{-6}$ | 0 |
| ctBIm | $-4.63 \cdot 10^{-20}$ | $-4.63 \cdot 10^{-20}$ | 0 | $0.0001494$ | $0.0001494$ | 0 |
| ctWIm | $7.208 \cdot 10^{-20}$ | $7.208 \cdot 10^{-20}$ | 0 | $0.000705$ | $0.000705$ | 0 |
| ctWRe | $-0.002068$ | $-0.002068$ | 0 | $0.001466$ | $0.001466$ | 0 |
| ctl22 | $-0.0008741$ | $-0.0008741$ | 0 | $0.03417$ | $0.03417$ | 0 |
| sm | 0 | 0 | 0 | $0.001327$ | $0.001327$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| cHDD | $-0.000191$ | $-0.000191$ | 0 | $1.21 \cdot 10^{-5}$ | $1.21 \cdot 10^{-5}$ | 0 |
| cHQ1 | $-0.0001209$ | $-0.0001209$ | 0 | $3.49 \cdot 10^{-6}$ | $3.49 \cdot 10^{-6}$ | 0 |
| cHQ3 | $0.0001888$ | $0.0001888$ | 0 | $4.301 \cdot 10^{-6}$ | $4.301 \cdot 10^{-6}$ | 0 |
| cHWB | $-0.001107$ | $-0.001107$ | 0 | $9.683 \cdot 10^{-5}$ | $9.683 \cdot 10^{-5}$ | 0 |
| cHe33 | $6.375 \cdot 10^{-5}$ | $6.375 \cdot 10^{-5}$ | 0 | $8.57 \cdot 10^{-6}$ | $8.57 \cdot 10^{-6}$ | 0 |
| cHl133 | $0.0002751$ | $0.0002751$ | 0 | $6.892 \cdot 10^{-6}$ | $6.892 \cdot 10^{-6}$ | 0 |
| cHl311 | $-9.826 \cdot 10^{-5}$ | $-9.826 \cdot 10^{-5}$ | 0 | $2.979 \cdot 10^{-6}$ | $2.979 \cdot 10^{-6}$ | 0 |
| cHl322 | $-0.0004077$ | $-0.0004077$ | 0 | $1.236 \cdot 10^{-5}$ | $1.236 \cdot 10^{-5}$ | 0 |
| cHt | $0.0001943$ | $0.0001943$ | 0 | $4.677 \cdot 10^{-6}$ | $4.677 \cdot 10^{-6}$ | 0 |
| cQe33 | $-0.003271$ | $-0.003271$ | 0 | $0.04109$ | $0.04109$ | 0 |
| cQl133 | $-0.07866$ | $-0.07866$ | 0 | $0.3321$ | $0.3321$ | 0 |
| cQl333 | $0.02906$ | $0.02906$ | 0 | $0.1205$ | $0.1205$ | 0 |
| ceBIm33 | $-1.899 \cdot 10^{-20}$ | $-1.899 \cdot 10^{-20}$ | 0 | $0.001076$ | $0.001076$ | 0 |
| ceBRe33 | $-3.483 \cdot 10^{-5}$ | $-3.483 \cdot 10^{-5}$ | 0 | $0.0001106$ | $0.0001106$ | 0 |
| ceHIm33 | $-1.976 \cdot 10^{-21}$ | $-1.976 \cdot 10^{-21}$ | 0 | $0.0002929$ | $0.0002929$ | 0 |
| ceHRe33 | $-9.778 \cdot 10^{-5}$ | $-9.778 \cdot 10^{-5}$ | 0 | $0.0002929$ | $0.0002929$ | 0 |
| ceWIm33 | $-5.267 \cdot 10^{-20}$ | $-5.267 \cdot 10^{-20}$ | 0 | $0.0007184$ | $0.0007184$ | 0 |
| ceWRe33 | $-4.896 \cdot 10^{-5}$ | $-4.896 \cdot 10^{-5}$ | 0 | $0.001581$ | $0.001581$ | 0 |
| cleQt1Re33 | $0.003358$ | $0.003358$ | 0 | $0.1668$ | $0.1668$ | 0 |
| cleQt3Im33 | $1.326 \cdot 10^{-18}$ | $1.326 \cdot 10^{-18}$ | 0 | $2.65$ | $2.65$ | 0 |
| cleQt3Re33 | $0.01008$ | $0.01008$ | 0 | $1.51$ | $1.51$ | 0 |
| cll1221 | $0.0001036$ | $0.0001036$ | 0 | $1.57 \cdot 10^{-6}$ | $1.57 \cdot 10^{-6}$ | 0 |
| ctBIm | $3.036 \cdot 10^{-19}$ | $3.036 \cdot 10^{-19}$ | 0 | $0.002085$ | $0.002085$ | 0 |
| ctHIm | $-6.963 \cdot 10^{-24}$ | $-6.963 \cdot 10^{-24}$ | 0 | $3.492 \cdot 10^{-8}$ | $3.492 \cdot 10^{-8}$ | 0 |
| ctHRe | $-1.018 \cdot 10^{-6}$ | $-1.018 \cdot 10^{-6}$ | 0 | $3.099 \cdot 10^{-8}$ | $3.099 \cdot 10^{-8}$ | 0 |
| ctWIm | $1.338 \cdot 10^{-19}$ | $1.338 \cdot 10^{-19}$ | 0 | $0.0005875$ | $0.0005875$ | 0 |
| ctWRe | $-0.003103$ | $-0.003103$ | 0 | $0.000535$ | $0.000535$ | 0 |
| cte33 | $-0.02008$ | $-0.02008$ | 0 | $0.1205$ | $0.1205$ | 0 |
| ctl33 | $-0.02284$ | $-0.02284$ | 0 | $0.2528$ | $0.2528$ | 0 |

| sm | 0 | 0 | 0 | 0.001185 | 0.001185 | 0 |

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

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-0.0001274$ | $-0.0001274$ | 0 | $7.588 \cdot 10^{-6}$ | $7.588 \cdot 10^{-6}$ | 0 |
| cHQ1 | $-0.0003498$ | $-0.0003498$ | 0 | $1.14 \cdot 10^{-5}$ | $1.14 \cdot 10^{-5}$ | 0 |
| cHQ3 | $0.0004556$ | $0.0004556$ | 0 | $1.371 \cdot 10^{-5}$ | $1.371 \cdot 10^{-5}$ | 0 |
| cHWB | $-0.001109$ | $-0.001109$ | 0 | $9.83 \cdot 10^{-5}$ | $9.83 \cdot 10^{-5}$ | 0 |
| cHj1 | $-0.0004472$ | $-0.0004472$ | 0 | $1.283 \cdot 10^{-5}$ | $1.283 \cdot 10^{-5}$ | 0 |
| cHj3 | $5.69 \cdot 10^{-5}$ | $5.69 \cdot 10^{-5}$ | 0 | $5.413 \cdot 10^{-6}$ | $5.413 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.0003092$ | $-0.0003092$ | 0 | $9.372 \cdot 10^{-6}$ | $9.372 \cdot 10^{-6}$ | 0 |
| cHl322 | $-0.000449$ | $-0.000449$ | 0 | $1.361 \cdot 10^{-5}$ | $1.361 \cdot 10^{-5}$ | 0 |
| cHt | $-9.219 \cdot 10^{-5}$ | $-9.219 \cdot 10^{-5}$ | 0 | $1.881 \cdot 10^{-5}$ | $1.881 \cdot 10^{-5}$ | 0 |
| cQj11 | $0.02098$ | $0.02098$ | 0 | $0.09128$ | $0.09128$ | 0 |
| cQj18 | $0.04379$ | $0.04379$ | 0 | $0.008145$ | $0.008145$ | 0 |
| cQj31 | $0.1081$ | $0.1081$ | 0 | $0.4855$ | $0.4855$ | 0 |
| cQj38 | $0.0723$ | $0.0723$ | 0 | $0.01777$ | $0.01777$ | 0 |
| cQu1 | $0.01815$ | $0.01815$ | 0 | $0.5581$ | $0.5581$ | 0 |
| cQu8 | $0.1411$ | $0.1411$ | 0 | $0.041$ | $0.041$ | 0 |
| cjQtu1Im | $-3.884 \cdot 10^{-21}$ | $6.998 \cdot 10^{-22}$ | $1.18$ | $0.0001065$ | $0.0001065$ | $2.817 \cdot 10^{-7}$ |
| cjQtu1Re | $3.126 \cdot 10^{-5}$ | $3.126 \cdot 10^{-5}$ | $1.279 \cdot 10^{-7}$ | $0.0001065$ | $0.0001065$ | $2.817 \cdot 10^{-7}$ |
| cjQtu8Im | $-2.39 \cdot 10^{-21}$ | $-1.354 \cdot 10^{-21}$ | $0.4334$ | $2.367 \cdot 10^{-5}$ | $2.367 \cdot 10^{-5}$ | $2.957 \cdot 10^{-7}$ |
| cjQtu8Re | $4.669 \cdot 10^{-5}$ | $4.669 \cdot 10^{-5}$ | $1.499 \cdot 10^{-7}$ | $2.367 \cdot 10^{-5}$ | $2.367 \cdot 10^{-5}$ | $2.957 \cdot 10^{-7}$ |
| cll1221 | $0.0001046$ | $0.0001046$ | 0 | $1.585 \cdot 10^{-6}$ | $1.585 \cdot 10^{-6}$ | 0 |
| ctBIm | $5.374 \cdot 10^{-20}$ | $5.374 \cdot 10^{-20}$ | 0 | $0.0002726$ | $0.0002726$ | 0 |
| ctGIm | $-3.198 \cdot 10^{-23}$ | $-2.123 \cdot 10^{-23}$ | $0.3363$ | $0.02279$ | $0.02279$ | 0 |
| ctGRe | $-0.1986$ | $-0.1986$ | 0 | $0.0304$ | $0.0304$ | 0 |

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| ctHIm | $1.168 \cdot 10^{-22}$ | $1.305 \cdot 10^{-22}$ | $-0.1172$ | $5.351 \cdot 10^{-8}$ | $5.351 \cdot 10^{-8}$ | 0 |
| ctHRe | $-1.56 \cdot 10^{-6}$ | $-1.56 \cdot 10^{-6}$ | 0 | $4.749 \cdot 10^{-8}$ | $4.749 \cdot 10^{-8}$ | 0 |
| ctWIm | $-8.584 \cdot 10^{-18}$ | $-8.584 \cdot 10^{-18}$ | $-4.112 \cdot 10^{-6}$ | 0.003417 | 0.003417 | 0 |
| ctWRe | $-0.003434$ | $-0.003434$ | 0 | 0.006577 | 0.006577 | 0 |
| ctj1 | 0.01153 | 0.01153 | 0 | 0.1845 | 0.1845 | 0 |
| ctj8 | 0.3643 | 0.3643 | 0 | 0.1163 | 0.1163 | 0 |
| ctu1 | 0.07387 | 0.07387 | 0 | 0.6711 | 0.6711 | 0 |
| ctu8 | 0.257 | 0.257 | 0 | 0.08009 | 0.08009 | 0 |
| cuBIm | $7.836 \cdot 10^{-23}$ | $7.861 \cdot 10^{-23}$ | $-0.003152$ | $1.581 \cdot 10^{-7}$ | $1.581 \cdot 10^{-7}$ | $3.163 \cdot 10^{-7}$ |
| cuBRe | $3.111 \cdot 10^{-7}$ | $3.111 \cdot 10^{-7}$ | $1.286 \cdot 10^{-7}$ | $1.516 \cdot 10^{-7}$ | $1.516 \cdot 10^{-7}$ | $2.638 \cdot 10^{-7}$ |
| cuGRe | $-1.159 \cdot 10^{-5}$ | $-1.159 \cdot 10^{-5}$ | $8.631 \cdot 10^{-8}$ | $1.795 \cdot 10^{-6}$ | $1.795 \cdot 10^{-6}$ | $2.786 \cdot 10^{-7}$ |
| cuHIm | $-3.529 \cdot 10^{-23}$ | $-8.418 \cdot 10^{-23}$ | $-1.386$ | $4.676 \cdot 10^{-8}$ | $4.676 \cdot 10^{-8}$ | $2.78 \cdot 10^{-7}$ |
| cuHRe | $-1.538 \cdot 10^{-6}$ | $-1.538 \cdot 10^{-6}$ | $1.301 \cdot 10^{-7}$ | $4.676 \cdot 10^{-8}$ | $4.676 \cdot 10^{-8}$ | $2.78 \cdot 10^{-7}$ |
| cuWIm | $-6.905 \cdot 10^{-22}$ | $-6.843 \cdot 10^{-22}$ | 0.008954 | $3.477 \cdot 10^{-7}$ | $3.477 \cdot 10^{-7}$ | $2.876 \cdot 10^{-7}$ |
| sm | 0 | 0 | 0 | 0.6012 | 0.6012 | 0 |

## 1.78 $\quad t\bar{t} \to d\bar{d}$

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-3.436 \cdot 10^{-5}$ | $-3.436 \cdot 10^{-5}$ | 0 | $3.91 \cdot 10^{-6}$ | $3.91 \cdot 10^{-6}$ | 0 |
| cHQ1 | $-0.0002273$ | $-0.0002273$ | 0 | $8.916 \cdot 10^{-6}$ | $8.916 \cdot 10^{-6}$ | 0 |
| cHQ3 | 0.0001046 | 0.0001046 | 0 | $5.042 \cdot 10^{-6}$ | $5.042 \cdot 10^{-6}$ | 0 |
| cHWB | $-3.008 \cdot 10^{-5}$ | $-3.008 \cdot 10^{-5}$ | 0 | $1.516 \cdot 10^{-5}$ | $1.516 \cdot 10^{-5}$ | 0 |
| cHd | $-4.394 \cdot 10^{-5}$ | $-4.394 \cdot 10^{-5}$ | 0 | $6.283 \cdot 10^{-6}$ | $6.283 \cdot 10^{-6}$ | 0 |
| cHj1 | 0.0001184 | 0.0001184 | 0 | $5.405 \cdot 10^{-6}$ | $5.405 \cdot 10^{-6}$ | 0 |
| cHj3 | 0.0002492 | 0.0002492 | 0 | $8.206 \cdot 10^{-6}$ | $8.206 \cdot 10^{-6}$ | 0 |
| cHl311 | $-0.0009769$ | $-0.0009769$ | 0 | $2.961 \cdot 10^{-5}$ | $2.961 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.0004707$ | $-0.0004707$ | 0 | $1.427 \cdot 10^{-5}$ | $1.427 \cdot 10^{-5}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cHt | $0.0001507$ | $0.0001507$ | $0$ | $5 \cdot 10^{-5}$ | $5 \cdot 10^{-5}$ | $0$ |
| cQd8 | $0.3473$ | $0.3473$ | $0$ | $0.1106$ | $0.1106$ | $0$ |
| cQj11 | $-0.1748$ | $-0.1748$ | $0$ | $0.8453$ | $0.8453$ | $0$ |
| cQj18 | $0.08957$ | $0.08957$ | $0$ | $0.0236$ | $0.0236$ | $0$ |
| cQj31 | $0.00462$ | $0.00462$ | $0$ | $0.02622$ | $0.02622$ | $0$ |
| cQj38 | $-0.1521$ | $-0.1521$ | $0$ | $0.04468$ | $0.04468$ | $0$ |
| cQtjd1Im | $-1.13 \cdot 10^{-26}$ | $1.741 \cdot 10^{-26}$ | $2.541$ | $3.601 \cdot 10^{-10}$ | $3.601 \cdot 10^{-10}$ | $-1.166 \cdot 10^{-6}$ |
| cQtjd1Re | $-7.075 \cdot 10^{-10}$ | $-7.075 \cdot 10^{-10}$ | $-5.936 \cdot 10^{-7}$ | $3.601 \cdot 10^{-10}$ | $3.601 \cdot 10^{-10}$ | $-1.166 \cdot 10^{-6}$ |
| cQtjd8Im | $1.943 \cdot 10^{-28}$ | $1.262 \cdot 10^{-27}$ | $-5.493$ | $8.001 \cdot 10^{-11}$ | $8.001 \cdot 10^{-11}$ | $-1.175 \cdot 10^{-6}$ |
| cQtjd8Re | $2.012 \cdot 10^{-11}$ | $2.012 \cdot 10^{-11}$ | $-5.964 \cdot 10^{-7}$ | $8.001 \cdot 10^{-11}$ | $8.001 \cdot 10^{-11}$ | $-1.175 \cdot 10^{-6}$ |
| cdBIm | $4.448 \cdot 10^{-26}$ | $4.323 \cdot 10^{-26}$ | $0.02816$ | $2.068 \cdot 10^{-12}$ | $2.068 \cdot 10^{-12}$ | $-1.161 \cdot 10^{-6}$ |
| cdBRe | $-4.259 \cdot 10^{-12}$ | $-4.259 \cdot 10^{-12}$ | $-5.87 \cdot 10^{-7}$ | $2.038 \cdot 10^{-12}$ | $2.038 \cdot 10^{-12}$ | $-1.177 \cdot 10^{-6}$ |
| cdGIm | $2.149 \cdot 10^{-27}$ | $2.609 \cdot 10^{-27}$ | $-0.2142$ | $2.413 \cdot 10^{-11}$ | $2.413 \cdot 10^{-11}$ | $-1.16 \cdot 10^{-6}$ |
| cdGRe | $-1.567 \cdot 10^{-10}$ | $-1.567 \cdot 10^{-10}$ | $-6.383 \cdot 10^{-7}$ | $2.087 \cdot 10^{-11}$ | $2.087 \cdot 10^{-11}$ | $-1.198 \cdot 10^{-6}$ |
| cdHIm | $-2.382 \cdot 10^{-28}$ | $-2.607 \cdot 10^{-28}$ | $-0.09419$ | $6.323 \cdot 10^{-13}$ | $6.323 \cdot 10^{-13}$ | $-1.17 \cdot 10^{-6}$ |
| cdHRe | $-2.075 \cdot 10^{-11}$ | $-2.075 \cdot 10^{-11}$ | $-5.782 \cdot 10^{-7}$ | $6.323 \cdot 10^{-13}$ | $6.323 \cdot 10^{-13}$ | $-1.17 \cdot 10^{-6}$ |
| cdWIm | $4.633 \cdot 10^{-27}$ | $4.567 \cdot 10^{-27}$ | $0.01424$ | $4.624 \cdot 10^{-12}$ | $4.624 \cdot 10^{-12}$ | $-1.168 \cdot 10^{-6}$ |
| cdWRe | $2.067 \cdot 10^{-12}$ | $2.067 \cdot 10^{-12}$ | $-5.805 \cdot 10^{-7}$ | $3.671 \cdot 10^{-12}$ | $3.671 \cdot 10^{-12}$ | $-1.171 \cdot 10^{-6}$ |
| cjtQd1Im | $8.809 \cdot 10^{-28}$ | $5.584 \cdot 10^{-28}$ | $0.3661$ | $1.783 \cdot 10^{-10}$ | $1.783 \cdot 10^{-10}$ | $-1.178 \cdot 10^{-6}$ |
| cjtQd1Re | $-9.692 \cdot 10^{-11}$ | $-9.692 \cdot 10^{-11}$ | $-5.881 \cdot 10^{-7}$ | $2.71 \cdot 10^{-10}$ | $2.71 \cdot 10^{-10}$ | $-1.181 \cdot 10^{-6}$ |
| cjtQd8Im | $7.401 \cdot 10^{-27}$ | $4.152 \cdot 10^{-27}$ | $0.439$ | $4.9 \cdot 10^{-12}$ | $4.9 \cdot 10^{-12}$ | $-1.184 \cdot 10^{-6}$ |
| cjtQd8Re | $-2.374 \cdot 10^{-10}$ | $-2.374 \cdot 10^{-10}$ | $-5.897 \cdot 10^{-7}$ | $3.977 \cdot 10^{-11}$ | $3.977 \cdot 10^{-11}$ | $-1.182 \cdot 10^{-6}$ |
| cll1221 | $0.0003183$ | $0.0003183$ | $0$ | $4.823 \cdot 10^{-6}$ | $4.823 \cdot 10^{-6}$ | $0$ |
| ctBIm | $-1.602 \cdot 10^{-18}$ | $-1.602 \cdot 10^{-18}$ | $7.365 \cdot 10^{-6}$ | $0.0008292$ | $0.0008292$ | $0$ |
| ctGIm | $3.927 \cdot 10^{-29}$ | $3.909 \cdot 10^{-29}$ | $0.004464$ | $0.03721$ | $0.03721$ | $0$ |
| ctGRe | $-0.1986$ | $-0.1986$ | $0$ | $0.0414$ | $0.0414$ | $0$ |
| ctHIm | $5.077 \cdot 10^{-28}$ | $1.711 \cdot 10^{-28}$ | $0.663$ | $7.236 \cdot 10^{-13}$ | $7.236 \cdot 10^{-13}$ | $0$ |
| ctHRe | $-2.106 \cdot 10^{-11}$ | $-2.106 \cdot 10^{-11}$ | $0$ | $6.421 \cdot 10^{-13}$ | $6.421 \cdot 10^{-13}$ | $0$ |
| ctWIm | $1.139 \cdot 10^{-20}$ | $1.127 \cdot 10^{-20}$ | $0.01033$ | $0.005232$ | $0.005232$ | $0$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| ctWRe | 0.0007639 | 0.0007639 | 0 | 0.001807 | 0.001807 | 0 |
| ctd1 | $-0.04642$ | $-0.04642$ | 0 | 0.8453 | 0.8453 | 0 |
| ctd8 | 0.1193 | 0.1193 | 0 | 0.03362 | 0.03362 | 0 |
| ctj1 | 0.009133 | 0.009133 | 0 | 0.5525 | 0.5525 | 0 |
| ctj8 | 0.6656 | 0.6656 | 0 | 0.218 | 0.218 | 0 |
| sm | 0 | 0 | 0 | 0.5803 | 0.5803 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-6.732 \cdot 10^{-5}$ | $-6.732 \cdot 10^{-5}$ | 0 | $1.056 \cdot 10^{-5}$ | $1.056 \cdot 10^{-5}$ | 0 |
| cHQ1 | $-0.0007236$ | $-0.0007236$ | 0 | $2.536 \cdot 10^{-5}$ | $2.536 \cdot 10^{-5}$ | 0 |
| cHQ3 | 0.000781 | 0.000781 | 0 | $2.73 \cdot 10^{-5}$ | $2.73 \cdot 10^{-5}$ | 0 |
| cHWB | $-2.811 \cdot 10^{-5}$ | $-2.811 \cdot 10^{-5}$ | 0 | $1.713 \cdot 10^{-5}$ | $1.713 \cdot 10^{-5}$ | 0 |
| cHd | $-5.851 \cdot 10^{-5}$ | $-5.851 \cdot 10^{-5}$ | 0 | $5.468 \cdot 10^{-6}$ | $5.468 \cdot 10^{-6}$ | 0 |
| cHj1 | 0.0006384 | 0.0006384 | 0 | $1.819 \cdot 10^{-5}$ | $1.819 \cdot 10^{-5}$ | 0 |
| cHj3 | 0.001157 | 0.001157 | 0 | $3.254 \cdot 10^{-5}$ | $3.254 \cdot 10^{-5}$ | 0 |
| cHl311 | $-0.0009707$ | $-0.0009707$ | 0 | $2.942 \cdot 10^{-5}$ | $2.942 \cdot 10^{-5}$ | 0 |
| cHl322 | $-0.0009204$ | $-0.0009204$ | 0 | $2.79 \cdot 10^{-5}$ | $2.79 \cdot 10^{-5}$ | 0 |
| cHt | $1.204 \cdot 10^{-5}$ | $1.204 \cdot 10^{-5}$ | 0 | $2.64 \cdot 10^{-6}$ | $2.64 \cdot 10^{-6}$ | 0 |
| cQd8 | 0.5148 | 0.5148 | 0 | 0.1671 | 0.1671 | 0 |
| cQj11 | $-0.05897$ | $-0.05897$ | 0 | 0.2878 | 0.2878 | 0 |
| cQj18 | 0.4986 | 0.4986 | 0 | 0.1616 | 0.1616 | 0 |
| cQj31 | 0.000257 | 0.000257 | 0 | 0.005224 | 0.005224 | 0 |
| cQj38 | $-0.6528$ | $-0.6528$ | 0 | 0.2137 | 0.2137 | 0 |
| cQtjd1Im | $6.738 \cdot 10^{-24}$ | $6.74 \cdot 10^{-24}$ | $-0.0004263$ | $1.428 \cdot 10^{-7}$ | $1.428 \cdot 10^{-7}$ | $7.003 \cdot 10^{-7}$ |
| cQtjd1Re | $-2.819 \cdot 10^{-7}$ | $-2.819 \cdot 10^{-7}$ | $3.193 \cdot 10^{-7}$ | $1.428 \cdot 10^{-7}$ | $1.428 \cdot 10^{-7}$ | $6.303 \cdot 10^{-7}$ |
| cQtjd8Im | $2.255 \cdot 10^{-24}$ | $-3.625 \cdot 10^{-25}$ | $1.161$ | $3.173 \cdot 10^{-8}$ | $3.173 \cdot 10^{-8}$ | $6.303 \cdot 10^{-7}$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| cQtjd8Re | $1.001 \cdot 10^{-8}$ | $1.001 \cdot 10^{-8}$ | $2.998 \cdot 10^{-7}$ | $3.173 \cdot 10^{-8}$ | $3.173 \cdot 10^{-8}$ | $6.303 \cdot 10^{-7}$ |
| cdBIm | $2.838 \cdot 10^{-24}$ | $2.891 \cdot 10^{-24}$ | $-0.01893$ | $8.437 \cdot 10^{-10}$ | $8.437 \cdot 10^{-10}$ | $6.282 \cdot 10^{-7}$ |
| cdBRe | $4.197 \cdot 10^{-10}$ | $4.197 \cdot 10^{-10}$ | $3.097 \cdot 10^{-7}$ | $1.029 \cdot 10^{-9}$ | $1.029 \cdot 10^{-9}$ | $5.833 \cdot 10^{-7}$ |
| cdGIm | $7.338 \cdot 10^{-25}$ | $4.379 \cdot 10^{-25}$ | $0.4033$ | $1.208 \cdot 10^{-8}$ | $1.208 \cdot 10^{-8}$ | $6.622 \cdot 10^{-7}$ |
| cdGRe | $-6.213 \cdot 10^{-8}$ | $-6.213 \cdot 10^{-8}$ | $3.219 \cdot 10^{-7}$ | $1.048 \cdot 10^{-8}$ | $1.048 \cdot 10^{-8}$ | $6.676 \cdot 10^{-7}$ |
| cdHIm | $-1.391 \cdot 10^{-25}$ | $-4.145 \cdot 10^{-25}$ | $-1.98$ | $2.507 \cdot 10^{-10}$ | $2.507 \cdot 10^{-10}$ | $6.381 \cdot 10^{-7}$ |
| cdHRe | $-8.23 \cdot 10^{-9}$ | $-8.23 \cdot 10^{-9}$ | $3.159 \cdot 10^{-7}$ | $2.507 \cdot 10^{-10}$ | $2.507 \cdot 10^{-10}$ | $6.381 \cdot 10^{-7}$ |
| cdWIm | $-3.745 \cdot 10^{-25}$ | $-3.734 \cdot 10^{-25}$ | $0.00276$ | $2.485 \cdot 10^{-10}$ | $2.485 \cdot 10^{-10}$ | $6.036 \cdot 10^{-7}$ |
| cdWRe | $-1.308 \cdot 10^{-9}$ | $-1.308 \cdot 10^{-9}$ | $3.822 \cdot 10^{-7}$ | $1.867 \cdot 10^{-9}$ | $1.867 \cdot 10^{-9}$ | $6.428 \cdot 10^{-7}$ |
| cjtQd1Im | $-2.539 \cdot 10^{-24}$ | $-3.023 \cdot 10^{-24}$ | $-0.1909$ | $4.47 \cdot 10^{-9}$ | $4.47 \cdot 10^{-9}$ | $6.488 \cdot 10^{-7}$ |
| cjtQd1Re | $-4.503 \cdot 10^{-8}$ | $-4.503 \cdot 10^{-8}$ | $3.331 \cdot 10^{-7}$ | $1.308 \cdot 10^{-7}$ | $1.308 \cdot 10^{-7}$ | $6.88 \cdot 10^{-7}$ |
| cjtQd8Im | $8.348 \cdot 10^{-25}$ | $3.206 \cdot 10^{-24}$ | $-2.841$ | $2.386 \cdot 10^{-8}$ | $2.386 \cdot 10^{-8}$ | $6.288 \cdot 10^{-7}$ |
| cjtQd8Re | $-1.155 \cdot 10^{-7}$ | $-1.155 \cdot 10^{-7}$ | $3.463 \cdot 10^{-7}$ | $2.384 \cdot 10^{-8}$ | $2.384 \cdot 10^{-8}$ | $6.291 \cdot 10^{-7}$ |
| cll1221 | $0.0003771$ | $0.0003771$ | $0$ | $5.715 \cdot 10^{-6}$ | $5.715 \cdot 10^{-6}$ | $0$ |
| ctBIm | $-1.114 \cdot 10^{-19}$ | $-1.115 \cdot 10^{-19}$ | $-0.0004223$ | $0.0004633$ | $0.0004633$ | $0$ |
| ctGIm | $2.866 \cdot 10^{-24}$ | $2.909 \cdot 10^{-24}$ | $-0.01503$ | $0.02941$ | $0.02941$ | $0$ |
| ctGRe | $-0.1986$ | $-0.1986$ | $0$ | $0.02887$ | $0.02887$ | $0$ |
| ctHIm | $-7.754 \cdot 10^{-25}$ | $-8.013 \cdot 10^{-25}$ | $-0.03334$ | $2.87 \cdot 10^{-10}$ | $2.87 \cdot 10^{-10}$ | $0$ |
| ctHRe | $-8.303 \cdot 10^{-9}$ | $-8.303 \cdot 10^{-9}$ | $0$ | $2.547 \cdot 10^{-10}$ | $2.547 \cdot 10^{-10}$ | $0$ |
| ctWIm | $3.095 \cdot 10^{-19}$ | $3.095 \cdot 10^{-19}$ | $-7.602 \cdot 10^{-5}$ | $0.003175$ | $0.003175$ | $0$ |
| ctWRe | $-0.006866$ | $-0.006866$ | $0$ | $0.004638$ | $0.004638$ | $0$ |
| ctd1 | $-0.01607$ | $-0.01607$ | $0$ | $0.2878$ | $0.2878$ | $0$ |
| ctd8 | $0.4092$ | $0.4092$ | $0$ | $0.1315$ | $0.1315$ | $0$ |
| ctj1 | $-0.003706$ | $-0.003706$ | $0$ | $0.08992$ | $0.08992$ | $0$ |
| ctj8 | $0.03897$ | $0.03897$ | $0$ | $0.00652$ | $0.00652$ | $0$ |
| sm | $0$ | $0$ | $0$ | $0.6182$ | $0.6182$ | $0$ |

**1.80** $\quad t\bar{t} \to t\bar{t}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| cHDD | 0.04546 | 0.04546 | 0 | 0.0009097 | 0.0009097 | 0 |
| cHQ1 | 0.03896 | 0.03896 | 0 | 0.008544 | 0.008544 | 0 |
| cHQ3 | $-0.1312$ | $-0.1312$ | 0 | 0.009042 | 0.009042 | 0 |
| cHWB | 0.03003 | 0.03003 | 0 | 0.0006622 | 0.0006622 | 0 |
| cHl311 | 0.048 | 0.048 | 0 | 0.00354 | 0.00354 | 0 |
| cHl322 | 0.08841 | 0.08841 | 0 | 0.003665 | 0.003665 | 0 |
| cHt | $-0.09372$ | $-0.09372$ | 0 | 0.009373 | 0.009373 | 0 |
| cQQ1 | $-33.89$ | $-33.89$ | 0 | 28.92 | 28.92 | 0 |
| cQQ8 | $-8.202$ | $-8.202$ | $-1.219\cdot10^{-8}$ | 3 | 3 | 0 |
| cQt1 | $-0.9112$ | $-0.9112$ | 0 | 7.661 | 7.661 | 0 |
| cQt8 | $-14.72$ | $-14.72$ | 0 | 1.587 | 1.587 | 0 |
| cll1221 | $-0.2091$ | $-0.2091$ | 0 | 0.001453 | 0.001453 | 0 |
| ctBIm | $\color{blue}{2.422\cdot10^{-17}}$ | $\color{blue}{2.37\cdot10^{-17}}$ | $\color{blue}{0.02179}$ | 0.1502 | 0.1502 | 0 |
| ctGIm | $\color{blue}{-2.812\cdot10^{-17}}$ | $\color{blue}{-2.901\cdot10^{-17}}$ | $\color{blue}{-0.03171}$ | 1.709 | 1.709 | 0 |
| ctGRe | $-0.1779$ | $-0.1779$ | 0 | 0.5408 | 0.5408 | 0 |
| ctHIm | $\color{blue}{-1.622\cdot10^{-18}}$ | $\color{blue}{-1.87\cdot10^{-18}}$ | $\color{blue}{-0.1532}$ | 0.005029 | 0.005029 | 0 |
| ctHRe | 0.2523 | 0.2523 | 0 | 0.009769 | 0.009769 | 0 |
| ctWIm | $\color{red}{1.473\cdot10^{-16}}$ | $\color{red}{1.481\cdot10^{-16}}$ | $\color{red}{-0.004962}$ | 0.1316 | 0.1316 | 0 |
| ctWRe | 0.193 | 0.193 | 0 | 0.1799 | 0.1799 | 0 |
| ctt | $-0.3645$ | $-0.3645$ | 0 | 4.526 | 4.526 | 0 |
| sm | 0 | 0 | 0 | 1.555 | 1.555 | 0 |

**1.81** $\quad u\bar{d} \to \mu^+\nu_\mu$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| cHj3 | $2.861\cdot10^{-5}$ | $2.861\cdot10^{-5}$ | 0 | $8.673\cdot10^{-7}$ | $8.673\cdot10^{-7}$ | 0 |

| | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
|---|---|---|---|---|---|---|
| cHl311 | $-0.000267$ | $-0.000267$ | $0$ | $8.093 \cdot 10^{-6}$ | $8.093 \cdot 10^{-6}$ | $0$ |
| cHl322 | $4.923 \cdot 10^{-23}$ | $4.923 \cdot 10^{-23}$ | $0$ | $1.224 \cdot 10^{-40}$ | $1.224 \cdot 10^{-40}$ | $0$ |
| cHudIm | $-2.607 \cdot 10^{-40}$ | $-7.081 \cdot 10^{-39}$ | $-26.16$ | $2.16 \cdot 10^{-25}$ | $2.16 \cdot 10^{-25}$ | $-2.685 \cdot 10^{-6}$ |
| cHudRe | $-3.123 \cdot 10^{-24}$ | $-3.123 \cdot 10^{-24}$ | $-1.345 \cdot 10^{-6}$ | $4.523 \cdot 10^{-26}$ | $4.523 \cdot 10^{-26}$ | $-2.675 \cdot 10^{-6}$ |
| cdWIm | $1.121 \cdot 10^{-29}$ | $-1.027 \cdot 10^{-29}$ | $1.916$ | $1.364 \cdot 10^{-12}$ | $1.364 \cdot 10^{-12}$ | $-1.173 \cdot 10^{-6}$ |
| cdWRe | $-1.596 \cdot 10^{-12}$ | $-1.596 \cdot 10^{-12}$ | $-5.639 \cdot 10^{-7}$ | $2.986 \cdot 10^{-12}$ | $2.986 \cdot 10^{-12}$ | $-1.172 \cdot 10^{-6}$ |
| ceWIm22 | $-2.351 \cdot 10^{-23}$ | $-2.351 \cdot 10^{-23}$ | $0$ | $0.004355$ | $0.004355$ | $0$ |
| ceWRe22 | $-1.819 \cdot 10^{-6}$ | $-1.819 \cdot 10^{-6}$ | $0$ | $0.004352$ | $0.004352$ | $0$ |
| cledjIm22 | $1.227 \cdot 10^{-17}$ | $1.227 \cdot 10^{-17}$ | $-5.707 \cdot 10^{-7}$ | $5.996 \cdot 10^{-11}$ | $5.996 \cdot 10^{-11}$ | $-1.168 \cdot 10^{-6}$ |
| cledjRe22 | $-7.304 \cdot 10^{-14}$ | $-7.304 \cdot 10^{-14}$ | $-5.888 \cdot 10^{-7}$ | $5.996 \cdot 10^{-11}$ | $5.996 \cdot 10^{-11}$ | $-1.184 \cdot 10^{-6}$ |
| cleju1Im22 | $-2.63 \cdot 10^{-18}$ | $-2.63 \cdot 10^{-18}$ | $-7.224 \cdot 10^{-7}$ | $1.283 \cdot 10^{-11}$ | $1.283 \cdot 10^{-11}$ | $-1.481 \cdot 10^{-6}$ |
| cleju1Re22 | $1.558 \cdot 10^{-14}$ | $1.558 \cdot 10^{-14}$ | $-7.06 \cdot 10^{-7}$ | $1.283 \cdot 10^{-11}$ | $1.283 \cdot 10^{-11}$ | $-1.481 \cdot 10^{-6}$ |
| cleju3Im22 | $5.608 \cdot 10^{-18}$ | $5.608 \cdot 10^{-18}$ | $-7.311 \cdot 10^{-7}$ | $6.451 \cdot 10^{-11}$ | $6.451 \cdot 10^{-11}$ | $-1.442 \cdot 10^{-6}$ |
| cleju3Re22 | $-1.573 \cdot 10^{-15}$ | $-1.573 \cdot 10^{-15}$ | $-6.991 \cdot 10^{-7}$ | $4.224 \cdot 10^{-13}$ | $4.224 \cdot 10^{-13}$ | $-1.444 \cdot 10^{-6}$ |
| clj322 | $0.04479$ | $0.04479$ | $0$ | $0.2088$ | $0.2088$ | $0$ |
| cll1221 | $0.0001759$ | $0.0001759$ | $0$ | $2.666 \cdot 10^{-6}$ | $2.666 \cdot 10^{-6}$ | $0$ |
| cuWIm | $6.254 \cdot 10^{-28}$ | $6.019 \cdot 10^{-28}$ | $0.03762$ | $6.277 \cdot 10^{-13}$ | $6.277 \cdot 10^{-13}$ | $-1.45 \cdot 10^{-6}$ |
| sm | $0$ | $0$ | $0$ | $0.01322$ | $0.01322$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| cHj3 | $0.007146$ | $0.007146$ | $0$ | $0.0004332$ | $0.0004332$ | $0$ |
| cHl311 | $-0.001461$ | $-0.001461$ | $0$ | $4.428 \cdot 10^{-5}$ | $4.428 \cdot 10^{-5}$ | $0$ |
| cHl322 | $-7.447 \cdot 10^{-5}$ | $-7.447 \cdot 10^{-5}$ | $0$ | $2.257 \cdot 10^{-6}$ | $2.257 \cdot 10^{-6}$ | $0$ |
| cHudIm | $2.74 \cdot 10^{-33}$ | $-5.478 \cdot 10^{-33}$ | $2.999$ | $2.183 \cdot 10^{-18}$ | $2.183 \cdot 10^{-18}$ | $9.619 \cdot 10^{-7}$ |
| cHudRe | $-1.285 \cdot 10^{-15}$ | $-1.285 \cdot 10^{-15}$ | $4.671 \cdot 10^{-7}$ | $2.21 \cdot 10^{-16}$ | $2.21 \cdot 10^{-16}$ | $9.501 \cdot 10^{-7}$ |
| cdWIm | $-2.783 \cdot 10^{-25}$ | $8.927 \cdot 10^{-26}$ | $1.321$ | $2.397 \cdot 10^{-9}$ | $2.397 \cdot 10^{-9}$ | $6.259 \cdot 10^{-7}$ |
| cdWRe | $-4.489 \cdot 10^{-10}$ | $-4.489 \cdot 10^{-10}$ | $3.119 \cdot 10^{-7}$ | $1.249 \cdot 10^{-9}$ | $1.249 \cdot 10^{-9}$ | $6.406 \cdot 10^{-7}$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| cjj31 | $1.156$ | $1.156$ | $0$ | $10.77$ | $10.77$ | $0$ |
| cjj38 | $-4.669 \cdot 10^{-8}$ | $1.802 \cdot 10^{-17}$ | $1$ | $2.901$ | $2.901$ | $0$ |
| cjujd11Im | $-1.506 \cdot 10^{-19}$ | $-1.506 \cdot 10^{-19}$ | $-2.656 \cdot 10^{-7}$ | $1.567 \cdot 10^{-16}$ | $1.567 \cdot 10^{-16}$ | $-5.743 \cdot 10^{-7}$ |
| cjujd11Re | $-3.341 \cdot 10^{-15}$ | $-3.341 \cdot 10^{-15}$ | $-2.993 \cdot 10^{-7}$ | $2.526 \cdot 10^{-15}$ | $2.526 \cdot 10^{-15}$ | $-5.939 \cdot 10^{-7}$ |
| cjujd1Re | $-1.922 \cdot 10^{-14}$ | $-1.922 \cdot 10^{-14}$ | $-3.122 \cdot 10^{-7}$ | $9.582 \cdot 10^{-15}$ | $9.582 \cdot 10^{-15}$ | $-5.949 \cdot 10^{-7}$ |
| cjujd81Im | $-1.04 \cdot 10^{-18}$ | $-1.04 \cdot 10^{-18}$ | $-2.885 \cdot 10^{-7}$ | $1.095 \cdot 10^{-15}$ | $1.095 \cdot 10^{-15}$ | $-5.479 \cdot 10^{-7}$ |
| cjujd81Re | $-7.796 \cdot 10^{-15}$ | $-7.796 \cdot 10^{-15}$ | $-2.95 \cdot 10^{-7}$ | $1.756 \cdot 10^{-15}$ | $1.756 \cdot 10^{-15}$ | $-6.263 \cdot 10^{-7}$ |
| cjujd8Im | $8.765 \cdot 10^{-32}$ | $4.631 \cdot 10^{-32}$ | $0.4717$ | $2.129 \cdot 10^{-15}$ | $2.129 \cdot 10^{-15}$ | $-5.636 \cdot 10^{-7}$ |
| cjujd8Re | $-3.51 \cdot 10^{-31}$ | $-3.14 \cdot 10^{-39}$ | $1$ | $2.129 \cdot 10^{-15}$ | $2.129 \cdot 10^{-15}$ | $-6.105 \cdot 10^{-7}$ |
| cll1221 | $0.0001913$ | $0.0001913$ | $0$ | $2.9 \cdot 10^{-6}$ | $2.9 \cdot 10^{-6}$ | $0$ |
| cuWIm | $-1.471 \cdot 10^{-24}$ | $-2.647 \cdot 10^{-23}$ | $-17$ | $1.53 \cdot 10^{-7}$ | $1.53 \cdot 10^{-7}$ | $3.268 \cdot 10^{-7}$ |
| sm | $0$ | $0$ | $0$ | $0.02478$ | $0.02478$ | $0$ |

## 1.83 $u\bar{d} \to u\bar{d}$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| cHDD | $-0.01057$ | $-0.01057$ | $0$ | $0.0009395$ | $0.0009395$ | $0$ |
| cHWB | $-0.0002551$ | $-0.0002551$ | $0$ | $0.0001295$ | $0.0001295$ | $0$ |
| cHd | $0.000127$ | $0.000127$ | $0$ | $5.927 \cdot 10^{-5}$ | $5.927 \cdot 10^{-5}$ | $0$ |
| cHj1 | $-2.114 \cdot 10^{-5}$ | $-2.114 \cdot 10^{-5}$ | $0$ | $3.185 \cdot 10^{-5}$ | $3.185 \cdot 10^{-5}$ | $0$ |
| cHj3 | $-0.02061$ | $-0.02061$ | $0$ | $0.0213$ | $0.0213$ | $0$ |
| cHl311 | $0.0009916$ | $0.0009916$ | $0$ | $2.725 \cdot 10^{-5}$ | $2.725 \cdot 10^{-5}$ | $0$ |
| cHl322 | $0.0242$ | $0.0242$ | $0$ | $0.0009144$ | $0.0009144$ | $0$ |
| cHudIm | $-1.663 \cdot 10^{-36}$ | $-1.908 \cdot 10^{-36}$ | $-0.1472$ | $1.57 \cdot 10^{-24}$ | $1.57 \cdot 10^{-24}$ | $-2.675 \cdot 10^{-6}$ |
| cHudRe | $-1.773 \cdot 10^{-20}$ | $-1.773 \cdot 10^{-20}$ | $-1.297 \cdot 10^{-6}$ | $2.283 \cdot 10^{-24}$ | $2.283 \cdot 10^{-24}$ | $-2.672 \cdot 10^{-6}$ |
| cdBIm | $-2.57 \cdot 10^{-26}$ | $-2.57 \cdot 10^{-26}$ | $-5.058 \cdot 10^{-6}$ | $1.031 \cdot 10^{-11}$ | $1.031 \cdot 10^{-11}$ | $-1.164 \cdot 10^{-6}$ |
| cdBRe | $-2.541 \cdot 10^{-11}$ | $-2.541 \cdot 10^{-11}$ | $-5.904 \cdot 10^{-7}$ | $9.482 \cdot 10^{-11}$ | $9.482 \cdot 10^{-11}$ | $-1.171 \cdot 10^{-6}$ |
| cdGIm | $1.921 \cdot 10^{-25}$ | $1.921 \cdot 10^{-25}$ | $8.226 \cdot 10^{-6}$ | $1.094 \cdot 10^{-9}$ | $1.094 \cdot 10^{-9}$ | $-1.188 \cdot 10^{-6}$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| cdGRe | $-1.481 \cdot 10^{-10}$ | $-1.481 \cdot 10^{-10}$ | $-6.075 \cdot 10^{-7}$ | $7.983 \cdot 10^{-11}$ | $7.983 \cdot 10^{-11}$ | $-1.165 \cdot 10^{-6}$ |
| cdHIm | $\color{blue}{2.063 \cdot 10^{-36}}$ | $\color{blue}{2.109 \cdot 10^{-36}}$ | $\color{blue}{-0.02212}$ | $9.863 \cdot 10^{-23}$ | $9.863 \cdot 10^{-23}$ | $-1.166 \cdot 10^{-6}$ |
| cdHRe | $-2.027 \cdot 10^{-21}$ | $-2.027 \cdot 10^{-21}$ | $-5.921 \cdot 10^{-7}$ | $9.746 \cdot 10^{-23}$ | $9.746 \cdot 10^{-23}$ | $-1.17 \cdot 10^{-6}$ |
| cdWIm | $\color{blue}{1.556 \cdot 10^{-24}}$ | $\color{blue}{1.55 \cdot 10^{-24}}$ | $\color{blue}{0.003649}$ | $1.685 \cdot 10^{-10}$ | $1.685 \cdot 10^{-10}$ | $-1.187 \cdot 10^{-6}$ |
| cdWRe | $1.031 \cdot 10^{-9}$ | $1.031 \cdot 10^{-9}$ | $-5.819 \cdot 10^{-7}$ | $1.429 \cdot 10^{-10}$ | $1.429 \cdot 10^{-10}$ | $-1.189 \cdot 10^{-6}$ |
| cjd1 | $0.2004$ | $0.2004$ | $0$ | $1$ | $1$ | $0$ |
| cjd8 | $-0.6607$ | $-0.6607$ | $0$ | $0.2222$ | $0.2222$ | $0$ |
| cjj11 | $7.881 \cdot 10^{-6}$ | $7.881 \cdot 10^{-6}$ | $0$ | $4.519 \cdot 10^{-5}$ | $4.519 \cdot 10^{-5}$ | $0$ |
| cjj18 | $-8.166$ | $-8.166$ | $0$ | $0.6877$ | $0.6877$ | $0$ |
| cjj31 | $-1.058$ | $-1.058$ | $0$ | $2.127$ | $2.127$ | $0$ |
| cjj38 | $0.6646$ | $0.6646$ | $6.019 \cdot 10^{-8}$ | $0.9463$ | $0.9463$ | $8.454 \cdot 10^{-8}$ |
| cju1 | $-0.1884$ | $-0.1884$ | $0$ | $1$ | $1$ | $0$ |
| cju8 | $-1.334$ | $-1.334$ | $0$ | $0.2222$ | $0.2222$ | $0$ |
| cjujd11Im | $\color{blue}{-7.932 \cdot 10^{-35}}$ | $\color{blue}{-8.066 \cdot 10^{-35}}$ | $\color{blue}{-0.01693}$ | $1.214 \cdot 10^{-19}$ | $1.214 \cdot 10^{-19}$ | $-2.636 \cdot 10^{-6}$ |
| cjujd11Re | $-1.748 \cdot 10^{-20}$ | $-1.748 \cdot 10^{-20}$ | $-1.373 \cdot 10^{-6}$ | $7.476 \cdot 10^{-20}$ | $7.476 \cdot 10^{-20}$ | $-2.662 \cdot 10^{-6}$ |
| cjujd1Re | $1.483 \cdot 10^{-20}$ | $1.483 \cdot 10^{-20}$ | $-1.281 \cdot 10^{-6}$ | $1.472 \cdot 10^{-19}$ | $1.472 \cdot 10^{-19}$ | $-2.65 \cdot 10^{-6}$ |
| cjujd81Im | $\color{blue}{-4.642 \cdot 10^{-35}}$ | $\color{blue}{-4.496 \cdot 10^{-35}}$ | $\color{blue}{0.03157}$ | $1.635 \cdot 10^{-20}$ | $1.635 \cdot 10^{-20}$ | $-2.691 \cdot 10^{-6}$ |
| cjujd81Re | $1.138 \cdot 10^{-19}$ | $1.138 \cdot 10^{-19}$ | $-1.318 \cdot 10^{-6}$ | $1.164 \cdot 10^{-20}$ | $1.164 \cdot 10^{-20}$ | $-2.664 \cdot 10^{-6}$ |
| cjujd8Im | $\color{blue}{-6.938 \cdot 10^{-36}}$ | $\color{blue}{-6.517 \cdot 10^{-36}}$ | $\color{blue}{0.06076}$ | $1.312 \cdot 10^{-20}$ | $1.312 \cdot 10^{-20}$ | $-2.667 \cdot 10^{-6}$ |
| cjujd8Re | $6.838 \cdot 10^{-20}$ | $6.838 \cdot 10^{-20}$ | $-1.345 \cdot 10^{-6}$ | $1.115 \cdot 10^{-20}$ | $1.115 \cdot 10^{-20}$ | $-2.69 \cdot 10^{-6}$ |
| cll1221 | $-0.0003481$ | $-0.0003481$ | $0$ | $5.056 \cdot 10^{-6}$ | $5.056 \cdot 10^{-6}$ | $0$ |
| cuBIm | $-3.576 \cdot 10^{-28}$ | $-3.572 \cdot 10^{-28}$ | $0.0009023$ | $2.114 \cdot 10^{-15}$ | $2.114 \cdot 10^{-15}$ | $-1.419 \cdot 10^{-6}$ |
| cuBRe | $-1.259 \cdot 10^{-12}$ | $-1.259 \cdot 10^{-12}$ | $-7.147 \cdot 10^{-7}$ | $6.347 \cdot 10^{-12}$ | $6.347 \cdot 10^{-12}$ | $-1.45 \cdot 10^{-6}$ |
| cuGRe | $-3.39 \cdot 10^{-11}$ | $-3.39 \cdot 10^{-11}$ | $-7.375 \cdot 10^{-7}$ | $2.786 \cdot 10^{-10}$ | $2.786 \cdot 10^{-10}$ | $-1.436 \cdot 10^{-6}$ |
| cuHIm | $-7.464 \cdot 10^{-36}$ | $-7.458 \cdot 10^{-36}$ | $0.0007601$ | $9.827 \cdot 10^{-23}$ | $9.827 \cdot 10^{-23}$ | $-1.445 \cdot 10^{-6}$ |
| cuHRe | $-2.027 \cdot 10^{-21}$ | $-2.027 \cdot 10^{-21}$ | $-7.401 \cdot 10^{-7}$ | $9.746 \cdot 10^{-23}$ | $9.746 \cdot 10^{-23}$ | $-1.447 \cdot 10^{-6}$ |
| cuWIm | $\color{blue}{3.113 \cdot 10^{-25}}$ | $\color{blue}{3.118 \cdot 10^{-25}}$ | $\color{blue}{-0.001497}$ | $6.345 \cdot 10^{-12}$ | $6.345 \cdot 10^{-12}$ | $-1.434 \cdot 10^{-6}$ |
| cud1 | $0.01543$ | $0.01543$ | $0$ | $0.1681$ | $0.1681$ | $0$ |
| cud8 | $-0.1674$ | $-0.1674$ | $0$ | $0.0343$ | $0.0343$ | $0$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| sm | 0 | 0 | 0 | 10.41 | 10.41 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $8.07 \cdot 10^{-5}$ | $8.07 \cdot 10^{-5}$ | 0 | $6.13 \cdot 10^{-7}$ | $6.13 \cdot 10^{-7}$ | 0 |
| cHWB | $-7.559 \cdot 10^{-5}$ | $-7.559 \cdot 10^{-5}$ | 0 | $5.075 \cdot 10^{-6}$ | $5.075 \cdot 10^{-6}$ | 0 |
| cHj1 | $-0.0003543$ | $-0.0003543$ | 0 | $1.528 \cdot 10^{-5}$ | $1.528 \cdot 10^{-5}$ | 0 |
| cHj3 | $1.662 \cdot 10^{-6}$ | $1.662 \cdot 10^{-6}$ | 0 | $7.168 \cdot 10^{-8}$ | $7.168 \cdot 10^{-8}$ | 0 |
| cHl111 | $-0.0002265$ | $-0.0002265$ | 0 | $6.866 \cdot 10^{-6}$ | $6.866 \cdot 10^{-6}$ | 0 |
| cHl311 | $2.554 \cdot 10^{-20}$ | $2.554 \cdot 10^{-20}$ | 0 | $1.743 \cdot 10^{-37}$ | $1.743 \cdot 10^{-37}$ | 0 |
| cHl322 | $-0.0001126$ | $-0.0001126$ | 0 | $3.414 \cdot 10^{-6}$ | $3.414 \cdot 10^{-6}$ | 0 |
| clj111 | $3.575 \cdot 10^{-5}$ | $3.575 \cdot 10^{-5}$ | 0 | $0.0001839$ | $0.0001839$ | 0 |
| clj311 | $0.02213$ | $0.02213$ | 0 | $0.1138$ | $0.1138$ | 0 |
| cll1221 | $0.0001193$ | $0.0001193$ | 0 | $1.808 \cdot 10^{-6}$ | $1.808 \cdot 10^{-6}$ | 0 |
| clu11 | $-0.001656$ | $-0.001656$ | 0 | $0.02014$ | $0.02014$ | 0 |
| cuBIm | $2.64 \cdot 10^{-29}$ | $2.64 \cdot 10^{-29}$ | $3.257 \cdot 10^{-6}$ | $4.181 \cdot 10^{-14}$ | $4.181 \cdot 10^{-14}$ | $-1.459 \cdot 10^{-6}$ |
| cuBRe | $-7.337 \cdot 10^{-14}$ | $-7.337 \cdot 10^{-14}$ | $-7.224 \cdot 10^{-7}$ | $2.02 \cdot 10^{-14}$ | $2.02 \cdot 10^{-14}$ | $-1.485 \cdot 10^{-6}$ |
| cuWIm | $1.227 \cdot 10^{-28}$ | $1.227 \cdot 10^{-28}$ | $-2.772 \cdot 10^{-6}$ | $1.336 \cdot 10^{-13}$ | $1.336 \cdot 10^{-13}$ | $-1.497 \cdot 10^{-6}$ |
| sm | 0 | 0 | 0 | $0.0007744$ | $0.0007744$ | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | $-0.0001102$ | $-0.0001102$ | 0 | $7.141 \cdot 10^{-6}$ | $7.141 \cdot 10^{-6}$ | 0 |
| cHWB | $-0.0008632$ | $-0.0008632$ | 0 | $8.054 \cdot 10^{-5}$ | $8.054 \cdot 10^{-5}$ | 0 |
| cHj1 | $-8.151 \cdot 10^{-5}$ | $-8.151 \cdot 10^{-5}$ | 0 | $1.545 \cdot 10^{-5}$ | $1.545 \cdot 10^{-5}$ | 0 |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| cHj3 | 0.0004623 | 0.0004623 | 0 | $3.076 \cdot 10^{-5}$ | $3.076 \cdot 10^{-5}$ | 0 |
| cHl311 | $-0.000212$ | $-0.000212$ | 0 | $6.425 \cdot 10^{-6}$ | $6.425 \cdot 10^{-6}$ | 0 |
| cHl322 | $-4.27 \cdot 10^{-5}$ | $-4.27 \cdot 10^{-5}$ | 0 | $1.294 \cdot 10^{-6}$ | $1.294 \cdot 10^{-6}$ | 0 |
| cjj11 | 0.03528 | 0.03528 | 0 | 0.3191 | 0.3191 | 0 |
| cjj18 | 0.08014 | 0.08014 | $-1.248 \cdot 10^{-8}$ | 0.05409 | 0.05409 | 0 |
| cjj31 | 0.4405 | 0.4405 | 0 | 3.984 | 3.984 | 0 |
| cjj38 | 1.316 | 1.316 | 0 | 0.8883 | 0.8883 | 0 |
| cju1 | 0.03029 | 0.03029 | 0 | 1.135 | 1.135 | 0 |
| cju8 | 0.7495 | 0.7495 | 0 | 0.2529 | 0.2529 | 0 |
| cll1221 | 0.0008844 | 0.0008844 | 0 | $1.34 \cdot 10^{-5}$ | $1.34 \cdot 10^{-5}$ | 0 |
| cuBIm | $3.216 \cdot 10^{-24}$ | $2.489 \cdot 10^{-24}$ | 0.226 | $1.512 \cdot 10^{-7}$ | $1.512 \cdot 10^{-7}$ | $2.645 \cdot 10^{-7}$ |
| cuBRe | $-1.361 \cdot 10^{-7}$ | $-1.361 \cdot 10^{-7}$ | $1.469 \cdot 10^{-7}$ | $1.838 \cdot 10^{-7}$ | $1.838 \cdot 10^{-7}$ | $2.72 \cdot 10^{-7}$ |
| cuGRe | $-1.034 \cdot 10^{-5}$ | $-1.034 \cdot 10^{-5}$ | $9.669 \cdot 10^{-8}$ | $2.093 \cdot 10^{-6}$ | $2.093 \cdot 10^{-6}$ | $2.866 \cdot 10^{-7}$ |
| cuHIm | $2.268 \cdot 10^{-33}$ | $5.617 \cdot 10^{-34}$ | 0.7524 | $1.553 \cdot 10^{-17}$ | $1.553 \cdot 10^{-17}$ | $-5.794 \cdot 10^{-7}$ |
| cuHRe | $-5.103 \cdot 10^{-16}$ | $-5.103 \cdot 10^{-16}$ | $-2.939 \cdot 10^{-7}$ | $3.107 \cdot 10^{-17}$ | $3.107 \cdot 10^{-17}$ | $-5.794 \cdot 10^{-7}$ |
| cuWIm | $-8.195 \cdot 10^{-25}$ | $6.661 \cdot 10^{-25}$ | 1.813 | $1.716 \cdot 10^{-7}$ | $1.716 \cdot 10^{-7}$ | $2.914 \cdot 10^{-7}$ |
| cuu1 | 0.01737 | 0.01737 | 0 | 0.3191 | 0.3191 | 0 |
| cuu8 | 0.2547 | 0.2547 | 0 | 0.1719 | 0.1719 | 0 |
| sm | 0 | 0 | 0 | 0.4948 | 0.4948 | 0 |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| cHDD | 0.005843 | 0.005843 | 0 | $5.312 \cdot 10^{-5}$ | $5.312 \cdot 10^{-5}$ | 0 |
| cHWB | 0.003629 | 0.003629 | 0 | 0.000328 | 0.000328 | 0 |
| cHj1 | 0.0005801 | 0.0005801 | 0 | 0.02441 | 0.02441 | 0 |
| cHj3 | $-0.0004521$ | $-0.0004521$ | 0 | $2.586 \cdot 10^{-5}$ | $2.586 \cdot 10^{-5}$ | 0 |
| cHl311 | 0.007977 | 0.007977 | 0 | $3.741 \cdot 10^{-5}$ | $3.741 \cdot 10^{-5}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| cHl322 | $0.06368$ | $0.06368$ | $0$ | $0.001097$ | $0.001097$ | $0$ |
| cjj11 | $-3.672$ | $-3.672$ | $0$ | $5.231$ | $5.231$ | $0$ |
| cjj18 | $-0.1482$ | $-0.1482$ | $0$ | $0.2185$ | $0.2185$ | $0$ |
| cjj31 | $-285.3$ | $-285.3$ | $0$ | $10.45$ | $10.45$ | $0$ |
| cjj38 | $-3.092 \cdot 10^4$ | $-3.092 \cdot 10^4$ | $-9.704 \cdot 10^{-8}$ | $1.185$ | $1.185$ | $-1.688 \cdot 10^{-7}$ |
| cju1 | $-0.08073$ | $-0.08073$ | $0$ | $2.651$ | $2.651$ | $0$ |
| cju8 | $-20.65$ | $-20.65$ | $0$ | $0.4463$ | $0.4463$ | $0$ |
| cll1221 | $-0.0007725$ | $-0.0007725$ | $0$ | $2.139 \cdot 10^{-6}$ | $2.139 \cdot 10^{-6}$ | $0$ |
| cuBIm | $\textcolor{blue}{-1.757 \cdot 10^{-27}}$ | $\textcolor{blue}{-1.75 \cdot 10^{-27}}$ | $\textcolor{blue}{0.003455}$ | $1.294 \cdot 10^{-11}$ | $1.294 \cdot 10^{-11}$ | $-1.468 \cdot 10^{-6}$ |
| cuBRe | $-1.487 \cdot 10^{-11}$ | $-1.487 \cdot 10^{-11}$ | $-7.397 \cdot 10^{-7}$ | $8.966 \cdot 10^{-13}$ | $8.967 \cdot 10^{-13}$ | $-1.45 \cdot 10^{-6}$ |
| cuGRe | $-1.01 \cdot 10^{-10}$ | $-1.01 \cdot 10^{-10}$ | $-6.933 \cdot 10^{-7}$ | $5.126 \cdot 10^{-12}$ | $5.126 \cdot 10^{-12}$ | $-1.444 \cdot 10^{-6}$ |
| cuHIm | $\textcolor{blue}{-9.842 \cdot 10^{-28}}$ | $\textcolor{blue}{-1.013 \cdot 10^{-27}}$ | $\textcolor{blue}{-0.02888}$ | $1.161 \cdot 10^{-22}$ | $1.161 \cdot 10^{-22}$ | $-1.465 \cdot 10^{-6}$ |
| cuHRe | $2.927 \cdot 10^{-11}$ | $2.927 \cdot 10^{-11}$ | $-7.176 \cdot 10^{-7}$ | $2.009 \cdot 10^{-22}$ | $2.009 \cdot 10^{-22}$ | $-1.443 \cdot 10^{-6}$ |
| cuWIm | $\textcolor{blue}{9.05 \cdot 10^{-26}}$ | $\textcolor{blue}{9.108 \cdot 10^{-26}}$ | $\textcolor{blue}{-0.00639}$ | $1.648 \cdot 10^{-11}$ | $1.648 \cdot 10^{-11}$ | $-1.456 \cdot 10^{-6}$ |
| cuu1 | $-3.347$ | $-3.347$ | $0$ | $5.231$ | $5.231$ | $0$ |
| cuu8 | $-0.0004959$ | $-0.0004959$ | $-1.008 \cdot 10^{-7}$ | $0.007179$ | $0.007179$ | $-2.089 \cdot 10^{-7}$ |
| sm | $0$ | $0$ | $0$ | $3.817$ | $3.817$ | $0$ |

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

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| cHB | $-0.04058$ | $-0.04058$ | $0$ | $0.04441$ | $0.04441$ | $0$ |
| cHBtil | $4.168 \cdot 10^{-17}$ | $4.168 \cdot 10^{-17}$ | $0$ | $0.04441$ | $0.04441$ | $0$ |
| cHDD | $0.1179$ | $0.1179$ | $0$ | $0.00179$ | $0.00179$ | $0$ |
| cHW | $-0.3809$ | $-0.3809$ | $0$ | $1.435$ | $1.435$ | $0$ |
| cHWB | $0.2602$ | $0.2602$ | $0$ | $0.1669$ | $0.1669$ | $0$ |
| cHWBtil | $-2.905 \cdot 10^{-15}$ | $-2.905 \cdot 10^{-15}$ | $0$ | $1.056$ | $1.056$ | $0$ |
| cHWtil | $1.304 \cdot 10^{-15}$ | $1.304 \cdot 10^{-15}$ | $0$ | $1.434$ | $1.434$ | $0$ |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHl311 | $-3.921$ | $-3.921$ | 0 | 0.1188 | 0.1188 | 0 |
| cHl322 | $-4.074$ | $-4.074$ | 0 | 0.1235 | 0.1235 | 0 |
| cW | $-0.04279$ | $-0.04279$ | 0 | 15.98 | 15.98 | 0 |
| cWtil | $-6.834 \cdot 10^{-14}$ | $-6.835 \cdot 10^{-14}$ | $-0.0001354$ | 16.02 | 16.02 | 0 |
| cll1221 | 3.427 | 3.427 | 0 | 0.05194 | 0.05194 | 0 |
| sm | 0 | 0 | 0 | 37.84 | 37.84 | 0 |

## 1.88 $zz \to zz$

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| cHB | 0.001734 | 0.001734 | 0 | 0.07301 | 0.07301 | 0 |
| cHBtil | $-3.747 \cdot 10^{-19}$ | $-3.747 \cdot 10^{-19}$ | 0 | 0.07251 | 0.07251 | 0 |
| cHDD | 0.004934 | 0.004934 | 0 | $7.478 \cdot 10^{-5}$ | $7.478 \cdot 10^{-5}$ | 0 |
| cHW | 0.006042 | 0.006042 | 0 | 0.8989 | 0.8989 | 0 |
| cHWB | 0.003252 | 0.003252 | 0 | 0.2367 | 0.2367 | 0 |
| cHWBtil | $1.49 \cdot 10^{-18}$ | $1.49 \cdot 10^{-18}$ | 0 | 0.2309 | 0.2309 | 0 |
| cHWtil | $3.045 \cdot 10^{-17}$ | $3.045 \cdot 10^{-17}$ | 0 | 0.9526 | 0.9526 | 0 |
| cHl311 | $-0.009826$ | $-0.009826$ | 0 | 0.0002979 | 0.0002979 | 0 |
| cHl322 | $-0.009816$ | $-0.009816$ | 0 | 0.0002975 | 0.0002975 | 0 |
| cll1221 | 0.004916 | 0.004916 | 0 | $7.451 \cdot 10^{-5}$ | $7.451 \cdot 10^{-5}$ | 0 |
| sm | 0 | 0 | 0 | 0.0804 | 0.0804 | 0 |

# 2 By parameter point

## 2.1 cG

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|---|
| $gg \to gg$ | $8.154 \cdot 10^{-10}$ | $8.154 \cdot 10^{-10}$ | $1.496 \cdot 10^{-6}$ | | $102.5$ | $102.5$ | $0$ |
| $gg \to ggg$ | $0.005935$ | $0.005935$ | $0$ | | $0.05581$ | $0.05581$ | $0$ |
| $gg \to t\bar{t}$ | $-0.2439$ | $-0.2439$ | $0$ | | $1.246$ | $1.246$ | $0$ |
| $gg \to u\bar{u}$ | $4.128 \cdot 10^{-12}$ | $4.128 \cdot 10^{-12}$ | $0$ | | $2.097$ | $2.097$ | $0$ |

## 2.2 cGtil

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $gg \to gg$ | <span style="color:red">$-5.677 \cdot 10^{-16}$</span> | <span style="color:red">$-5.371 \cdot 10^{-16}$</span> | <span style="color:red">$0.05397$</span> | $93.73$ | $93.73$ | $0$ |
| $gg \to ggg$ | $-0.005071$ | $-0.005071$ | $0$ | $0.01173$ | $0.01173$ | $0$ |
| $gg \to t\bar{t}$ | $-4.792 \cdot 10^{-17}$ | $-4.792 \cdot 10^{-17}$ | $0$ | $2.488$ | $2.488$ | $0$ |
| $gg \to u\bar{u}$ | $1.309 \cdot 10^{-16}$ | $1.309 \cdot 10^{-16}$ | $0$ | $2.223$ | $2.223$ | $0$ |

## 2.3 cH

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to HH$ | $-1.385$ | $-1.385$ | $0$ | $2.164$ | $2.164$ | $0$ |
| $HH \to HHH$ | $1.018 \cdot 10^{-5}$ | $1.018 \cdot 10^{-5}$ | $0$ | $1.724 \cdot 10^{-5}$ | $1.724 \cdot 10^{-5}$ | $0$ |
| $HH \to H\tau^+\tau^-$ | $-4.246 \cdot 10^{-10}$ | $-4.246 \cdot 10^{-10}$ | $0$ | $8.57 \cdot 10^{-10}$ | $8.57 \cdot 10^{-10}$ | $0$ |
| $HH \to Hb\bar{b}$ | $-6.963 \cdot 10^{-9}$ | $-6.963 \cdot 10^{-9}$ | $0$ | $1.334 \cdot 10^{-8}$ | $1.334 \cdot 10^{-8}$ | $0$ |
| $HH \to Hs\bar{s}$ | $-4.134 \cdot 10^{-10}$ | $-4.134 \cdot 10^{-10}$ | $0$ | $6.452 \cdot 10^{-10}$ | $6.452 \cdot 10^{-10}$ | $0$ |
| $HH \to Ht\bar{t}$ | $1.675 \cdot 10^{-5}$ | $1.675 \cdot 10^{-5}$ | $0$ | $1.814 \cdot 10^{-5}$ | $1.814 \cdot 10^{-5}$ | $0$ |
| $HH \to Hu\bar{u}$ | $-2.619 \cdot 10^{-15}$ | $-2.619 \cdot 10^{-15}$ | $0$ | $6.799 \cdot 10^{-15}$ | $6.799 \cdot 10^{-15}$ | $0$ |
| $HH \to Hzz$ | $8.565 \cdot 10^{-6}$ | $8.565 \cdot 10^{-6}$ | $0$ | $1.753 \cdot 10^{-5}$ | $1.753 \cdot 10^{-5}$ | $0$ |
| $HH \to W^+W^-$ | $0.172$ | $0.172$ | $0$ | $0.1331$ | $0.1331$ | $0$ |
| $HH \to W^+W^-\gamma$ | $-4.961 \cdot 10^{-8}$ | $-4.961 \cdot 10^{-8}$ | $0$ | $1.249 \cdot 10^{-8}$ | $1.249 \cdot 10^{-8}$ | $0$ |
| $HH \to W^+\bar{t}b$ | $2.749 \cdot 10^{-5}$ | $2.749 \cdot 10^{-5}$ | $0$ | $2.594 \cdot 10^{-6}$ | $2.594 \cdot 10^{-6}$ | $0$ |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|---|
| $HH \to W^+ e^- \bar{\nu}_e$ | $2.527 \cdot 10^{-9}$ | $2.527 \cdot 10^{-9}$ | 0 | | $2.534 \cdot 10^{-11}$ | $2.534 \cdot 10^{-11}$ | 0 |
| $HH \to W^- u\bar{d}$ | $1.423 \cdot 10^{-8}$ | $1.423 \cdot 10^{-8}$ | 0 | | $1.113 \cdot 10^{-10}$ | $1.113 \cdot 10^{-10}$ | 0 |
| $HH \to z\bar{b}b$ | $1.408 \cdot 10^{-8}$ | $1.408 \cdot 10^{-8}$ | 0 | | $7.723 \cdot 10^{-9}$ | $7.723 \cdot 10^{-9}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $4.463 \cdot 10^{-9}$ | $4.463 \cdot 10^{-9}$ | 0 | | $1.728 \cdot 10^{-10}$ | $1.728 \cdot 10^{-10}$ | 0 |
| $HH \to zc\bar{c}$ | $6.523 \cdot 10^{-8}$ | $6.523 \cdot 10^{-8}$ | 0 | | $2.021 \cdot 10^{-7}$ | $2.021 \cdot 10^{-7}$ | 0 |
| $HH \to zd\bar{d}$ | $9.943 \cdot 10^{-7}$ | $9.943 \cdot 10^{-7}$ | 0 | | $1.08 \cdot 10^{-8}$ | $1.08 \cdot 10^{-8}$ | 0 |
| $HH \to ze^+e^-$ | $3.374 \cdot 10^{-6}$ | $3.374 \cdot 10^{-6}$ | 0 | | $1.287 \cdot 10^{-6}$ | $1.287 \cdot 10^{-6}$ | 0 |
| $HH \to zt\bar{t}$ | $1.641 \cdot 10^{-5}$ | $1.641 \cdot 10^{-5}$ | 0 | | $6.085 \cdot 10^{-7}$ | $6.085 \cdot 10^{-7}$ | 0 |
| $HH \to zz$ | 0.01175 | 0.01175 | 0 | | 0.06606 | 0.06606 | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-3.096 \cdot 10^{-10}$ | $-3.096 \cdot 10^{-10}$ | 0 | | $1.315 \cdot 10^{-10}$ | $1.315 \cdot 10^{-10}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | $1.397 \cdot 10^{-10}$ | $1.397 \cdot 10^{-10}$ | 0 | | $3.43 \cdot 10^{-11}$ | $3.43 \cdot 10^{-11}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $9.491 \cdot 10^{-16}$ | $9.491 \cdot 10^{-16}$ | 0 | | $2.515 \cdot 10^{-16}$ | $2.515 \cdot 10^{-16}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $2.769 \cdot 10^{-7}$ | $2.769 \cdot 10^{-7}$ | 0 | | $5.769 \cdot 10^{-8}$ | $5.769 \cdot 10^{-8}$ | 0 |

## 2.4 cHB

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $HH \to Hzz$ | $5.554 \cdot 10^{-8}$ | $5.554 \cdot 10^{-8}$ | 0 | | $4.852 \cdot 10^{-7}$ | $4.852 \cdot 10^{-7}$ | 0 |
| $HH \to W^+W^-\gamma$ | $-3.188 \cdot 10^{-8}$ | $-3.188 \cdot 10^{-8}$ | 0 | | $6.688 \cdot 10^{-8}$ | $6.688 \cdot 10^{-8}$ | 0 |
| $HH \to z\bar{b}b$ | $8.458 \cdot 10^{-8}$ | $8.458 \cdot 10^{-8}$ | 0 | | $3.449 \cdot 10^{-8}$ | $3.449 \cdot 10^{-8}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $6.781 \cdot 10^{-8}$ | $6.781 \cdot 10^{-8}$ | 0 | | $8.272 \cdot 10^{-8}$ | $8.272 \cdot 10^{-8}$ | 0 |
| $HH \to zc\bar{c}$ | $5.004 \cdot 10^{-8}$ | $5.004 \cdot 10^{-8}$ | 0 | | $1.848 \cdot 10^{-7}$ | $1.848 \cdot 10^{-7}$ | 0 |
| $HH \to zd\bar{d}$ | $7.416 \cdot 10^{-8}$ | $7.416 \cdot 10^{-8}$ | 0 | | $1.014 \cdot 10^{-6}$ | $1.014 \cdot 10^{-6}$ | 0 |
| $HH \to ze^+e^-$ | $3.326 \cdot 10^{-8}$ | $3.326 \cdot 10^{-8}$ | 0 | | $4.04 \cdot 10^{-7}$ | $4.04 \cdot 10^{-7}$ | 0 |
| $HH \to zt\bar{t}$ | $-2.853 \cdot 10^{-5}$ | $-2.853 \cdot 10^{-5}$ | 0 | | $1.647 \cdot 10^{-6}$ | $1.647 \cdot 10^{-6}$ | 0 |
| $HH \to zz$ | 0.01832 | 0.01832 | 0 | | 0.2077 | 0.2077 | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-5.082 \cdot 10^{-6}$ | $-5.082 \cdot 10^{-6}$ | 0 | | $1.473 \cdot 10^{-7}$ | $1.473 \cdot 10^{-7}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $2.805 \cdot 10^{-7}$ | $2.805 \cdot 10^{-7}$ | 0 | | $3.391 \cdot 10^{-8}$ | $3.391 \cdot 10^{-8}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $6.607 \cdot 10^{-9}$ | $6.607 \cdot 10^{-9}$ | 0 | $9.121 \cdot 10^{-9}$ | $9.121 \cdot 10^{-9}$ | 0 |
| $H\gamma \to b\bar{b}$ | $-3.976 \cdot 10^{-6}$ | $-3.976 \cdot 10^{-6}$ | 0 | 0.007175 | 0.007175 | 0 |
| $H\gamma \to c\bar{c}$ | $-5.333 \cdot 10^{-7}$ | $-5.333 \cdot 10^{-7}$ | 0 | 0.01824 | 0.01824 | 0 |
| $H\gamma \to d\bar{d}$ | $-1.456 \cdot 10^{-11}$ | $-1.456 \cdot 10^{-11}$ | 0 | 0.008394 | 0.008394 | 0 |
| $H\gamma \to e^+ e^-$ | $-7.697 \cdot 10^{-14}$ | $-7.697 \cdot 10^{-14}$ | 0 | 0.01607 | 0.01607 | 0 |
| $H\gamma \to t\bar{t}$ | $-0.03256$ | $-0.03256$ | 0 | 0.02081 | 0.02081 | 0 |
| $Hz \to \mu^+ \mu^-$ | 0.0003301 | 0.0003301 | 0 | 0.003899 | 0.003899 | 0 |
| $Hz \to \nu_\tau \bar{\nu}_\tau$ | 0.0007685 | 0.0007685 | 0 | 0.0006244 | 0.0006244 | 0 |
| $Hz \to b\bar{b}$ | 0.00115 | 0.00115 | 0 | 0.001355 | 0.001355 | 0 |
| $Hz \to s\bar{s}$ | 0.001081 | 0.001081 | 0 | 0.001258 | 0.001258 | 0 |
| $Hz \to t\bar{t}$ | $-0.01222$ | $-0.01222$ | 0 | 0.004164 | 0.004164 | 0 |
| $Hz \to u\bar{u}$ | 0.0005915 | 0.0005915 | 0 | 0.005405 | 0.005405 | 0 |
| $W^+ W^- \to Hb\bar{b}$ | $-1.41 \cdot 10^{-8}$ | $-1.41 \cdot 10^{-8}$ | 0 | $1.295 \cdot 10^{-10}$ | $1.295 \cdot 10^{-10}$ | 0 |
| $W^+ W^- \to Hc\bar{c}$ | $1.782 \cdot 10^{-8}$ | $1.782 \cdot 10^{-8}$ | 0 | $1.227 \cdot 10^{-9}$ | $1.227 \cdot 10^{-9}$ | 0 |
| $W^+ W^- \to Hd\bar{d}$ | $-2.681 \cdot 10^{-8}$ | $-2.681 \cdot 10^{-8}$ | 0 | $3.063 \cdot 10^{-10}$ | $3.063 \cdot 10^{-10}$ | 0 |
| $W^+ W^- \to Ht\bar{t}$ | $2.639 \cdot 10^{-8}$ | $2.639 \cdot 10^{-8}$ | 0 | $7.342 \cdot 10^{-10}$ | $7.342 \cdot 10^{-10}$ | 0 |
| $W^+ W^- \to \gamma\gamma$ | $-0.04495$ | $-0.04495$ | 0 | 0.2771 | 0.2771 | 0 |
| $W^+ W^- \to \gamma\gamma\gamma$ | $-1.189 \cdot 10^{-8}$ | $-1.189 \cdot 10^{-8}$ | 0 | $1.33 \cdot 10^{-7}$ | $1.33 \cdot 10^{-7}$ | 0 |
| $\gamma W^+ \to z W^+$ | $-0.06812$ | $-0.06812$ | 0 | 0.156 | 0.156 | 0 |
| $b\bar{b} \to \gamma\gamma$ | $-3.892 \cdot 10^{-7}$ | $-3.892 \cdot 10^{-7}$ | 0 | $7.26 \cdot 10^{-6}$ | $7.26 \cdot 10^{-6}$ | 0 |
| $zz \to W^+ W^-$ | $-0.04058$ | $-0.04058$ | 0 | 0.04441 | 0.04441 | 0 |
| $zz \to zz$ | 0.001734 | 0.001734 | 0 | 0.07301 | 0.07301 | 0 |

## 2.5  cHBtil

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to Hzz$ | $1.74 \cdot 10^{-7}$ | $1.74 \cdot 10^{-7}$ | 0 | $9.257 \cdot 10^{-7}$ | $9.257 \cdot 10^{-7}$ | 0 |
| $HH \to W^+ W^- \gamma$ | $-1.036 \cdot 10^{-7}$ | $-1.036 \cdot 10^{-7}$ | 0 | $2.263 \cdot 10^{-8}$ | $2.263 \cdot 10^{-8}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $HH \to z\bar{b}b$ | $-3.082 \cdot 10^{-8}$ | $-3.082 \cdot 10^{-8}$ | 0 | $7.982 \cdot 10^{-8}$ | $7.982 \cdot 10^{-8}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $5.909 \cdot 10^{-8}$ | $5.909 \cdot 10^{-8}$ | 0 | $3.882 \cdot 10^{-8}$ | $3.882 \cdot 10^{-8}$ | 0 |
| $HH \to zc\bar{c}$ | $1.022 \cdot 10^{-10}$ | $1.022 \cdot 10^{-10}$ | 0 | $1.987 \cdot 10^{-7}$ | $1.987 \cdot 10^{-7}$ | 0 |
| $HH \to zd\bar{d}$ | $9.904 \cdot 10^{-9}$ | $9.904 \cdot 10^{-9}$ | 0 | $1.794 \cdot 10^{-9}$ | $1.794 \cdot 10^{-9}$ | 0 |
| $HH \to ze^+e^-$ | $-2.339 \cdot 10^{-9}$ | $-2.339 \cdot 10^{-9}$ | 0 | $1.38 \cdot 10^{-6}$ | $1.38 \cdot 10^{-6}$ | 0 |
| $HH \to zt\bar{t}$ | $2.673 \cdot 10^{-8}$ | $2.673 \cdot 10^{-8}$ | 0 | $3.266 \cdot 10^{-7}$ | $3.266 \cdot 10^{-7}$ | 0 |
| $HH \to zz$ | $2.205 \cdot 10^{-17}$ | $2.205 \cdot 10^{-17}$ | 0 | 0.1869 | 0.1869 | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $7.814 \cdot 10^{-8}$ | $7.814 \cdot 10^{-8}$ | 0 | $3.005 \cdot 10^{-7}$ | $3.005 \cdot 10^{-7}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $2.649 \cdot 10^{-9}$ | $2.649 \cdot 10^{-9}$ | 0 | $1.985 \cdot 10^{-9}$ | $1.985 \cdot 10^{-9}$ | 0 |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | $-1.236 \cdot 10^{-10}$ | $-1.236 \cdot 10^{-10}$ | 0 | $7.297 \cdot 10^{-9}$ | $7.297 \cdot 10^{-9}$ | 0 |
| $H\gamma \to b\bar{b}$ | $-7.139 \cdot 10^{-10}$ | $-7.139 \cdot 10^{-10}$ | 0 | 0.005093 | 0.005093 | 0 |
| $H\gamma \to c\bar{c}$ | $8.41 \cdot 10^{-11}$ | $8.41 \cdot 10^{-11}$ | 0 | 0.01669 | 0.01669 | 0 |
| $H\gamma \to d\bar{d}$ | $2.569 \cdot 10^{-15}$ | $2.569 \cdot 10^{-15}$ | 0 | 0.006077 | 0.006077 | 0 |
| $H\gamma \to e^+e^-$ | $-2.135 \cdot 10^{-17}$ | $-2.135 \cdot 10^{-17}$ | 0 | 0.01665 | 0.01665 | 0 |
| $H\gamma \to t\bar{t}$ | $8.077 \cdot 10^{-5}$ | $8.077 \cdot 10^{-5}$ | 0 | 0.02462 | 0.02462 | 0 |
| $Hz \to \mu^+\mu^-$ | $-5.068 \cdot 10^{-8}$ | $-5.068 \cdot 10^{-8}$ | 0 | 0.002786 | 0.002786 | 0 |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | $6.776 \cdot 10^{-21}$ | $6.776 \cdot 10^{-21}$ | 0 | 0.0005853 | 0.0005853 | 0 |
| $Hz \to b\bar{b}$ | $-1.945 \cdot 10^{-7}$ | $-1.945 \cdot 10^{-7}$ | 0 | 0.001078 | 0.001078 | 0 |
| $Hz \to s\bar{s}$ | $-3.425 \cdot 10^{-7}$ | $-3.425 \cdot 10^{-7}$ | 0 | 0.001387 | 0.001387 | 0 |
| $Hz \to t\bar{t}$ | $-6.381 \cdot 10^{-5}$ | $-6.381 \cdot 10^{-5}$ | 0 | 0.006783 | 0.006783 | 0 |
| $Hz \to u\bar{u}$ | $3.204 \cdot 10^{-7}$ | $3.204 \cdot 10^{-7}$ | 0 | 0.003462 | 0.003462 | 0 |
| $W^+W^- \to Hb\bar{b}$ | $5.015 \cdot 10^{-9}$ | $5.015 \cdot 10^{-9}$ | 0 | $6.862 \cdot 10^{-12}$ | $6.862 \cdot 10^{-12}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | $-3.782 \cdot 10^{-9}$ | $-3.782 \cdot 10^{-9}$ | 0 | $1.35 \cdot 10^{-9}$ | $1.35 \cdot 10^{-9}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $-4.614 \cdot 10^{-9}$ | $-4.614 \cdot 10^{-9}$ | 0 | $1.167 \cdot 10^{-10}$ | $1.167 \cdot 10^{-10}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-8.031 \cdot 10^{-9}$ | $-8.031 \cdot 10^{-9}$ | 0 | $5.795 \cdot 10^{-11}$ | $5.795 \cdot 10^{-11}$ | 0 |
| $W^+W^- \to \gamma\gamma$ | $-1.718 \cdot 10^{-17}$ | $-1.718 \cdot 10^{-17}$ | 0 | 0.2771 | 0.2771 | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $-2.577 \cdot 10^{-9}$ | $-2.577 \cdot 10^{-9}$ | 0 | $1.453 \cdot 10^{-7}$ | $1.453 \cdot 10^{-7}$ | 0 |
| $\gamma W^+ \to zW^+$ | $8.234 \cdot 10^{-16}$ | $8.234 \cdot 10^{-16}$ | 0 | 0.07367 | 0.07367 | 0 |
| $b\bar{b} \to \gamma\gamma$ | $6.275 \cdot 10^{-21}$ | $6.275 \cdot 10^{-21}$ | 0 | $7.26 \cdot 10^{-6}$ | $7.26 \cdot 10^{-6}$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $zz \to W^+W^-$ | $4.168 \cdot 10^{-17}$ | $4.168 \cdot 10^{-17}$ | 0 | 0.04441 | 0.04441 | 0 |
| $zz \to zz$ | $-3.747 \cdot 10^{-19}$ | $-3.747 \cdot 10^{-19}$ | 0 | 0.07251 | 0.07251 | 0 |

## 2.6   cHDD

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to HH$ | $-0.114$ | $-0.114$ | 0 | 0.01481 | 0.01481 | 0 |
| $HH \to HHH$ | $6.973 \cdot 10^{-7}$ | $6.973 \cdot 10^{-7}$ | 0 | $3.68 \cdot 10^{-7}$ | $3.68 \cdot 10^{-7}$ | 0 |
| $HH \to H\tau^+\tau^-$ | $2.142 \cdot 10^{-12}$ | $2.142 \cdot 10^{-12}$ | 0 | $3.966 \cdot 10^{-12}$ | $3.966 \cdot 10^{-12}$ | 0 |
| $HH \to Hb\bar{b}$ | $-2.801 \cdot 10^{-11}$ | $-2.801 \cdot 10^{-11}$ | 0 | $1.234 \cdot 10^{-13}$ | $1.234 \cdot 10^{-13}$ | 0 |
| $HH \to Hs\bar{s}$ | $-3.476 \cdot 10^{-13}$ | $-3.476 \cdot 10^{-13}$ | 0 | $1.25 \cdot 10^{-13}$ | $1.25 \cdot 10^{-13}$ | 0 |
| $HH \to Ht\bar{t}$ | $-7.031 \cdot 10^{-6}$ | $-7.031 \cdot 10^{-6}$ | 0 | $1.125 \cdot 10^{-6}$ | $1.125 \cdot 10^{-6}$ | 0 |
| $HH \to Hu\bar{u}$ | $-1.422 \cdot 10^{-16}$ | $-1.422 \cdot 10^{-16}$ | 0 | $6.311 \cdot 10^{-17}$ | $6.311 \cdot 10^{-17}$ | 0 |
| $HH \to Hzz$ | $2.328 \cdot 10^{-6}$ | $2.328 \cdot 10^{-6}$ | 0 | $1.396 \cdot 10^{-6}$ | $1.396 \cdot 10^{-6}$ | 0 |
| $HH \to W^+W^-$ | $-0.05963$ | $-0.05963$ | 0 | 0.2532 | 0.2532 | 0 |
| $HH \to W^+W^-\gamma$ | $-8.116 \cdot 10^{-7}$ | $-8.116 \cdot 10^{-7}$ | 0 | $3.035 \cdot 10^{-7}$ | $3.035 \cdot 10^{-7}$ | 0 |
| $HH \to W^+\bar{t}b$ | $-9.533 \cdot 10^{-6}$ | $-9.533 \cdot 10^{-6}$ | 0 | $7.864 \cdot 10^{-6}$ | $7.864 \cdot 10^{-6}$ | 0 |
| $HH \to W^+e^-\bar{\nu}_e$ | $-1.378 \cdot 10^{-8}$ | $-1.378 \cdot 10^{-8}$ | 0 | $2.519 \cdot 10^{-10}$ | $2.519 \cdot 10^{-10}$ | 0 |
| $HH \to W^-u\bar{d}$ | $-1.657 \cdot 10^{-8}$ | $-1.657 \cdot 10^{-8}$ | 0 | $1.192 \cdot 10^{-8}$ | $1.192 \cdot 10^{-8}$ | 0 |
| $HH \to z\bar{b}b$ | $7.195 \cdot 10^{-8}$ | $7.195 \cdot 10^{-8}$ | 0 | $2.382 \cdot 10^{-9}$ | $2.382 \cdot 10^{-9}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $2.002 \cdot 10^{-9}$ | $2.002 \cdot 10^{-9}$ | 0 | $3.167 \cdot 10^{-10}$ | $3.167 \cdot 10^{-10}$ | 0 |
| $HH \to zc\bar{c}$ | $-2.496 \cdot 10^{-8}$ | $-2.496 \cdot 10^{-8}$ | 0 | $7.398 \cdot 10^{-9}$ | $7.398 \cdot 10^{-9}$ | 0 |
| $HH \to zd\bar{d}$ | $6.937 \cdot 10^{-10}$ | $6.937 \cdot 10^{-10}$ | 0 | $7.906 \cdot 10^{-9}$ | $7.906 \cdot 10^{-9}$ | 0 |
| $HH \to ze^+e^-$ | $-5.332 \cdot 10^{-9}$ | $-5.332 \cdot 10^{-9}$ | 0 | $2.32 \cdot 10^{-9}$ | $2.32 \cdot 10^{-9}$ | 0 |
| $HH \to zt\bar{t}$ | $3.247 \cdot 10^{-5}$ | $3.247 \cdot 10^{-5}$ | 0 | $3.457 \cdot 10^{-6}$ | $3.457 \cdot 10^{-6}$ | 0 |
| $HH \to zz$ | $-0.0332$ | $-0.0332$ | 0 | 0.4524 | 0.4524 | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-1.374 \cdot 10^{-7}$ | $-1.374 \cdot 10^{-7}$ | 0 | $4.671 \cdot 10^{-9}$ | $4.671 \cdot 10^{-9}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $-1.253 \cdot 10^{-8}$ | $-1.253 \cdot 10^{-8}$ | 0 | $4.261 \cdot 10^{-10}$ | $4.261 \cdot 10^{-10}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $HW^+ \to u\bar{d}$ | $-0.000283$ | $-0.000283$ | $0$ | $2.145 \cdot 10^{-6}$ | $2.145 \cdot 10^{-6}$ | $0$ |
| $HW^- \to \bar{t}b$ | $-0.05469$ | $-0.05469$ | $0$ | $0.0004144$ | $0.0004144$ | $0$ |
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $-1.715 \cdot 10^{-9}$ | $-1.715 \cdot 10^{-9}$ | $0$ | $5.83 \cdot 10^{-11}$ | $5.83 \cdot 10^{-11}$ | $0$ |
| $HW^- \to \mu^- \bar{\nu}_\mu$ | $-4.719 \cdot 10^{-5}$ | $-4.719 \cdot 10^{-5}$ | $0$ | $3.576 \cdot 10^{-7}$ | $3.576 \cdot 10^{-7}$ | $0$ |
| $H\gamma \to b\bar{b}$ | $-0.0008759$ | $-0.0008759$ | $0$ | $2.978 \cdot 10^{-5}$ | $2.978 \cdot 10^{-5}$ | $0$ |
| $H\gamma \to c\bar{c}$ | $-6.839 \cdot 10^{-6}$ | $-6.839 \cdot 10^{-6}$ | $0$ | $2.325 \cdot 10^{-7}$ | $2.325 \cdot 10^{-7}$ | $0$ |
| $H\gamma \to d\bar{d}$ | $-1.272 \cdot 10^{-11}$ | $-1.272 \cdot 10^{-11}$ | $0$ | $4.325 \cdot 10^{-13}$ | $4.325 \cdot 10^{-13}$ | $0$ |
| $H\gamma \to e^+ e^-$ | $-9.142 \cdot 10^{-13}$ | $-9.142 \cdot 10^{-13}$ | $0$ | $3.109 \cdot 10^{-14}$ | $3.109 \cdot 10^{-14}$ | $0$ |
| $H\gamma \to t\bar{t}$ | $-0.07207$ | $-0.07207$ | $0$ | $0.002451$ | $0.002451$ | $0$ |
| $Hz \to \mu^+ \mu^-$ | $6.74 \cdot 10^{-5}$ | $6.74 \cdot 10^{-5}$ | $0$ | $2.925 \cdot 10^{-5}$ | $2.925 \cdot 10^{-5}$ | $0$ |
| $Hz \to \nu_\tau \bar{\nu}_\tau$ | $1.079 \cdot 10^{-19}$ | $1.079 \cdot 10^{-19}$ | $0$ | $1.119 \cdot 10^{-35}$ | $1.119 \cdot 10^{-35}$ | $0$ |
| $Hz \to b\bar{b}$ | $9.723 \cdot 10^{-5}$ | $9.723 \cdot 10^{-5}$ | $0$ | $1.193 \cdot 10^{-5}$ | $1.193 \cdot 10^{-5}$ | $0$ |
| $Hz \to s\bar{s}$ | $0.0003012$ | $0.0003012$ | $0$ | $6.735 \cdot 10^{-6}$ | $6.735 \cdot 10^{-6}$ | $0$ |
| $Hz \to t\bar{t}$ | $-0.002253$ | $-0.002253$ | $0$ | $0.01604$ | $0.01604$ | $0$ |
| $Hz \to u\bar{u}$ | $9.114 \cdot 10^{-5}$ | $9.114 \cdot 10^{-5}$ | $0$ | $7.056 \cdot 10^{-6}$ | $7.056 \cdot 10^{-6}$ | $0$ |
| $W^+ W^- \to H b\bar{b}$ | $-2.576 \cdot 10^{-7}$ | $-2.576 \cdot 10^{-7}$ | $0$ | $3.015 \cdot 10^{-9}$ | $3.015 \cdot 10^{-9}$ | $0$ |
| $W^+ W^- \to H c\bar{c}$ | $-2.77 \cdot 10^{-8}$ | $-2.77 \cdot 10^{-8}$ | $0$ | $5.016 \cdot 10^{-10}$ | $5.016 \cdot 10^{-10}$ | $0$ |
| $W^+ W^- \to H d\bar{d}$ | $-2.649 \cdot 10^{-7}$ | $-2.649 \cdot 10^{-7}$ | $0$ | $3.708 \cdot 10^{-9}$ | $3.708 \cdot 10^{-9}$ | $0$ |
| $W^+ W^- \to H t\bar{t}$ | $-2.676 \cdot 10^{-7}$ | $-2.676 \cdot 10^{-7}$ | $0$ | $3.002 \cdot 10^{-7}$ | $3.002 \cdot 10^{-7}$ | $0$ |
| $W^+ W^- \to W^+ W^-$ | $2.515$ | $2.515$ | $0$ | $0.03812$ | $0.03812$ | $0$ |
| $W^+ W^- \to \gamma \gamma$ | $-0.02145$ | $-0.02145$ | $0$ | $0.001133$ | $0.001133$ | $0$ |
| $W^+ W^- \to \gamma \gamma \gamma$ | $-3.321 \cdot 10^{-7}$ | $-3.321 \cdot 10^{-7}$ | $0$ | $2.633 \cdot 10^{-8}$ | $2.633 \cdot 10^{-8}$ | $0$ |
| $\gamma W^+ \to z W^+$ | $-0.02588$ | $-0.02588$ | $0$ | $0.0004878$ | $0.0004878$ | $0$ |
| $\mu^+ \mu^- \to \tau^+ \tau^-$ | $-0.001552$ | $-0.001552$ | $0$ | $9.644 \cdot 10^{-5}$ | $9.644 \cdot 10^{-5}$ | $0$ |
| $\nu_\tau \bar{\nu}_\tau \to \nu_\tau \bar{\nu}_\tau$ | $-1.171 \cdot 10^{-5}$ | $-1.171 \cdot 10^{-5}$ | $0$ | $1.775 \cdot 10^{-7}$ | $1.775 \cdot 10^{-7}$ | $0$ |
| $\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$ | $-0.0001433$ | $-0.0001433$ | $0$ | $2.171 \cdot 10^{-6}$ | $2.171 \cdot 10^{-6}$ | $0$ |
| $b\bar{b} \to \gamma \gamma$ | $-0.00205$ | $-0.00205$ | $0$ | $0.0001084$ | $0.0001084$ | $0$ |
| $b\bar{b} \to \mu^+ \mu^-$ | $-3.345 \cdot 10^{-5}$ | $-3.345 \cdot 10^{-5}$ | $0$ | $4.624 \cdot 10^{-6}$ | $4.624 \cdot 10^{-6}$ | $0$ |
| $b\bar{b} \to \nu_e \bar{\nu}_e$ | $-2.928 \cdot 10^{-5}$ | $-2.928 \cdot 10^{-5}$ | $0$ | $1.219 \cdot 10^{-6}$ | $1.219 \cdot 10^{-6}$ | $0$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| $b\bar{b} \to b\bar{b}$ | $-3.683 \cdot 10^{-6}$ | $-3.683 \cdot 10^{-6}$ | 0 | $3.436 \cdot 10^{-6}$ | $3.436 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $-0.0001274$ | $-0.0001274$ | 0 | $3.071 \cdot 10^{-6}$ | $3.071 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $0.00048$ | $0.00048$ | 0 | $3.863 \cdot 10^{-6}$ | $3.863 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to u\bar{u}$ | $-4.294 \cdot 10^{-5}$ | $-4.294 \cdot 10^{-5}$ | 0 | $3.333 \cdot 10^{-6}$ | $3.333 \cdot 10^{-6}$ | 0 |
| $c\bar{c} \to \mu^{+}\mu^{-}$ | $-0.0001606$ | $-0.0001606$ | 0 | $1.091 \cdot 10^{-5}$ | $1.091 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to c\bar{c}$ | $-8.579 \cdot 10^{-5}$ | $-8.579 \cdot 10^{-5}$ | 0 | $1.182 \cdot 10^{-5}$ | $1.182 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to e^{+}e^{-}$ | $-5.511 \cdot 10^{-5}$ | $-5.511 \cdot 10^{-5}$ | 0 | $1.021 \cdot 10^{-5}$ | $1.021 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to s\bar{s}$ | $-6.401 \cdot 10^{-5}$ | $-6.401 \cdot 10^{-5}$ | 0 | $1.694 \cdot 10^{-6}$ | $1.694 \cdot 10^{-6}$ | 0 |
| $e^{+}\nu_{\mu} \to e^{+}\nu_{\mu}$ | $-0.001405$ | $-0.001405$ | 0 | $9.783 \cdot 10^{-5}$ | $9.783 \cdot 10^{-5}$ | 0 |
| $e^{+}\nu_{e} \to e^{+}\nu_{e}$ | $-0.002301$ | $-0.002301$ | 0 | $0.0002531$ | $0.0002531$ | 0 |
| $e^{+}\tau^{-} \to e^{+}\tau^{-}$ | $-0.006529$ | $-0.006529$ | 0 | $0.0004238$ | $0.0004238$ | 0 |
| $e^{+}e^{-} \to \mu^{+}\mu^{-}$ | $-0.002013$ | $-0.002013$ | 0 | $0.0001185$ | $0.0001185$ | 0 |
| $e^{+}e^{-} \to e^{+}e^{-}$ | $-0.00439$ | $-0.00439$ | 0 | $0.000298$ | $0.000298$ | 0 |
| $s\bar{s} \to \nu_{\tau}\bar{\nu}_{\tau}$ | $-3.041 \cdot 10^{-5}$ | $-3.041 \cdot 10^{-5}$ | 0 | $1.931 \cdot 10^{-6}$ | $1.931 \cdot 10^{-6}$ | 0 |
| $s\bar{s} \to s\bar{s}$ | $0.003709$ | $0.003709$ | 0 | $1.28 \cdot 10^{-5}$ | $1.28 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to \nu_{\mu}\bar{\nu}_{\mu}$ | $8.215 \cdot 10^{-5}$ | $8.215 \cdot 10^{-5}$ | 0 | $8.462 \cdot 10^{-7}$ | $8.462 \cdot 10^{-7}$ | 0 |
| $t\bar{t} \to \tau^{+}\tau^{-}$ | $-0.000191$ | $-0.000191$ | 0 | $1.21 \cdot 10^{-5}$ | $1.21 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to c\bar{c}$ | $-0.0001274$ | $-0.0001274$ | 0 | $7.588 \cdot 10^{-6}$ | $7.588 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | $-3.436 \cdot 10^{-5}$ | $-3.436 \cdot 10^{-5}$ | 0 | $3.91 \cdot 10^{-6}$ | $3.91 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | $-6.732 \cdot 10^{-5}$ | $-6.732 \cdot 10^{-5}$ | 0 | $1.056 \cdot 10^{-5}$ | $1.056 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to t\bar{t}$ | $0.04546$ | $0.04546$ | 0 | $0.0009097$ | $0.0009097$ | 0 |
| $u\bar{d} \to u\bar{d}$ | $-0.01057$ | $-0.01057$ | 0 | $0.0009395$ | $0.0009395$ | 0 |
| $u\bar{u} \to \nu_{e}\bar{\nu}_{e}$ | $8.07 \cdot 10^{-5}$ | $8.07 \cdot 10^{-5}$ | 0 | $6.13 \cdot 10^{-7}$ | $6.13 \cdot 10^{-7}$ | 0 |
| $u\bar{u} \to c\bar{c}$ | $-0.0001102$ | $-0.0001102$ | 0 | $7.141 \cdot 10^{-6}$ | $7.141 \cdot 10^{-6}$ | 0 |
| $u\bar{u} \to u\bar{u}$ | $0.005843$ | $0.005843$ | 0 | $5.312 \cdot 10^{-5}$ | $5.312 \cdot 10^{-5}$ | 0 |
| $zz \to W^{+}W^{-}$ | $0.1179$ | $0.1179$ | 0 | $0.00179$ | $0.00179$ | 0 |
| $zz \to zz$ | $0.004934$ | $0.004934$ | 0 | $7.478 \cdot 10^{-5}$ | $7.478 \cdot 10^{-5}$ | 0 |

## 2.7    cHG

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $gg \to t\bar{t}$ | $-0.09152$ | $-0.09152$ | 0 | $0.04069$ | $0.04069$ | 0 |
| $gg \to u\bar{u}$ | $-1.194 \cdot 10^{-11}$ | $-1.194 \cdot 10^{-11}$ | 0 | $7.223 \cdot 10^{-12}$ | $7.223 \cdot 10^{-12}$ | 0 |

## 2.8 cHGtil

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $gg \to gg$ | $2.344 \cdot 10^{-18}$ | $2.344 \cdot 10^{-18}$ | 0 | $7.433 \cdot 10^{-34}$ | $7.433 \cdot 10^{-34}$ | 0 |
| $gg \to ggg$ | $-7.78 \cdot 10^{-15}$ | $-7.78 \cdot 10^{-15}$ | 0 | $8.694 \cdot 10^{-26}$ | $8.694 \cdot 10^{-26}$ | 0 |
| $gg \to t\bar{t}$ | $2.602 \cdot 10^{-18}$ | $2.602 \cdot 10^{-18}$ | 0 | $0.04069$ | $0.04069$ | 0 |
| $gg \to u\bar{u}$ | $1.377 \cdot 10^{-27}$ | $1.377 \cdot 10^{-27}$ | 0 | $7.223 \cdot 10^{-12}$ | $7.223 \cdot 10^{-12}$ | 0 |

## 2.9 cHQ1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $HH \to z\bar{b}b$ | $8.104 \cdot 10^{-7}$ | $8.104 \cdot 10^{-7}$ | 0 | $6.877 \cdot 10^{-7}$ | $6.877 \cdot 10^{-7}$ | 0 |
| $HH \to zt\bar{t}$ | $0.0005476$ | $0.0005476$ | 0 | $0.0002396$ | $0.0002396$ | 0 |
| $Hz \to b\bar{b}$ | $0.1557$ | $0.1557$ | 0 | $0.6719$ | $0.6719$ | 0 |
| $Hz \to t\bar{t}$ | $1.604$ | $1.604$ | 0 | $0.298$ | $0.298$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $8.422 \cdot 10^{-7}$ | $8.422 \cdot 10^{-7}$ | 0 | $1.274 \cdot 10^{-7}$ | $1.274 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-4.062 \cdot 10^{-7}$ | $-4.062 \cdot 10^{-7}$ | 0 | $1.91 \cdot 10^{-6}$ | $1.91 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $0.0001829$ | $0.0001829$ | 0 | $4.557 \cdot 10^{-6}$ | $4.557 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $0.0002766$ | $0.0002766$ | 0 | $9.846 \cdot 10^{-6}$ | $9.846 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to b\bar{b}$ | $-0.002244$ | $-0.002244$ | 0 | $2.573 \cdot 10^{-5}$ | $2.573 \cdot 10^{-5}$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $0.00121$ | $0.00121$ | 0 | $3.899 \cdot 10^{-5}$ | $3.899 \cdot 10^{-5}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-0.000623$ | $-0.000623$ | 0 | $3.297 \cdot 10^{-6}$ | $3.297 \cdot 10^{-6}$ | 0 |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $b\bar{b} \to u\bar{u}$ | 0.0003854 | 0.0003854 | 0 | $1.179 \cdot 10^{-5}$ | $1.179 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to \nu_\mu \bar{\nu}_\mu$ | $-0.0001068$ | $-0.0001068$ | 0 | $4.902 \cdot 10^{-6}$ | $4.902 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to \tau^+ \tau^-$ | $-0.0001209$ | $-0.0001209$ | 0 | $3.49 \cdot 10^{-6}$ | $3.49 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to c\bar{c}$ | $-0.0003498$ | $-0.0003498$ | 0 | $1.14 \cdot 10^{-5}$ | $1.14 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | $-0.0002273$ | $-0.0002273$ | 0 | $8.916 \cdot 10^{-6}$ | $8.916 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | $-0.0007236$ | $-0.0007236$ | 0 | $2.536 \cdot 10^{-5}$ | $2.536 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to t\bar{t}$ | 0.03896 | 0.03896 | 0 | 0.008544 | 0.008544 | 0 |

## 2.10 cHQ3

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to W^+ \bar{t}b$ | $9.992 \cdot 10^{-6}$ | $9.992 \cdot 10^{-6}$ | 0 | $1.38 \cdot 10^{-5}$ | $1.38 \cdot 10^{-5}$ | 0 |
| $HH \to z\bar{b}b$ | $1.587 \cdot 10^{-6}$ | $1.587 \cdot 10^{-6}$ | 0 | $3.02 \cdot 10^{-6}$ | $3.02 \cdot 10^{-6}$ | 0 |
| $HH \to zt\bar{t}$ | $-0.0002109$ | $-0.0002109$ | 0 | 0.0002284 | 0.0002284 | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-5.439 \cdot 10^{-7}$ | $-5.439 \cdot 10^{-7}$ | 0 | $8.228 \cdot 10^{-8}$ | $8.228 \cdot 10^{-8}$ | 0 |
| $HW^- \to \bar{t}b$ | $-0.6571$ | $-0.6571$ | 0 | 1.304 | 1.304 | 0 |
| $Hz \to b\bar{b}$ | 0.2213 | 0.2213 | 0 | 0.9528 | 0.9528 | 0 |
| $Hz \to t\bar{t}$ | $-1.973$ | $-1.973$ | 0 | 0.6405 | 0.6405 | 0 |
| $W^+ W^- \to Hb\bar{b}$ | $-1.648 \cdot 10^{-5}$ | $-1.648 \cdot 10^{-5}$ | 0 | $9.448 \cdot 10^{-7}$ | $9.448 \cdot 10^{-7}$ | 0 |
| $W^+ W^- \to Ht\bar{t}$ | $5.637 \cdot 10^{-6}$ | $5.637 \cdot 10^{-6}$ | 0 | $8.383 \cdot 10^{-6}$ | $8.383 \cdot 10^{-6}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | 0.0008963 | 0.0008963 | 0 | $2.717 \cdot 10^{-5}$ | $2.717 \cdot 10^{-5}$ | 0 |
| $b\bar{b} \to \mu^+ \mu^-$ | $8.356 \cdot 10^{-5}$ | $8.356 \cdot 10^{-5}$ | 0 | $2.921 \cdot 10^{-6}$ | $2.921 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to \nu_e \bar{\nu}_e$ | 0.0002177 | 0.0002177 | 0 | $7.749 \cdot 10^{-6}$ | $7.749 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to b\bar{b}$ | $-0.02018$ | $-0.02018$ | 0 | 0.0002647 | 0.0002647 | 0 |
| $b\bar{b} \to d\bar{d}$ | 0.000139 | 0.000139 | 0 | $4.984 \cdot 10^{-6}$ | $4.984 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | 0.009176 | 0.009176 | 0 | 0.004458 | 0.004458 | 0 |
| $b\bar{b} \to u\bar{u}$ | 0.0006247 | 0.0006247 | 0 | $1.807 \cdot 10^{-5}$ | $1.807 \cdot 10^{-5}$ | 0 |
| $b\bar{t} \to e^- \bar{\nu}_e$ | 0.001635 | 0.001635 | 0 | $4.956 \cdot 10^{-5}$ | $4.956 \cdot 10^{-5}$ | 0 |

| | mod1 | mod2 | 1 − mod2/mod1 | | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|---|
| $t\bar{t} \to \nu_\mu \bar{\nu}_\mu$ | 0.0005294 | 0.0005294 | 0 | | $2.313 \cdot 10^{-5}$ | $2.313 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to \tau^+ \tau^-$ | 0.0001888 | 0.0001888 | 0 | | $4.301 \cdot 10^{-6}$ | $4.301 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to c\bar{c}$ | 0.0004556 | 0.0004556 | 0 | | $1.371 \cdot 10^{-5}$ | $1.371 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.0001046 | 0.0001046 | 0 | | $5.042 \cdot 10^{-6}$ | $5.042 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.000781 | 0.000781 | 0 | | $2.73 \cdot 10^{-5}$ | $2.73 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to t\bar{t}$ | $-0.1312$ | $-0.1312$ | 0 | | 0.009042 | 0.009042 | 0 |

## 2.11 cHW

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | | mod1 | mod2 | 1 − mod2/mod1 |
| $HH \to Hzz$ | $-3.264 \cdot 10^{-6}$ | $-3.264 \cdot 10^{-6}$ | 0 | | $5.184 \cdot 10^{-6}$ | $5.184 \cdot 10^{-6}$ | 0 |
| $HH \to W^+ W^-$ | $-0.003125$ | $-0.003125$ | 0 | | 8.03 | 8.03 | 0 |
| $HH \to W^+ W^- \gamma$ | $-2.725 \cdot 10^{-7}$ | $-2.725 \cdot 10^{-7}$ | 0 | | 0.0001085 | 0.0001085 | 0 |
| $HH \to W^+ \bar{t} b$ | $-2.813 \cdot 10^{-6}$ | $-2.813 \cdot 10^{-6}$ | 0 | | $6.049 \cdot 10^{-6}$ | $6.049 \cdot 10^{-6}$ | 0 |
| $HH \to W^+ e^- \bar{\nu}_e$ | $6.46 \cdot 10^{-8}$ | $6.46 \cdot 10^{-8}$ | 0 | | $5.247 \cdot 10^{-7}$ | $5.247 \cdot 10^{-7}$ | 0 |
| $HH \to W^- u\bar{d}$ | $1.044 \cdot 10^{-8}$ | $1.044 \cdot 10^{-8}$ | 0 | | $2.361 \cdot 10^{-6}$ | $2.361 \cdot 10^{-6}$ | 0 |
| $HH \to z\bar{b}b$ | $2.029 \cdot 10^{-7}$ | $2.029 \cdot 10^{-7}$ | 0 | | $1.792 \cdot 10^{-5}$ | $1.792 \cdot 10^{-5}$ | 0 |
| $HH \to z\nu_e \bar{\nu}_e$ | $1.872 \cdot 10^{-7}$ | $1.872 \cdot 10^{-7}$ | 0 | | $2.537 \cdot 10^{-7}$ | $2.537 \cdot 10^{-7}$ | 0 |
| $HH \to zc\bar{c}$ | $7.359 \cdot 10^{-7}$ | $7.359 \cdot 10^{-7}$ | 0 | | $4.172 \cdot 10^{-6}$ | $4.172 \cdot 10^{-6}$ | 0 |
| $HH \to zd\bar{d}$ | $2.579 \cdot 10^{-6}$ | $2.579 \cdot 10^{-6}$ | 0 | | $8.784 \cdot 10^{-6}$ | $8.784 \cdot 10^{-6}$ | 0 |
| $HH \to ze^+ e^-$ | $9.597 \cdot 10^{-8}$ | $9.597 \cdot 10^{-8}$ | 0 | | $7.802 \cdot 10^{-7}$ | $7.802 \cdot 10^{-7}$ | 0 |
| $HH \to zt\bar{t}$ | $-1.585 \cdot 10^{-5}$ | $-1.585 \cdot 10^{-5}$ | 0 | | $3.252 \cdot 10^{-6}$ | $3.252 \cdot 10^{-6}$ | 0 |
| $HH \to zz$ | 0.02966 | 0.02966 | 0 | | 2.324 | 2.324 | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-2.956 \cdot 10^{-6}$ | $-2.956 \cdot 10^{-6}$ | 0 | | $1.509 \cdot 10^{-6}$ | $1.509 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $4.821 \cdot 10^{-8}$ | $4.821 \cdot 10^{-8}$ | 0 | | $5.739 \cdot 10^{-6}$ | $5.739 \cdot 10^{-6}$ | 0 |
| $HW^+ \to u\bar{d}$ | 0.01659 | 0.01659 | 0 | | 0.07783 | 0.07783 | 0 |
| $HW^- \to \bar{t}b$ | $-0.1055$ | $-0.1055$ | 0 | | 0.06885 | 0.06885 | 0 |
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $-1.61 \cdot 10^{-7}$ | $-1.61 \cdot 10^{-7}$ | 0 | | $1.655 \cdot 10^{-6}$ | $1.655 \cdot 10^{-6}$ | 0 |
| $HW^- \to \mu^- \bar{\nu}_\mu$ | 0.006514 | 0.006514 | 0 | | 0.03055 | 0.03055 | 0 |

| | mod1 | mod2 | $1-\mathtt{mod2}/\mathtt{mod1}$ | mod1 | mod2 | $1-\mathtt{mod2}/\mathtt{mod1}$ |
|---|---|---|---|---|---|---|
| $H\gamma \to b\bar{b}$ | $-1.267 \cdot 10^{-5}$ | $-1.267 \cdot 10^{-5}$ | 0 | 0.01303 | 0.01303 | 0 |
| $H\gamma \to c\bar{c}$ | $-2.077 \cdot 10^{-7}$ | $-2.077 \cdot 10^{-7}$ | 0 | 0.009423 | 0.009423 | 0 |
| $H\gamma \to d\bar{d}$ | $-1.24 \cdot 10^{-11}$ | $-1.24 \cdot 10^{-11}$ | 0 | 0.0125 | 0.0125 | 0 |
| $H\gamma \to e^+e^-$ | $-2.086 \cdot 10^{-13}$ | $-2.086 \cdot 10^{-13}$ | 0 | 0.004396 | 0.004396 | 0 |
| $H\gamma \to t\bar{t}$ | $-0.03258$ | $-0.03258$ | 0 | 0.01178 | 0.01178 | 0 |
| $Hz \to \mu^+\mu^-$ | 0.001542 | 0.001542 | 0 | 0.007831 | 0.007831 | 0 |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | 0.00362 | 0.00362 | 0 | 0.01025 | 0.01025 | 0 |
| $Hz \to b\bar{b}$ | 0.009514 | 0.009514 | 0 | 0.03193 | 0.03193 | 0 |
| $Hz \to s\bar{s}$ | 0.006166 | 0.006166 | 0 | 0.02049 | 0.02049 | 0 |
| $Hz \to t\bar{t}$ | $-0.08269$ | $-0.08269$ | 0 | 0.03501 | 0.03501 | 0 |
| $Hz \to u\bar{u}$ | 0.006045 | 0.006045 | 0 | 0.02428 | 0.02428 | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-7.675 \cdot 10^{-8}$ | $-7.675 \cdot 10^{-8}$ | 0 | $4.835 \cdot 10^{-8}$ | $4.835 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | $-1.331 \cdot 10^{-7}$ | $-1.331 \cdot 10^{-7}$ | 0 | $7.849 \cdot 10^{-8}$ | $7.849 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $-2.675 \cdot 10^{-6}$ | $-2.675 \cdot 10^{-6}$ | 0 | $1.138 \cdot 10^{-5}$ | $1.138 \cdot 10^{-5}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-9.358 \cdot 10^{-7}$ | $-9.358 \cdot 10^{-7}$ | 0 | $1.928 \cdot 10^{-5}$ | $1.928 \cdot 10^{-5}$ | 0 |
| $W^+W^- \to W^+W^-$ | 0.2915 | 0.2915 | 0 | 3.341 | 3.341 | 0 |
| $W^+W^- \to \gamma\gamma$ | $-0.01318$ | $-0.01318$ | 0 | 0.02279 | 0.02279 | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $3.524 \cdot 10^{-9}$ | $3.524 \cdot 10^{-9}$ | 0 | $2.47 \cdot 10^{-8}$ | $2.47 \cdot 10^{-8}$ | 0 |
| $\gamma W^+ \to zW^+$ | 0.04747 | 0.04747 | 0 | 0.06296 | 0.06296 | 0 |
| $b\bar{b} \to \gamma\gamma$ | $-1.134 \cdot 10^{-7}$ | $-1.134 \cdot 10^{-7}$ | 0 | $5.97 \cdot 10^{-7}$ | $5.97 \cdot 10^{-7}$ | 0 |
| $zz \to W^+W^-$ | $-0.3809$ | $-0.3809$ | 0 | 1.435 | 1.435 | 0 |
| $zz \to zz$ | 0.006042 | 0.006042 | 0 | 0.8989 | 0.8989 | 0 |

## 2.12   cHWB

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\mathtt{mod2}/\mathtt{mod1}$ | mod1 | mod2 | $1-\mathtt{mod2}/\mathtt{mod1}$ |
| $HH \to Hzz$ | $-2.855 \cdot 10^{-6}$ | $-2.855 \cdot 10^{-6}$ | 0 | $5.145 \cdot 10^{-6}$ | $5.145 \cdot 10^{-6}$ | 0 |
| $HH \to W^+W^-\gamma$ | $-0.0001825$ | $-0.0001825$ | 0 | $1.053 \cdot 10^{-5}$ | $1.053 \cdot 10^{-5}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $HH \to z\bar{b}b$ | $1.062 \cdot 10^{-7}$ | $1.062 \cdot 10^{-7}$ | 0 | $8.565 \cdot 10^{-8}$ | $8.565 \cdot 10^{-8}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $-5.232 \cdot 10^{-8}$ | $-5.232 \cdot 10^{-8}$ | 0 | $1.085 \cdot 10^{-7}$ | $1.085 \cdot 10^{-7}$ | 0 |
| $HH \to zc\bar{c}$ | $5.562 \cdot 10^{-6}$ | $5.562 \cdot 10^{-6}$ | 0 | $1.498 \cdot 10^{-5}$ | $1.498 \cdot 10^{-5}$ | 0 |
| $HH \to zd\bar{d}$ | $2.071 \cdot 10^{-7}$ | $2.071 \cdot 10^{-7}$ | 0 | $3.693 \cdot 10^{-7}$ | $3.693 \cdot 10^{-7}$ | 0 |
| $HH \to ze^+e^-$ | $-3.419 \cdot 10^{-8}$ | $-3.419 \cdot 10^{-8}$ | 0 | $1.901 \cdot 10^{-7}$ | $1.901 \cdot 10^{-7}$ | 0 |
| $HH \to zt\bar{t}$ | $-3.825 \cdot 10^{-6}$ | $-3.825 \cdot 10^{-6}$ | 0 | $7.133 \cdot 10^{-7}$ | $7.133 \cdot 10^{-7}$ | 0 |
| $HH \to zz$ | $0.05668$ | $0.05668$ | 0 | $0.7912$ | $0.7912$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-1.012 \cdot 10^{-6}$ | $-1.012 \cdot 10^{-6}$ | 0 | $1.078 \cdot 10^{-6}$ | $1.078 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $-4.915 \cdot 10^{-7}$ | $-4.915 \cdot 10^{-7}$ | 0 | $4.298 \cdot 10^{-6}$ | $4.298 \cdot 10^{-6}$ | 0 |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | $-2.015 \cdot 10^{-8}$ | $-2.015 \cdot 10^{-8}$ | 0 | $1.755 \cdot 10^{-8}$ | $1.755 \cdot 10^{-8}$ | 0 |
| $H\gamma \to b\bar{b}$ | $-1.889 \cdot 10^{-5}$ | $-1.889 \cdot 10^{-5}$ | 0 | $0.009422$ | $0.009422$ | 0 |
| $H\gamma \to c\bar{c}$ | $-7.553 \cdot 10^{-6}$ | $-7.553 \cdot 10^{-6}$ | 0 | $0.01375$ | $0.01375$ | 0 |
| $H\gamma \to d\bar{d}$ | $-2.466 \cdot 10^{-11}$ | $-2.466 \cdot 10^{-11}$ | 0 | $0.009927$ | $0.009927$ | 0 |
| $H\gamma \to e^+e^-$ | $-1.217 \cdot 10^{-12}$ | $-1.217 \cdot 10^{-12}$ | 0 | $0.007723$ | $0.007723$ | 0 |
| $H\gamma \to t\bar{t}$ | $-0.1285$ | $-0.1285$ | 0 | $0.0175$ | $0.0175$ | 0 |
| $Hz \to \mu^+\mu^-$ | $0.000682$ | $0.000682$ | 0 | $0.002033$ | $0.002033$ | 0 |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | $0.001774$ | $0.001774$ | 0 | $0.002692$ | $0.002692$ | 0 |
| $Hz \to b\bar{b}$ | $0.003276$ | $0.003276$ | 0 | $0.004021$ | $0.004021$ | 0 |
| $Hz \to s\bar{s}$ | $0.002859$ | $0.002859$ | 0 | $0.003302$ | $0.003302$ | 0 |
| $Hz \to t\bar{t}$ | $-0.01627$ | $-0.01627$ | 0 | $0.007793$ | $0.007793$ | 0 |
| $Hz \to u\bar{u}$ | $0.003297$ | $0.003297$ | 0 | $0.006171$ | $0.006171$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-1.064 \cdot 10^{-7}$ | $-1.064 \cdot 10^{-7}$ | 0 | $1.396 \cdot 10^{-8}$ | $1.396 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | $8.005 \cdot 10^{-9}$ | $8.005 \cdot 10^{-9}$ | 0 | $2.039 \cdot 10^{-7}$ | $2.039 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $-2.598 \cdot 10^{-8}$ | $-2.598 \cdot 10^{-8}$ | 0 | $1.542 \cdot 10^{-8}$ | $1.542 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $2.32 \cdot 10^{-5}$ | $2.32 \cdot 10^{-5}$ | 0 | $7.45 \cdot 10^{-7}$ | $7.45 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to W^+W^-$ | $0.6213$ | $0.6213$ | 0 | $0.04208$ | $0.04208$ | 0 |
| $W^+W^- \to \gamma\gamma$ | $-0.04994$ | $-0.04994$ | 0 | $0.08126$ | $0.08126$ | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $-3.571 \cdot 10^{-7}$ | $-3.571 \cdot 10^{-7}$ | 0 | $1.322 \cdot 10^{-7}$ | $1.322 \cdot 10^{-7}$ | 0 |
| $\gamma W^+ \to zW^+$ | $0.06142$ | $0.06142$ | 0 | $0.4787$ | $0.4787$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $\mu^+\mu^- \to \tau^+\tau^-$ | $-0.009911$ | $-0.009911$ | $0$ | $0.0008985$ | $0.0008985$ | $0$ |
| $b\bar{b} \to \gamma\gamma$ | $-3.803 \cdot 10^{-5}$ | $-3.803 \cdot 10^{-5}$ | $0$ | $6.362 \cdot 10^{-6}$ | $6.362 \cdot 10^{-6}$ | $0$ |
| $b\bar{b} \to \mu^+\mu^-$ | $-5.227 \cdot 10^{-5}$ | $-5.227 \cdot 10^{-5}$ | $0$ | $1.437 \cdot 10^{-5}$ | $1.437 \cdot 10^{-5}$ | $0$ |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $9.092 \cdot 10^{-5}$ | $9.092 \cdot 10^{-5}$ | $0$ | $1.07 \cdot 10^{-6}$ | $1.07 \cdot 10^{-6}$ | $0$ |
| $b\bar{b} \to b\bar{b}$ | $0.009449$ | $0.009449$ | $0$ | $8.671 \cdot 10^{-5}$ | $8.671 \cdot 10^{-5}$ | $0$ |
| $b\bar{b} \to d\bar{d}$ | $2.027 \cdot 10^{-5}$ | $2.027 \cdot 10^{-5}$ | $0$ | $1.103 \cdot 10^{-6}$ | $1.103 \cdot 10^{-6}$ | $0$ |
| $b\bar{b} \to t\bar{t}$ | $-0.0004979$ | $-0.0004979$ | $0$ | $1.618 \cdot 10^{-5}$ | $1.618 \cdot 10^{-5}$ | $0$ |
| $b\bar{b} \to u\bar{u}$ | $-6.567 \cdot 10^{-5}$ | $-6.567 \cdot 10^{-5}$ | $0$ | $1.74 \cdot 10^{-5}$ | $1.74 \cdot 10^{-5}$ | $0$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-0.0007871$ | $-0.0007871$ | $0$ | $7.222 \cdot 10^{-5}$ | $7.222 \cdot 10^{-5}$ | $0$ |
| $d\bar{d} \to c\bar{c}$ | $-9.782 \cdot 10^{-5}$ | $-9.782 \cdot 10^{-5}$ | $0$ | $2.358 \cdot 10^{-5}$ | $2.358 \cdot 10^{-5}$ | $0$ |
| $d\bar{d} \to e^+e^-$ | $-0.0001328$ | $-0.0001328$ | $0$ | $1.611 \cdot 10^{-5}$ | $1.611 \cdot 10^{-5}$ | $0$ |
| $d\bar{d} \to s\bar{s}$ | $1.958 \cdot 10^{-5}$ | $1.958 \cdot 10^{-5}$ | $0$ | $1.043 \cdot 10^{-6}$ | $1.043 \cdot 10^{-6}$ | $0$ |
| $e^+\nu_\mu \to e^+\nu_\mu$ | $-0.002497$ | $-0.002497$ | $0$ | $0.0002926$ | $0.0002926$ | $0$ |
| $e^+\nu_e \to e^+\nu_e$ | $0.0003354$ | $0.0003354$ | $0$ | $0.000521$ | $0.000521$ | $0$ |
| $e^+\tau^- \to e^+\tau^-$ | $-0.0105$ | $-0.0105$ | $0$ | $0.001674$ | $0.001674$ | $0$ |
| $e^+e^- \to \mu^+\mu^-$ | $-0.004287$ | $-0.004287$ | $0$ | $0.0007247$ | $0.0007247$ | $0$ |
| $e^+e^- \to e^+e^-$ | $-0.01181$ | $-0.01181$ | $0$ | $0.001995$ | $0.001995$ | $0$ |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | $0.0001812$ | $0.0001812$ | $0$ | $1.79 \cdot 10^{-6}$ | $1.79 \cdot 10^{-6}$ | $0$ |
| $s\bar{s} \to s\bar{s}$ | $0.01073$ | $0.01073$ | $0$ | $0.0001033$ | $0.0001033$ | $0$ |
| $t\bar{t} \to \nu_\mu\bar{\nu}_\mu$ | $0.0001423$ | $0.0001423$ | $0$ | $4.786 \cdot 10^{-6}$ | $4.786 \cdot 10^{-6}$ | $0$ |
| $t\bar{t} \to \tau^+\tau^-$ | $-0.001107$ | $-0.001107$ | $0$ | $9.683 \cdot 10^{-5}$ | $9.683 \cdot 10^{-5}$ | $0$ |
| $t\bar{t} \to c\bar{c}$ | $-0.001109$ | $-0.001109$ | $0$ | $9.83 \cdot 10^{-5}$ | $9.83 \cdot 10^{-5}$ | $0$ |
| $t\bar{t} \to d\bar{d}$ | $-3.008 \cdot 10^{-5}$ | $-3.008 \cdot 10^{-5}$ | $0$ | $1.516 \cdot 10^{-5}$ | $1.516 \cdot 10^{-5}$ | $0$ |
| $t\bar{t} \to s\bar{s}$ | $-2.811 \cdot 10^{-5}$ | $-2.811 \cdot 10^{-5}$ | $0$ | $1.713 \cdot 10^{-5}$ | $1.713 \cdot 10^{-5}$ | $0$ |
| $t\bar{t} \to t\bar{t}$ | $0.03003$ | $0.03003$ | $0$ | $0.0006622$ | $0.0006622$ | $0$ |
| $u\bar{d} \to u\bar{d}$ | $-0.0002551$ | $-0.0002551$ | $0$ | $0.0001295$ | $0.0001295$ | $0$ |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $-7.559 \cdot 10^{-5}$ | $-7.559 \cdot 10^{-5}$ | $0$ | $5.075 \cdot 10^{-6}$ | $5.075 \cdot 10^{-6}$ | $0$ |
| $u\bar{u} \to c\bar{c}$ | $-0.0008632$ | $-0.0008632$ | $0$ | $8.054 \cdot 10^{-5}$ | $8.054 \cdot 10^{-5}$ | $0$ |
| $u\bar{u} \to u\bar{u}$ | $0.003629$ | $0.003629$ | $0$ | $0.000328$ | $0.000328$ | $0$ |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| $zz \to W^+W^-$ | 0.2602 | 0.2602 | 0 | 0.1669 | 0.1669 | 0 |
| $zz \to zz$ | 0.003252 | 0.003252 | 0 | 0.2367 | 0.2367 | 0 |

## 2.13   cHWBtil

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to Hzz$ | $7.47 \cdot 10^{-7}$ | $7.47 \cdot 10^{-7}$ | 0 | $1.007 \cdot 10^{-5}$ | $1.007 \cdot 10^{-5}$ | 0 |
| $HH \to W^+W^-\gamma$ | $-2.013 \cdot 10^{-6}$ | $-2.013 \cdot 10^{-6}$ | 0 | $2.329 \cdot 10^{-5}$ | $2.329 \cdot 10^{-5}$ | 0 |
| $HH \to z\bar{b}b$ | $3.669 \cdot 10^{-7}$ | $3.669 \cdot 10^{-7}$ | 0 | $1.729 \cdot 10^{-6}$ | $1.729 \cdot 10^{-6}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $-1.6 \cdot 10^{-7}$ | $-1.6 \cdot 10^{-7}$ | 0 | $8.16 \cdot 10^{-7}$ | $8.16 \cdot 10^{-7}$ | 0 |
| $HH \to zc\bar{c}$ | $5.213 \cdot 10^{-8}$ | $5.213 \cdot 10^{-8}$ | 0 | $2.718 \cdot 10^{-8}$ | $2.718 \cdot 10^{-8}$ | 0 |
| $HH \to zd\bar{d}$ | $-1.251 \cdot 10^{-8}$ | $-1.251 \cdot 10^{-8}$ | 0 | $3.492 \cdot 10^{-7}$ | $3.492 \cdot 10^{-7}$ | 0 |
| $HH \to ze^+e^-$ | $7.379 \cdot 10^{-9}$ | $7.379 \cdot 10^{-9}$ | 0 | $1.664 \cdot 10^{-7}$ | $1.664 \cdot 10^{-7}$ | 0 |
| $HH \to zt\bar{t}$ | $-2.013 \cdot 10^{-7}$ | $-2.013 \cdot 10^{-7}$ | 0 | $3.143 \cdot 10^{-7}$ | $3.143 \cdot 10^{-7}$ | 0 |
| $HH \to zz$ | $-2.277 \cdot 10^{-18}$ | $-2.277 \cdot 10^{-18}$ | 0 | 0.8315 | 0.8315 | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $3.054 \cdot 10^{-7}$ | $3.054 \cdot 10^{-7}$ | 0 | $1.422 \cdot 10^{-6}$ | $1.422 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $6.927 \cdot 10^{-8}$ | $6.927 \cdot 10^{-8}$ | 0 | $1.991 \cdot 10^{-7}$ | $1.991 \cdot 10^{-7}$ | 0 |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | $-1.582 \cdot 10^{-8}$ | $-1.582 \cdot 10^{-8}$ | 0 | $4.42 \cdot 10^{-8}$ | $4.42 \cdot 10^{-8}$ | 0 |
| $H\gamma \to b\bar{b}$ | $7.472 \cdot 10^{-10}$ | $7.472 \cdot 10^{-10}$ | 0 | 0.007197 | 0.007197 | 0 |
| $H\gamma \to c\bar{c}$ | $4.102 \cdot 10^{-10}$ | $4.102 \cdot 10^{-10}$ | 0 | 0.01439 | 0.01439 | 0 |
| $H\gamma \to d\bar{d}$ | $-2.678 \cdot 10^{-16}$ | $-2.678 \cdot 10^{-16}$ | 0 | 0.006574 | 0.006574 | 0 |
| $H\gamma \to e^+e^-$ | $-2.455 \cdot 10^{-17}$ | $-2.455 \cdot 10^{-17}$ | 0 | 0.006538 | 0.006538 | 0 |
| $H\gamma \to t\bar{t}$ | $1.388 \cdot 10^{-5}$ | $1.388 \cdot 10^{-5}$ | 0 | 0.01277 | 0.01277 | 0 |
| $Hz \to \mu^+\mu^-$ | $-1.222 \cdot 10^{-7}$ | $-1.222 \cdot 10^{-7}$ | 0 | 0.002209 | 0.002209 | 0 |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | $-7.454 \cdot 10^{-20}$ | $-7.454 \cdot 10^{-20}$ | 0 | 0.003094 | 0.003094 | 0 |
| $Hz \to b\bar{b}$ | $-8.548 \cdot 10^{-8}$ | $-8.548 \cdot 10^{-8}$ | 0 | 0.003494 | 0.003494 | 0 |
| $Hz \to s\bar{s}$ | $6.947 \cdot 10^{-8}$ | $6.947 \cdot 10^{-8}$ | 0 | 0.00341 | 0.00341 | 0 |
| $Hz \to t\bar{t}$ | $-5.131 \cdot 10^{-6}$ | $-5.131 \cdot 10^{-6}$ | 0 | 0.004699 | 0.004699 | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| $Hz \to u\bar{u}$ | $-1.312 \cdot 10^{-7}$ | $-1.312 \cdot 10^{-7}$ | 0 | 0.003375 | 0.003375 | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-2.296 \cdot 10^{-8}$ | $-2.296 \cdot 10^{-8}$ | 0 | $1.636 \cdot 10^{-8}$ | $1.636 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | $8.743 \cdot 10^{-8}$ | $8.743 \cdot 10^{-8}$ | 0 | $4.798 \cdot 10^{-7}$ | $4.798 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $-3.298 \cdot 10^{-9}$ | $-3.298 \cdot 10^{-9}$ | 0 | $1.401 \cdot 10^{-8}$ | $1.401 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $1.96 \cdot 10^{-8}$ | $1.96 \cdot 10^{-8}$ | 0 | $1.844 \cdot 10^{-7}$ | $1.844 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to W^+W^-$ | $-2.013 \cdot 10^{-15}$ | $-2.013 \cdot 10^{-15}$ | 0 | 0.001982 | 0.001982 | 0 |
| $W^+W^- \to \gamma\gamma$ | $-3.41 \cdot 10^{-17}$ | $-3.41 \cdot 10^{-17}$ | 0 | 0.07495 | 0.07495 | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $1.14 \cdot 10^{-8}$ | $1.14 \cdot 10^{-8}$ | 0 | $8.041 \cdot 10^{-8}$ | $8.041 \cdot 10^{-8}$ | 0 |
| $\gamma W^+ \to zW^+$ | $2.64 \cdot 10^{-16}$ | $2.64 \cdot 10^{-16}$ | 0 | 0.4716 | 0.4716 | 0 |
| $b\bar{b} \to \gamma\gamma$ | $5.942 \cdot 10^{-25}$ | $5.942 \cdot 10^{-25}$ | 0 | $2.082 \cdot 10^{-6}$ | $2.082 \cdot 10^{-6}$ | 0 |
| $zz \to W^+W^-$ | $-2.905 \cdot 10^{-15}$ | $-2.905 \cdot 10^{-15}$ | 0 | 1.056 | 1.056 | 0 |
| $zz \to zz$ | $1.49 \cdot 10^{-18}$ | $1.49 \cdot 10^{-18}$ | 0 | 0.2309 | 0.2309 | 0 |

## 2.14 cHWtil

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to Hzz$ | $-1.144 \cdot 10^{-5}$ | $-1.144 \cdot 10^{-5}$ | 0 | $7.411 \cdot 10^{-6}$ | $7.411 \cdot 10^{-6}$ | 0 |
| $HH \to W^+W^-$ | $1.019 \cdot 10^{-14}$ | $1.019 \cdot 10^{-14}$ | 0 | 12.72 | 12.72 | 0 |
| $HH \to W^+W^-\gamma$ | $5.549 \cdot 10^{-7}$ | $5.549 \cdot 10^{-7}$ | 0 | 0.0003739 | 0.0003739 | 0 |
| $HH \to W^+\bar{t}b$ | $9.672 \cdot 10^{-7}$ | $9.672 \cdot 10^{-7}$ | 0 | $4.807 \cdot 10^{-6}$ | $4.807 \cdot 10^{-6}$ | 0 |
| $HH \to W^+e^-\bar{\nu}_e$ | $6.617 \cdot 10^{-8}$ | $6.617 \cdot 10^{-8}$ | 0 | $4.361 \cdot 10^{-6}$ | $4.361 \cdot 10^{-6}$ | 0 |
| $HH \to W^-u\bar{d}$ | $-3.145 \cdot 10^{-6}$ | $-3.145 \cdot 10^{-6}$ | 0 | $1.041 \cdot 10^{-5}$ | $1.041 \cdot 10^{-5}$ | 0 |
| $HH \to z\bar{b}b$ | $4.969 \cdot 10^{-7}$ | $4.969 \cdot 10^{-7}$ | 0 | $1.586 \cdot 10^{-6}$ | $1.586 \cdot 10^{-6}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $1.085 \cdot 10^{-7}$ | $1.085 \cdot 10^{-7}$ | 0 | $1.075 \cdot 10^{-6}$ | $1.075 \cdot 10^{-6}$ | 0 |
| $HH \to zc\bar{c}$ | $2.163 \cdot 10^{-6}$ | $2.163 \cdot 10^{-6}$ | 0 | $2.663 \cdot 10^{-5}$ | $2.663 \cdot 10^{-5}$ | 0 |
| $HH \to zd\bar{d}$ | $-1.094 \cdot 10^{-6}$ | $-1.094 \cdot 10^{-6}$ | 0 | $3.771 \cdot 10^{-6}$ | $3.771 \cdot 10^{-6}$ | 0 |
| $HH \to ze^+e^-$ | $-4.96 \cdot 10^{-8}$ | $-4.96 \cdot 10^{-8}$ | 0 | $6.687 \cdot 10^{-7}$ | $6.687 \cdot 10^{-7}$ | 0 |
| $HH \to zt\bar{t}$ | $3.655 \cdot 10^{-6}$ | $3.655 \cdot 10^{-6}$ | 0 | $4.143 \cdot 10^{-6}$ | $4.143 \cdot 10^{-6}$ | 0 |

89

| | | | | | | |
|---|---|---|---|---|---|---|
| $HH \to zz$ | $1.372 \cdot 10^{-16}$ | $1.372 \cdot 10^{-16}$ | 0 | 2.383 | 2.383 | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $2.032 \cdot 10^{-8}$ | $2.032 \cdot 10^{-8}$ | 0 | $8.371 \cdot 10^{-7}$ | $8.371 \cdot 10^{-7}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $-5.196 \cdot 10^{-9}$ | $-5.196 \cdot 10^{-9}$ | 0 | $5.89 \cdot 10^{-7}$ | $5.89 \cdot 10^{-7}$ | 0 |
| $HW^+ \to u\bar{d}$ | $-5.974 \cdot 10^{-15}$ | $-5.974 \cdot 10^{-15}$ | 0 | 0.05262 | 0.05262 | 0 |
| $HW^- \to \bar{t}b$ | $-3.847 \cdot 10^{-5}$ | $-3.847 \cdot 10^{-5}$ | 0 | 0.06272 | 0.06272 | 0 |
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $-5.876 \cdot 10^{-10}$ | $-5.876 \cdot 10^{-10}$ | 0 | $3.28 \cdot 10^{-8}$ | $3.28 \cdot 10^{-8}$ | 0 |
| $HW^- \to \mu^- \bar{\nu}_\mu$ | $-2.022 \cdot 10^{-11}$ | $-2.022 \cdot 10^{-11}$ | 0 | 0.03185 | 0.03185 | 0 |
| $H\gamma \to b\bar{b}$ | $-6.222 \cdot 10^{-10}$ | $-6.222 \cdot 10^{-10}$ | 0 | 0.009097 | 0.009097 | 0 |
| $H\gamma \to c\bar{c}$ | $3.898 \cdot 10^{-10}$ | $3.898 \cdot 10^{-10}$ | 0 | 0.01101 | 0.01101 | 0 |
| $H\gamma \to d\bar{d}$ | $-2.379 \cdot 10^{-15}$ | $-2.379 \cdot 10^{-15}$ | 0 | 0.01077 | 0.01077 | 0 |
| $H\gamma \to e^+ e^-$ | $4.312 \cdot 10^{-18}$ | $4.312 \cdot 10^{-18}$ | 0 | 0.002932 | 0.002932 | 0 |
| $H\gamma \to t\bar{t}$ | $-9.393 \cdot 10^{-5}$ | $-9.393 \cdot 10^{-5}$ | 0 | 0.01294 | 0.01294 | 0 |
| $Hz \to \mu^+ \mu^-$ | $6.939 \cdot 10^{-10}$ | $6.939 \cdot 10^{-10}$ | 0 | 0.006758 | 0.006758 | 0 |
| $Hz \to \nu_\tau \bar{\nu}_\tau$ | $-1.412 \cdot 10^{-22}$ | $-1.412 \cdot 10^{-22}$ | 0 | 0.01305 | 0.01305 | 0 |
| $Hz \to b\bar{b}$ | $1.912 \cdot 10^{-8}$ | $1.912 \cdot 10^{-8}$ | 0 | 0.02041 | 0.02041 | 0 |
| $Hz \to s\bar{s}$ | $-4.234 \cdot 10^{-7}$ | $-4.234 \cdot 10^{-7}$ | 0 | 0.03575 | 0.03575 | 0 |
| $Hz \to t\bar{t}$ | $1.108 \cdot 10^{-5}$ | $1.108 \cdot 10^{-5}$ | 0 | 0.02922 | 0.02922 | 0 |
| $Hz \to u\bar{u}$ | $8.442 \cdot 10^{-7}$ | $8.442 \cdot 10^{-7}$ | 0 | 0.03557 | 0.03557 | 0 |
| $W^+ W^- \to Hb\bar{b}$ | $2.8 \cdot 10^{-8}$ | $2.8 \cdot 10^{-8}$ | 0 | $1.858 \cdot 10^{-8}$ | $1.858 \cdot 10^{-8}$ | 0 |
| $W^+ W^- \to Hc\bar{c}$ | $5.25 \cdot 10^{-7}$ | $5.25 \cdot 10^{-7}$ | 0 | $4.741 \cdot 10^{-6}$ | $4.741 \cdot 10^{-6}$ | 0 |
| $W^+ W^- \to Hd\bar{d}$ | $7.293 \cdot 10^{-7}$ | $7.293 \cdot 10^{-7}$ | 0 | $1.58 \cdot 10^{-6}$ | $1.58 \cdot 10^{-6}$ | 0 |
| $W^+ W^- \to Ht\bar{t}$ | $1.861 \cdot 10^{-7}$ | $1.861 \cdot 10^{-7}$ | 0 | $2.509 \cdot 10^{-5}$ | $2.509 \cdot 10^{-5}$ | 0 |
| $W^+ W^- \to W^+ W^-$ | $-2.755 \cdot 10^{-15}$ | $-2.755 \cdot 10^{-15}$ | 0 | 3.439 | 3.439 | 0 |
| $W^+ W^- \to \gamma\gamma$ | $-1.34 \cdot 10^{-17}$ | $-1.34 \cdot 10^{-17}$ | 0 | 0.02279 | 0.02279 | 0 |
| $W^+ W^- \to \gamma\gamma\gamma$ | $-8.243 \cdot 10^{-10}$ | $-8.243 \cdot 10^{-10}$ | 0 | $2.561 \cdot 10^{-9}$ | $2.561 \cdot 10^{-9}$ | 0 |
| $\gamma W^+ \to zW^+$ | $-2.977 \cdot 10^{-17}$ | $-2.977 \cdot 10^{-17}$ | 0 | 0.106 | 0.106 | 0 |
| $b\bar{b} \to \gamma\gamma$ | $1.797 \cdot 10^{-24}$ | $1.797 \cdot 10^{-24}$ | 0 | $5.97 \cdot 10^{-7}$ | $5.97 \cdot 10^{-7}$ | 0 |
| $zz \to W^+ W^-$ | $1.304 \cdot 10^{-15}$ | $1.304 \cdot 10^{-15}$ | 0 | 1.434 | 1.434 | 0 |
| $zz \to zz$ | $3.045 \cdot 10^{-17}$ | $3.045 \cdot 10^{-17}$ | 0 | 0.9526 | 0.9526 | 0 |

## 2.15 cHbq

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to z\bar{b}b$ | $-2.521 \cdot 10^{-7}$ | $-2.521 \cdot 10^{-7}$ | 0 | $2.278 \cdot 10^{-6}$ | $2.278 \cdot 10^{-6}$ | 0 |
| $Hz \to b\bar{b}$ | $-0.01864$ | $-0.01864$ | 0 | $0.4877$ | $0.4877$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-3.001 \cdot 10^{-8}$ | $-3.001 \cdot 10^{-8}$ | 0 | $4.907 \cdot 10^{-7}$ | $4.907 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-8.574 \cdot 10^{-5}$ | $-8.574 \cdot 10^{-5}$ | 0 | $3.988 \cdot 10^{-6}$ | $3.988 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $-1.202 \cdot 10^{-5}$ | $-1.202 \cdot 10^{-5}$ | 0 | $2.455 \cdot 10^{-6}$ | $2.455 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to b\bar{b}$ | $1.871 \cdot 10^{-5}$ | $1.871 \cdot 10^{-5}$ | 0 | $0.0002213$ | $0.0002213$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $-2.569 \cdot 10^{-5}$ | $-2.569 \cdot 10^{-5}$ | 0 | $5.745 \cdot 10^{-6}$ | $5.745 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-0.0001138$ | $-0.0001138$ | 0 | $5.066 \cdot 10^{-6}$ | $5.066 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to u\bar{u}$ | $3.692 \cdot 10^{-5}$ | $3.692 \cdot 10^{-5}$ | 0 | $2.023 \cdot 10^{-5}$ | $2.023 \cdot 10^{-5}$ | 0 |

## 2.16 cHd

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to zd\bar{d}$ | $-2.127 \cdot 10^{-7}$ | $-2.127 \cdot 10^{-7}$ | 0 | $1.042 \cdot 10^{-6}$ | $1.042 \cdot 10^{-6}$ | 0 |
| $Hz \to s\bar{s}$ | $-0.04261$ | $-0.04261$ | 0 | $1.045$ | $1.045$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $-1.555 \cdot 10^{-7}$ | $-1.555 \cdot 10^{-7}$ | 0 | $8.943 \cdot 10^{-7}$ | $8.943 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $-7.933 \cdot 10^{-5}$ | $-7.933 \cdot 10^{-5}$ | 0 | $4.063 \cdot 10^{-5}$ | $4.063 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to c\bar{c}$ | $1.864 \cdot 10^{-5}$ | $1.864 \cdot 10^{-5}$ | 0 | $1.586 \cdot 10^{-5}$ | $1.586 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to e^+e^-$ | $8.589 \cdot 10^{-7}$ | $8.589 \cdot 10^{-7}$ | 0 | $3.181 \cdot 10^{-6}$ | $3.181 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to s\bar{s}$ | $-6.222 \cdot 10^{-5}$ | $-6.222 \cdot 10^{-5}$ | 0 | $2.379 \cdot 10^{-5}$ | $2.379 \cdot 10^{-5}$ | 0 |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | $-1.348 \cdot 10^{-5}$ | $-1.348 \cdot 10^{-5}$ | 0 | $2.751 \cdot 10^{-6}$ | $2.751 \cdot 10^{-6}$ | 0 |
| $s\bar{s} \to s\bar{s}$ | $0.01297$ | $0.01297$ | 0 | $0.00188$ | $0.00188$ | 0 |
| $t\bar{t} \to d\bar{d}$ | $-4.394 \cdot 10^{-5}$ | $-4.394 \cdot 10^{-5}$ | 0 | $6.283 \cdot 10^{-6}$ | $6.283 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | $-5.851 \cdot 10^{-5}$ | $-5.851 \cdot 10^{-5}$ | 0 | $5.468 \cdot 10^{-6}$ | $5.468 \cdot 10^{-6}$ | 0 |

| $u\bar{d} \to u\bar{d}$ | 0.000127 | 0.000127 | 0 | $5.927 \cdot 10^{-5}$ | $5.927 \cdot 10^{-5}$ | 0 |
|---|---|---|---|---|---|---|

## 2.17 cHe11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - $mod2/mod1 | mod1 | mod2 | $1 - $mod2/mod1 |
| $HH \to ze^+e^-$ | $-7.458 \cdot 10^{-7}$ | $-7.458 \cdot 10^{-7}$ | 0 | $3.692 \cdot 10^{-6}$ | $3.692 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to e^+e^-$ | $-3.807 \cdot 10^{-5}$ | $-3.807 \cdot 10^{-5}$ | 0 | $5.527 \cdot 10^{-6}$ | $5.527 \cdot 10^{-6}$ | 0 |
| $e^+\nu_\mu \to e^+\nu_\mu$ | $-0.006956$ | $-0.006956$ | 0 | 0.000473 | 0.000473 | 0 |
| $e^+\nu_e \to e^+\nu_e$ | $-0.001255$ | $-0.001255$ | 0 | $8.536 \cdot 10^{-5}$ | $8.536 \cdot 10^{-5}$ | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $-0.01905$ | $-0.01905$ | 0 | 0.003737 | 0.003737 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | 0.0005235 | 0.0005235 | 0 | $2.006 \cdot 10^{-5}$ | $2.006 \cdot 10^{-5}$ | 0 |
| $e^+e^- \to e^+e^-$ | 0.002594 | 0.002594 | 0 | $9.753 \cdot 10^{-5}$ | $9.753 \cdot 10^{-5}$ | 0 |

## 2.18 cHe22

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - $mod2/mod1 | mod1 | mod2 | $1 - $mod2/mod1 |
| $Hz \to \mu^+\mu^-$ | $-0.04239$ | $-0.04239$ | 0 | 0.3467 | 0.3467 | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $-0.0008$ | $-0.0008$ | 0 | $1.233 \cdot 10^{-5}$ | $1.233 \cdot 10^{-5}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-2.701 \cdot 10^{-5}$ | $-2.701 \cdot 10^{-5}$ | 0 | $2.526 \cdot 10^{-6}$ | $2.526 \cdot 10^{-6}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $7.558 \cdot 10^{-5}$ | $7.558 \cdot 10^{-5}$ | 0 | $1.113 \cdot 10^{-5}$ | $1.113 \cdot 10^{-5}$ | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $-0.000664$ | $-0.000664$ | 0 | $1.073 \cdot 10^{-5}$ | $1.073 \cdot 10^{-5}$ | 0 |

## 2.19 cHe33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - $mod2/mod1 | mod1 | mod2 | $1 - $mod2/mod1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $\mu^+\mu^- \to \tau^+\tau^-$ | 0.0004132 | 0.0004132 | 0 | $1.66 \cdot 10^{-5}$ | $1.66 \cdot 10^{-5}$ | 0 |
| $e^+\tau^- \to e^+\tau^-$ | 0.001111 | 0.001111 | 0 | $5.758 \cdot 10^{-5}$ | $5.758 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | $6.375 \cdot 10^{-5}$ | $6.375 \cdot 10^{-5}$ | 0 | $8.57 \cdot 10^{-6}$ | $8.57 \cdot 10^{-6}$ | 0 |

## 2.20   cHj1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to zc\bar{c}$ | $-5.184 \cdot 10^{-7}$ | $-5.184 \cdot 10^{-7}$ | 0 | $1.094 \cdot 10^{-7}$ | $1.094 \cdot 10^{-7}$ | 0 |
| $HH \to zd\bar{d}$ | $4.141 \cdot 10^{-6}$ | $4.141 \cdot 10^{-6}$ | 0 | $5.615 \cdot 10^{-6}$ | $5.615 \cdot 10^{-6}$ | 0 |
| $Hz \to s\bar{s}$ | 0.1745 | 0.1745 | 0 | 0.7473 | 0.7473 | 0 |
| $Hz \to u\bar{u}$ | $-0.034$ | $-0.034$ | 0 | 0.1763 | 0.1763 | 0 |
| $W^+W^- \to Hc\bar{c}$ | $-7.341 \cdot 10^{-7}$ | $-7.341 \cdot 10^{-7}$ | 0 | $6.91 \cdot 10^{-7}$ | $6.91 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $4.919 \cdot 10^{-6}$ | $4.919 \cdot 10^{-6}$ | 0 | $2.799 \cdot 10^{-7}$ | $2.799 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to d\bar{d}$ | 0.000139 | 0.000139 | 0 | $4.983 \cdot 10^{-6}$ | $4.983 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to u\bar{u}$ | $-0.0007484$ | $-0.0007484$ | 0 | $2.589 \cdot 10^{-5}$ | $2.589 \cdot 10^{-5}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $4.678 \cdot 10^{-5}$ | $4.678 \cdot 10^{-5}$ | 0 | $4.4 \cdot 10^{-6}$ | $4.4 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to c\bar{c}$ | $2.626 \cdot 10^{-5}$ | $2.626 \cdot 10^{-5}$ | 0 | $4.225 \cdot 10^{-6}$ | $4.225 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to e^+e^-$ | 0.0002672 | 0.0002672 | 0 | $6.417 \cdot 10^{-6}$ | $6.417 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to s\bar{s}$ | $4.823 \cdot 10^{-5}$ | $4.823 \cdot 10^{-5}$ | 0 | $3.854 \cdot 10^{-6}$ | $3.854 \cdot 10^{-6}$ | 0 |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | 0.0001919 | 0.0001919 | 0 | $6.831 \cdot 10^{-6}$ | $6.831 \cdot 10^{-6}$ | 0 |
| $s\bar{s} \to s\bar{s}$ | $1.362 \cdot 10^{-5}$ | $1.362 \cdot 10^{-5}$ | 0 | $6.547 \cdot 10^{-6}$ | $6.547 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to c\bar{c}$ | $-0.0004472$ | $-0.0004472$ | 0 | $1.283 \cdot 10^{-5}$ | $1.283 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.0001184 | 0.0001184 | 0 | $5.405 \cdot 10^{-6}$ | $5.405 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.0006384 | 0.0006384 | 0 | $1.819 \cdot 10^{-5}$ | $1.819 \cdot 10^{-5}$ | 0 |
| $u\bar{d} \to u\bar{d}$ | $-2.114 \cdot 10^{-5}$ | $-2.114 \cdot 10^{-5}$ | 0 | $3.185 \cdot 10^{-5}$ | $3.185 \cdot 10^{-5}$ | 0 |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $-0.0003543$ | $-0.0003543$ | 0 | $1.528 \cdot 10^{-5}$ | $1.528 \cdot 10^{-5}$ | 0 |
| $u\bar{u} \to c\bar{c}$ | $-8.151 \cdot 10^{-5}$ | $-8.151 \cdot 10^{-5}$ | 0 | $1.545 \cdot 10^{-5}$ | $1.545 \cdot 10^{-5}$ | 0 |
| $u\bar{u} \to u\bar{u}$ | 0.0005801 | 0.0005801 | 0 | 0.02441 | 0.02441 | 0 |

## 2.21 cHj3

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \mathtt{mod2/mod1}$ | mod1 | mod2 | $1 - \mathtt{mod2/mod1}$ |
| $HH \to W^- u\bar{d}$ | $1.723 \cdot 10^{-5}$ | $1.723 \cdot 10^{-5}$ | 0 | $6.463 \cdot 10^{-5}$ | $6.463 \cdot 10^{-5}$ | 0 |
| $HH \to zc\bar{c}$ | $6.139 \cdot 10^{-7}$ | $6.139 \cdot 10^{-7}$ | 0 | $1.609 \cdot 10^{-6}$ | $1.609 \cdot 10^{-6}$ | 0 |
| $HH \to zd\bar{d}$ | $1.82 \cdot 10^{-5}$ | $1.82 \cdot 10^{-5}$ | 0 | $6.042 \cdot 10^{-5}$ | $6.042 \cdot 10^{-5}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $1.147 \cdot 10^{-6}$ | $1.147 \cdot 10^{-6}$ | 0 | $5.349 \cdot 10^{-6}$ | $5.349 \cdot 10^{-6}$ | 0 |
| $HW^+ \to u\bar{d}$ | 0.1356 | 0.1356 | 0 | 0.6359 | 0.6359 | 0 |
| $Hz \to s\bar{s}$ | 0.1321 | 0.1321 | 0 | 0.5654 | 0.5654 | 0 |
| $Hz \to u\bar{u}$ | 0.1821 | 0.1821 | 0 | 0.9445 | 0.9445 | 0 |
| $W^+W^- \to Hc\bar{c}$ | $-5.551 \cdot 10^{-5}$ | $-5.551 \cdot 10^{-5}$ | 0 | $5.722 \cdot 10^{-5}$ | $5.722 \cdot 10^{-5}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $8.424 \cdot 10^{-7}$ | $8.424 \cdot 10^{-7}$ | 0 | $8.571 \cdot 10^{-7}$ | $8.571 \cdot 10^{-7}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | 0.000155 | 0.000155 | 0 | $4.698 \cdot 10^{-6}$ | $4.698 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to d\bar{d}$ | 0.0003525 | 0.0003525 | 0 | $1.163 \cdot 10^{-5}$ | $1.163 \cdot 10^{-5}$ | 0 |
| $b\bar{b} \to u\bar{u}$ | 0.000124 | 0.000124 | 0 | $5.305 \cdot 10^{-6}$ | $5.305 \cdot 10^{-6}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $-4.783 \cdot 10^{-5}$ | $-4.783 \cdot 10^{-5}$ | 0 | $4.48 \cdot 10^{-6}$ | $4.48 \cdot 10^{-6}$ | 0 |
| $c\bar{s} \to \tau^+\nu_\tau$ | 0.0007443 | 0.0007443 | 0 | $2.256 \cdot 10^{-5}$ | $2.256 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to c\bar{c}$ | 0.0001601 | 0.0001601 | 0 | $1.278 \cdot 10^{-5}$ | $1.278 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to e^+e^-$ | $7.591 \cdot 10^{-5}$ | $7.591 \cdot 10^{-5}$ | 0 | $2.863 \cdot 10^{-6}$ | $2.863 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to s\bar{s}$ | $5.832 \cdot 10^{-5}$ | $5.832 \cdot 10^{-5}$ | 0 | $4.471 \cdot 10^{-6}$ | $4.471 \cdot 10^{-6}$ | 0 |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | 0.0005309 | 0.0005309 | 0 | $1.89 \cdot 10^{-5}$ | $1.89 \cdot 10^{-5}$ | 0 |
| $s\bar{s} \to s\bar{s}$ | $-0.08061$ | $-0.08061$ | 0 | 0.003362 | 0.003362 | 0 |
| $t\bar{t} \to c\bar{c}$ | $5.69 \cdot 10^{-5}$ | $5.69 \cdot 10^{-5}$ | 0 | $5.413 \cdot 10^{-6}$ | $5.413 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.0002492 | 0.0002492 | 0 | $8.206 \cdot 10^{-6}$ | $8.206 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.001157 | 0.001157 | 0 | $3.254 \cdot 10^{-5}$ | $3.254 \cdot 10^{-5}$ | 0 |
| $u\bar{d} \to \mu^+\nu_\mu$ | $2.861 \cdot 10^{-5}$ | $2.861 \cdot 10^{-5}$ | 0 | $8.673 \cdot 10^{-7}$ | $8.673 \cdot 10^{-7}$ | 0 |
| $u\bar{d} \to c\bar{s}$ | 0.007146 | 0.007146 | 0 | 0.0004332 | 0.0004332 | 0 |
| $u\bar{d} \to u\bar{d}$ | $-0.02061$ | $-0.02061$ | 0 | 0.0213 | 0.0213 | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $1.662 \cdot 10^{-6}$ | $1.662 \cdot 10^{-6}$ | 0 | $7.168 \cdot 10^{-8}$ | $7.168 \cdot 10^{-8}$ | 0 |
| $u\bar{u} \to c\bar{c}$ | 0.0004623 | 0.0004623 | 0 | $3.076 \cdot 10^{-5}$ | $3.076 \cdot 10^{-5}$ | 0 |
| $u\bar{u} \to u\bar{u}$ | $-0.0004521$ | $-0.0004521$ | 0 | $2.586 \cdot 10^{-5}$ | $2.586 \cdot 10^{-5}$ | 0 |

## 2.22   cHl111

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to z\nu_e\bar{\nu}_e$ | $-6.785 \cdot 10^{-7}$ | $-6.785 \cdot 10^{-7}$ | 0 | $7.55 \cdot 10^{-7}$ | $7.55 \cdot 10^{-7}$ | 0 |
| $HH \to ze^+e^-$ | $5.255 \cdot 10^{-7}$ | $5.255 \cdot 10^{-7}$ | 0 | $1.319 \cdot 10^{-6}$ | $1.319 \cdot 10^{-6}$ | 0 |
| $\nu_e\bar{\nu}_e \to \nu_\mu\bar{\nu}_\mu$ | $-0.0001112$ | $-0.0001112$ | 0 | $3.37 \cdot 10^{-6}$ | $3.37 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $-5.283 \cdot 10^{-5}$ | $-5.283 \cdot 10^{-5}$ | 0 | $1.601 \cdot 10^{-6}$ | $1.601 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to e^+e^-$ | 0.0003745 | 0.0003745 | 0 | $1.38 \cdot 10^{-5}$ | $1.38 \cdot 10^{-5}$ | 0 |
| $e^+\nu_\mu \to e^+\nu_\mu$ | 0.009821 | 0.009821 | 0 | 0.0005371 | 0.0005371 | 0 |
| $e^+\nu_e \to e^+\nu_e$ | $-0.0005536$ | $-0.0005536$ | 0 | $1.884 \cdot 10^{-5}$ | $1.884 \cdot 10^{-5}$ | 0 |
| $e^+\tau^- \to e^+\tau^-$ | 0.001008 | 0.001008 | 0 | 0.0002088 | 0.0002088 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $-0.0001986$ | $-0.0001986$ | 0 | $9.394 \cdot 10^{-6}$ | $9.394 \cdot 10^{-6}$ | 0 |
| $e^+e^- \to e^+e^-$ | $-0.003388$ | $-0.003388$ | 0 | 0.0001507 | 0.0001507 | 0 |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $-0.0002265$ | $-0.0002265$ | 0 | $6.866 \cdot 10^{-6}$ | $6.866 \cdot 10^{-6}$ | 0 |

## 2.23   cHl122

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $Hz \to \mu^+\mu^-$ | 0.04421 | 0.04421 | 0 | 0.2908 | 0.2908 | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $-0.0003452$ | $-0.0003452$ | 0 | $1.133 \cdot 10^{-5}$ | $1.133 \cdot 10^{-5}$ | 0 |
| $\nu_e\bar{\nu}_e \to \nu_\mu\bar{\nu}_\mu$ | $-0.001227$ | $-0.001227$ | 0 | $3.72 \cdot 10^{-5}$ | $3.72 \cdot 10^{-5}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | 0.0001851 | 0.0001851 | 0 | $6.963 \cdot 10^{-6}$ | $6.963 \cdot 10^{-6}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $-5.487 \cdot 10^{-6}$ | $-5.487 \cdot 10^{-6}$ | 0 | $1.918 \cdot 10^{-6}$ | $1.918 \cdot 10^{-6}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $e^+\nu_\mu \to e^+\nu_\mu$ | $-0.002071$ | $-0.002071$ | $0$ | $6.276 \cdot 10^{-5}$ | $6.276 \cdot 10^{-5}$ | $0$ |
| $e^+e^- \to \mu^+\mu^-$ | $-0.0004486$ | $-0.0004486$ | $0$ | $1.378 \cdot 10^{-5}$ | $1.378 \cdot 10^{-5}$ | $0$ |
| $t\bar{t} \to \nu_\mu\bar{\nu}_\mu$ | $-5.288 \cdot 10^{-5}$ | $-5.288 \cdot 10^{-5}$ | $0$ | $1.603 \cdot 10^{-6}$ | $1.603 \cdot 10^{-6}$ | $0$ |

## 2.24 cHl133

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | $-0.08573$ | $-0.08573$ | $0$ | $0.3125$ | $0.3125$ | $0$ |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $-0.000157$ | $-0.000157$ | $0$ | $9.069 \cdot 10^{-6}$ | $9.069 \cdot 10^{-6}$ | $0$ |
| $\nu_\tau\bar{\nu}_\tau \to \nu_\tau\bar{\nu}_\tau$ | $-0.02255$ | $-0.02255$ | $0$ | $0.001367$ | $0.001367$ | $0$ |
| $e^+\tau^- \to e^+\tau^-$ | $0.01232$ | $0.01232$ | $0$ | $0.0008574$ | $0.0008574$ | $0$ |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | $-0.0001758$ | $-0.0001758$ | $0$ | $5.33 \cdot 10^{-6}$ | $5.33 \cdot 10^{-6}$ | $0$ |
| $t\bar{t} \to \tau^+\tau^-$ | $0.0002751$ | $0.0002751$ | $0$ | $6.892 \cdot 10^{-6}$ | $6.892 \cdot 10^{-6}$ | $0$ |

## 2.25 cHl311

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to HH$ | $-0.02519$ | $-0.02519$ | $0$ | $0.0007635$ | $0.0007635$ | $0$ |
| $HH \to HHH$ | $-1.796 \cdot 10^{-7}$ | $-1.796 \cdot 10^{-7}$ | $0$ | $8.164 \cdot 10^{-9}$ | $8.164 \cdot 10^{-9}$ | $0$ |
| $HH \to H\tau^+\tau^-$ | $-5.522 \cdot 10^{-12}$ | $-5.522 \cdot 10^{-12}$ | $0$ | $2.511 \cdot 10^{-13}$ | $2.511 \cdot 10^{-13}$ | $0$ |
| $HH \to Hb\bar{b}$ | $-4.783 \cdot 10^{-11}$ | $-4.783 \cdot 10^{-11}$ | $0$ | $2.175 \cdot 10^{-12}$ | $2.175 \cdot 10^{-12}$ | $0$ |
| $HH \to Hs\bar{s}$ | $-2.096 \cdot 10^{-13}$ | $-2.096 \cdot 10^{-13}$ | $0$ | $9.53 \cdot 10^{-15}$ | $9.53 \cdot 10^{-15}$ | $0$ |
| $HH \to Ht\bar{t}$ | $-1.196 \cdot 10^{-5}$ | $-1.196 \cdot 10^{-5}$ | $0$ | $5.437 \cdot 10^{-7}$ | $5.437 \cdot 10^{-7}$ | $0$ |
| $HH \to Hu\bar{u}$ | $-1.693 \cdot 10^{-17}$ | $-1.693 \cdot 10^{-17}$ | $0$ | $7.698 \cdot 10^{-19}$ | $7.698 \cdot 10^{-19}$ | $0$ |
| $HH \to Hzz$ | $-1.274 \cdot 10^{-6}$ | $-1.274 \cdot 10^{-6}$ | $0$ | $5.792 \cdot 10^{-8}$ | $5.792 \cdot 10^{-8}$ | $0$ |
| $HH \to W^+W^-$ | $-0.1977$ | $-0.1977$ | $0$ | $0.005992$ | $0.005992$ | $0$ |
| $HH \to W^+W^-\gamma$ | $-3.58 \cdot 10^{-7}$ | $-3.58 \cdot 10^{-7}$ | $0$ | $1.628 \cdot 10^{-8}$ | $1.628 \cdot 10^{-8}$ | $0$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| $HH \to W^+\bar{t}b$ | $-9.435 \cdot 10^{-6}$ | $-9.435 \cdot 10^{-6}$ | 0 | $4.29 \cdot 10^{-7}$ | $4.29 \cdot 10^{-7}$ | 0 |
| $HH \to W^+e^-\bar{\nu}_e$ | $6.692 \cdot 10^{-7}$ | $6.692 \cdot 10^{-7}$ | 0 | $7.456 \cdot 10^{-7}$ | $7.456 \cdot 10^{-7}$ | 0 |
| $HH \to W^-u\bar{d}$ | $-1.132 \cdot 10^{-7}$ | $-1.132 \cdot 10^{-7}$ | 0 | $5.148 \cdot 10^{-9}$ | $5.148 \cdot 10^{-9}$ | 0 |
| $HH \to z\bar{b}b$ | $-2.126 \cdot 10^{-8}$ | $-2.126 \cdot 10^{-8}$ | 0 | $9.668 \cdot 10^{-10}$ | $9.668 \cdot 10^{-10}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $1.452 \cdot 10^{-6}$ | $1.452 \cdot 10^{-6}$ | 0 | $1.639 \cdot 10^{-6}$ | $1.639 \cdot 10^{-6}$ | 0 |
| $HH \to zc\bar{c}$ | $-3.936 \cdot 10^{-7}$ | $-3.936 \cdot 10^{-7}$ | 0 | $1.79 \cdot 10^{-8}$ | $1.79 \cdot 10^{-8}$ | 0 |
| $HH \to zd\bar{d}$ | $-1.027 \cdot 10^{-6}$ | $-1.027 \cdot 10^{-6}$ | 0 | $4.669 \cdot 10^{-8}$ | $4.669 \cdot 10^{-8}$ | 0 |
| $HH \to ze^+e^-$ | $3.953 \cdot 10^{-7}$ | $3.953 \cdot 10^{-7}$ | 0 | $7.886 \cdot 10^{-7}$ | $7.886 \cdot 10^{-7}$ | 0 |
| $HH \to zt\bar{t}$ | $-6.044 \cdot 10^{-6}$ | $-6.044 \cdot 10^{-6}$ | 0 | $2.748 \cdot 10^{-7}$ | $2.748 \cdot 10^{-7}$ | 0 |
| $HH \to zz$ | $-0.1409$ | $-0.1409$ | 0 | $0.004272$ | $0.004272$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-2.446 \cdot 10^{-6}$ | $-2.446 \cdot 10^{-6}$ | 0 | $1.112 \cdot 10^{-7}$ | $1.112 \cdot 10^{-7}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $-1.34 \cdot 10^{-7}$ | $-1.34 \cdot 10^{-7}$ | 0 | $6.091 \cdot 10^{-9}$ | $6.091 \cdot 10^{-9}$ | 0 |
| $HW^+ \to u\bar{d}$ | $-0.002825$ | $-0.002825$ | 0 | $8.563 \cdot 10^{-5}$ | $8.563 \cdot 10^{-5}$ | 0 |
| $HW^- \to \bar{t}b$ | $-0.02413$ | $-0.02413$ | 0 | $0.0007316$ | $0.0007316$ | 0 |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | $2.663 \cdot 10^{-9}$ | $2.663 \cdot 10^{-9}$ | 0 | $1.207 \cdot 10^{-8}$ | $1.207 \cdot 10^{-8}$ | 0 |
| $HW^- \to \mu^-\bar{\nu}_\mu$ | $-0.0007822$ | $-0.0007822$ | 0 | $2.371 \cdot 10^{-5}$ | $2.371 \cdot 10^{-5}$ | 0 |
| $H\gamma \to b\bar{b}$ | $-8.868 \cdot 10^{-6}$ | $-8.868 \cdot 10^{-6}$ | 0 | $2.688 \cdot 10^{-7}$ | $2.688 \cdot 10^{-7}$ | 0 |
| $H\gamma \to c\bar{c}$ | $-3.364 \cdot 10^{-6}$ | $-3.364 \cdot 10^{-6}$ | 0 | $1.02 \cdot 10^{-7}$ | $1.02 \cdot 10^{-7}$ | 0 |
| $H\gamma \to d\bar{d}$ | $-6.067 \cdot 10^{-10}$ | $-6.067 \cdot 10^{-10}$ | 0 | $1.839 \cdot 10^{-11}$ | $1.839 \cdot 10^{-11}$ | 0 |
| $H\gamma \to e^+e^-$ | $-1.023 \cdot 10^{-12}$ | $-1.023 \cdot 10^{-12}$ | 0 | $3.1 \cdot 10^{-14}$ | $3.1 \cdot 10^{-14}$ | 0 |
| $H\gamma \to t\bar{t}$ | $-0.05015$ | $-0.05015$ | 0 | $0.00152$ | $0.00152$ | 0 |
| $Hz \to \mu^+\mu^-$ | $-0.0003526$ | $-0.0003526$ | 0 | $1.069 \cdot 10^{-5}$ | $1.069 \cdot 10^{-5}$ | 0 |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | $-0.0005905$ | $-0.0005905$ | 0 | $1.79 \cdot 10^{-5}$ | $1.79 \cdot 10^{-5}$ | 0 |
| $Hz \to b\bar{b}$ | $-0.0008365$ | $-0.0008365$ | 0 | $2.536 \cdot 10^{-5}$ | $2.536 \cdot 10^{-5}$ | 0 |
| $Hz \to s\bar{s}$ | $-0.001715$ | $-0.001715$ | 0 | $5.198 \cdot 10^{-5}$ | $5.198 \cdot 10^{-5}$ | 0 |
| $Hz \to t\bar{t}$ | $-0.5189$ | $-0.5189$ | 0 | $0.01573$ | $0.01573$ | 0 |
| $Hz \to u\bar{u}$ | $-0.0007462$ | $-0.0007462$ | 0 | $2.262 \cdot 10^{-5}$ | $2.262 \cdot 10^{-5}$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-5.391 \cdot 10^{-6}$ | $-5.391 \cdot 10^{-6}$ | 0 | $2.451 \cdot 10^{-7}$ | $2.451 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | $-4.628 \cdot 10^{-7}$ | $-4.628 \cdot 10^{-7}$ | 0 | $2.104 \cdot 10^{-8}$ | $2.104 \cdot 10^{-8}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $W^+W^- \to Hd\bar{d}$ | $-3.494 \cdot 10^{-7}$ | $-3.494 \cdot 10^{-7}$ | 0 | $1.589 \cdot 10^{-8}$ | $1.589 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-1.802 \cdot 10^{-5}$ | $-1.802 \cdot 10^{-5}$ | 0 | $8.192 \cdot 10^{-7}$ | $8.192 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to W^+W^-$ | $-1.139$ | $-1.139$ | 0 | $0.03454$ | $0.03454$ | 0 |
| $W^+W^- \to \gamma\gamma$ | $-0.04842$ | $-0.04842$ | 0 | $0.001468$ | $0.001468$ | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $-3.929 \cdot 10^{-6}$ | $-3.929 \cdot 10^{-6}$ | 0 | $1.787 \cdot 10^{-7}$ | $1.787 \cdot 10^{-7}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | $-0.001622$ | $-0.001622$ | 0 | $4.917 \cdot 10^{-5}$ | $4.917 \cdot 10^{-5}$ | 0 |
| $\gamma W^+ \to zW^+$ | $-0.04476$ | $-0.04476$ | 0 | $0.001357$ | $0.001357$ | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $-0.001651$ | $-0.001651$ | 0 | $5.005 \cdot 10^{-5}$ | $5.005 \cdot 10^{-5}$ | 0 |
| $\nu_\tau\bar{\nu}_\tau \to \nu_\tau\bar{\nu}_\tau$ | $-6.407 \cdot 10^{-7}$ | $-6.407 \cdot 10^{-7}$ | 0 | $1.942 \cdot 10^{-8}$ | $1.942 \cdot 10^{-8}$ | 0 |
| $\nu_e\bar{\nu}_e \to \nu_\mu\bar{\nu}_\mu$ | $8.245 \cdot 10^{-22}$ | $8.245 \cdot 10^{-22}$ | 0 | $2.939 \cdot 10^{-39}$ | $2.939 \cdot 10^{-39}$ | 0 |
| $b\bar{b} \to \gamma\gamma$ | $-3.967 \cdot 10^{-5}$ | $-3.967 \cdot 10^{-5}$ | 0 | $1.203 \cdot 10^{-6}$ | $1.203 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-0.0003162$ | $-0.0003162$ | 0 | $9.585 \cdot 10^{-6}$ | $9.585 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $7.843 \cdot 10^{-22}$ | $7.937 \cdot 10^{-22}$ | $-0.01187$ | $4.191 \cdot 10^{-39}$ | $4.287 \cdot 10^{-39}$ | $-0.02312$ |
| $b\bar{b} \to b\bar{b}$ | $0.0001023$ | $0.0001023$ | 0 | $8.111 \cdot 10^{-7}$ | $8.111 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $-0.001133$ | $-0.001133$ | 0 | $3.433 \cdot 10^{-5}$ | $3.433 \cdot 10^{-5}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-0.00198$ | $-0.00198$ | 0 | $0.001057$ | $0.001057$ | 0 |
| $b\bar{b} \to u\bar{u}$ | $-8.011 \cdot 10^{-5}$ | $-8.011 \cdot 10^{-5}$ | 0 | $2.428 \cdot 10^{-6}$ | $2.428 \cdot 10^{-6}$ | 0 |
| $b\bar{t} \to e^-\bar{\nu}_e$ | $1.967 \cdot 10^{-20}$ | $1.967 \cdot 10^{-20}$ | 0 | $4.575 \cdot 10^{-36}$ | $4.575 \cdot 10^{-36}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $-0.0004374$ | $-0.0004374$ | 0 | $1.326 \cdot 10^{-5}$ | $1.326 \cdot 10^{-5}$ | 0 |
| $c\bar{s} \to \tau^+\nu_\tau$ | $-0.0005913$ | $-0.0005913$ | 0 | $1.792 \cdot 10^{-5}$ | $1.792 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to c\bar{c}$ | $-0.001025$ | $-0.001025$ | 0 | $3.106 \cdot 10^{-5}$ | $3.106 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to e^+e^-$ | $-5.469 \cdot 10^{-6}$ | $-5.469 \cdot 10^{-6}$ | 0 | $1.305 \cdot 10^{-6}$ | $1.305 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to s\bar{s}$ | $-0.001199$ | $-0.001199$ | 0 | $3.634 \cdot 10^{-5}$ | $3.634 \cdot 10^{-5}$ | 0 |
| $e^+\nu_\mu \to e^+\nu_\mu$ | $-0.002127$ | $-0.002127$ | 0 | $0.0005548$ | $0.0005548$ | 0 |
| $e^+\nu_e \to \mu^+\nu_\mu$ | $3.705 \cdot 10^{-19}$ | $3.705 \cdot 10^{-19}$ | 0 | $1.505 \cdot 10^{-36}$ | $1.505 \cdot 10^{-36}$ | 0 |
| $e^+\nu_e \to e^+\nu_e$ | $6.335 \cdot 10^{-9}$ | $6.335 \cdot 10^{-9}$ | 0 | $2.322 \cdot 10^{-10}$ | $2.322 \cdot 10^{-10}$ | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $-0.001488$ | $-0.001488$ | 0 | $7.459 \cdot 10^{-5}$ | $7.459 \cdot 10^{-5}$ | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $-0.001405$ | $-0.001405$ | 0 | $3.813 \cdot 10^{-5}$ | $3.813 \cdot 10^{-5}$ | 0 |
| $e^+e^- \to e^+e^-$ | $-0.00437$ | $-0.00437$ | 0 | $0.0002631$ | $0.0002631$ | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | $-0.000289$ | $-0.000289$ | $0$ | $8.76 \cdot 10^{-6}$ | $8.76 \cdot 10^{-6}$ | $0$ |
| $s\bar{s} \to s\bar{s}$ | $0.001287$ | $0.001287$ | $0$ | $5.443 \cdot 10^{-6}$ | $5.443 \cdot 10^{-6}$ | $0$ |
| $t\bar{t} \to \nu_\mu\bar{\nu}_\mu$ | $-5.182 \cdot 10^{-5}$ | $-5.182 \cdot 10^{-5}$ | $0$ | $1.571 \cdot 10^{-6}$ | $1.571 \cdot 10^{-6}$ | $0$ |
| $t\bar{t} \to \tau^+\tau^-$ | $-9.826 \cdot 10^{-5}$ | $-9.826 \cdot 10^{-5}$ | $0$ | $2.979 \cdot 10^{-6}$ | $2.979 \cdot 10^{-6}$ | $0$ |
| $t\bar{t} \to c\bar{c}$ | $-0.0003092$ | $-0.0003092$ | $0$ | $9.372 \cdot 10^{-6}$ | $9.372 \cdot 10^{-6}$ | $0$ |
| $t\bar{t} \to d\bar{d}$ | $-0.0009769$ | $-0.0009769$ | $0$ | $2.961 \cdot 10^{-5}$ | $2.961 \cdot 10^{-5}$ | $0$ |
| $t\bar{t} \to s\bar{s}$ | $-0.0009707$ | $-0.0009707$ | $0$ | $2.942 \cdot 10^{-5}$ | $2.942 \cdot 10^{-5}$ | $0$ |
| $t\bar{t} \to t\bar{t}$ | $0.048$ | $0.048$ | $0$ | $0.00354$ | $0.00354$ | $0$ |
| $u\bar{d} \to \mu^+\nu_\mu$ | $-0.000267$ | $-0.000267$ | $0$ | $8.093 \cdot 10^{-6}$ | $8.093 \cdot 10^{-6}$ | $0$ |
| $u\bar{d} \to c\bar{s}$ | $-0.001461$ | $-0.001461$ | $0$ | $4.428 \cdot 10^{-5}$ | $4.428 \cdot 10^{-5}$ | $0$ |
| $u\bar{d} \to u\bar{d}$ | $0.0009916$ | $0.0009916$ | $0$ | $2.725 \cdot 10^{-5}$ | $2.725 \cdot 10^{-5}$ | $0$ |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $2.554 \cdot 10^{-20}$ | $2.554 \cdot 10^{-20}$ | $0$ | $1.743 \cdot 10^{-37}$ | $1.743 \cdot 10^{-37}$ | $0$ |
| $u\bar{u} \to c\bar{c}$ | $-0.000212$ | $-0.000212$ | $0$ | $6.425 \cdot 10^{-6}$ | $6.425 \cdot 10^{-6}$ | $0$ |
| $u\bar{u} \to u\bar{u}$ | $0.007977$ | $0.007977$ | $0$ | $3.741 \cdot 10^{-5}$ | $3.741 \cdot 10^{-5}$ | $0$ |
| $zz \to W^+W^-$ | $-3.921$ | $-3.921$ | $0$ | $0.1188$ | $0.1188$ | $0$ |
| $zz \to zz$ | $-0.009826$ | $-0.009826$ | $0$ | $0.0002979$ | $0.0002979$ | $0$ |

## 2.26   cHl322

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to HH$ | $-0.01114$ | $-0.01114$ | $0$ | $0.0003378$ | $0.0003378$ | $0$ |
| $HH \to HHH$ | $-7.446 \cdot 10^{-8}$ | $-7.446 \cdot 10^{-8}$ | $0$ | $3.385 \cdot 10^{-9}$ | $3.385 \cdot 10^{-9}$ | $0$ |
| $HH \to H\tau^+\tau^-$ | $-9.779 \cdot 10^{-12}$ | $-9.779 \cdot 10^{-12}$ | $0$ | $4.446 \cdot 10^{-13}$ | $4.446 \cdot 10^{-13}$ | $0$ |
| $HH \to Hb\bar{b}$ | $-3.271 \cdot 10^{-11}$ | $-3.271 \cdot 10^{-11}$ | $0$ | $1.487 \cdot 10^{-12}$ | $1.487 \cdot 10^{-12}$ | $0$ |
| $HH \to Hs\bar{s}$ | $-2.042 \cdot 10^{-13}$ | $-2.042 \cdot 10^{-13}$ | $0$ | $9.283 \cdot 10^{-15}$ | $9.283 \cdot 10^{-15}$ | $0$ |
| $HH \to Ht\bar{t}$ | $-1.896 \cdot 10^{-7}$ | $-1.896 \cdot 10^{-7}$ | $0$ | $8.622 \cdot 10^{-9}$ | $8.622 \cdot 10^{-9}$ | $0$ |
| $HH \to Hu\bar{u}$ | $-3.197 \cdot 10^{-17}$ | $-3.197 \cdot 10^{-17}$ | $0$ | $1.454 \cdot 10^{-18}$ | $1.454 \cdot 10^{-18}$ | $0$ |
| $HH \to Hzz$ | $-9.751 \cdot 10^{-7}$ | $-9.751 \cdot 10^{-7}$ | $0$ | $4.434 \cdot 10^{-8}$ | $4.434 \cdot 10^{-8}$ | $0$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| $HH \to W^+W^-$ | $-0.01363$ | $-0.01363$ | $0$ | $0.0004133$ | $0.0004133$ | $0$ |
| $HH \to W^+W^-\gamma$ | $-1.808 \cdot 10^{-5}$ | $-1.808 \cdot 10^{-5}$ | $0$ | $8.218 \cdot 10^{-7}$ | $8.218 \cdot 10^{-7}$ | $0$ |
| $HH \to W^+\bar{t}b$ | $-0.0003469$ | $-0.0003469$ | $0$ | $1.577 \cdot 10^{-5}$ | $1.577 \cdot 10^{-5}$ | $0$ |
| $HH \to W^+e^-\bar{\nu}_e$ | $-4.461 \cdot 10^{-8}$ | $-4.461 \cdot 10^{-8}$ | $0$ | $2.028 \cdot 10^{-9}$ | $2.028 \cdot 10^{-9}$ | $0$ |
| $HH \to W^-u\bar{d}$ | $-1.934 \cdot 10^{-8}$ | $-1.934 \cdot 10^{-8}$ | $0$ | $8.793 \cdot 10^{-10}$ | $8.793 \cdot 10^{-10}$ | $0$ |
| $HH \to z\bar{b}b$ | $-6.812 \cdot 10^{-7}$ | $-6.812 \cdot 10^{-7}$ | $0$ | $3.097 \cdot 10^{-8}$ | $3.097 \cdot 10^{-8}$ | $0$ |
| $HH \to z\nu_e\bar{\nu}_e$ | $-1.773 \cdot 10^{-7}$ | $-1.773 \cdot 10^{-7}$ | $0$ | $8.062 \cdot 10^{-9}$ | $8.062 \cdot 10^{-9}$ | $0$ |
| $HH \to zc\bar{c}$ | $-4.637 \cdot 10^{-8}$ | $-4.637 \cdot 10^{-8}$ | $0$ | $2.108 \cdot 10^{-9}$ | $2.108 \cdot 10^{-9}$ | $0$ |
| $HH \to zd\bar{d}$ | $-4.981 \cdot 10^{-7}$ | $-4.981 \cdot 10^{-7}$ | $0$ | $2.265 \cdot 10^{-8}$ | $2.265 \cdot 10^{-8}$ | $0$ |
| $HH \to ze^+e^-$ | $-8.279 \cdot 10^{-8}$ | $-8.279 \cdot 10^{-8}$ | $0$ | $3.764 \cdot 10^{-9}$ | $3.764 \cdot 10^{-9}$ | $0$ |
| $HH \to zt\bar{t}$ | $-2.68 \cdot 10^{-6}$ | $-2.68 \cdot 10^{-6}$ | $0$ | $1.218 \cdot 10^{-7}$ | $1.218 \cdot 10^{-7}$ | $0$ |
| $HH \to zz$ | $-0.07872$ | $-0.07872$ | $0$ | $0.002386$ | $0.002386$ | $0$ |
| $HW^+ \to \gamma t\bar{b}$ | $-1.008 \cdot 10^{-7}$ | $-1.008 \cdot 10^{-7}$ | $0$ | $4.582 \cdot 10^{-9}$ | $4.582 \cdot 10^{-9}$ | $0$ |
| $HW^+ \to \gamma u\bar{d}$ | $-4.97 \cdot 10^{-8}$ | $-4.97 \cdot 10^{-8}$ | $0$ | $2.26 \cdot 10^{-9}$ | $2.26 \cdot 10^{-9}$ | $0$ |
| $HW^+ \to u\bar{d}$ | $-0.002398$ | $-0.002398$ | $0$ | $7.27 \cdot 10^{-5}$ | $7.27 \cdot 10^{-5}$ | $0$ |
| $HW^- \to \bar{t}b$ | $-0.2195$ | $-0.2195$ | $0$ | $0.006654$ | $0.006654$ | $0$ |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | $-5.228 \cdot 10^{-8}$ | $-5.228 \cdot 10^{-8}$ | $0$ | $2.377 \cdot 10^{-9}$ | $2.377 \cdot 10^{-9}$ | $0$ |
| $HW^- \to \mu^-\bar{\nu}_\mu$ | $0.1351$ | $0.1351$ | $0$ | $0.6295$ | $0.6295$ | $0$ |
| $H\gamma \to b\bar{b}$ | $-9.368 \cdot 10^{-6}$ | $-9.368 \cdot 10^{-6}$ | $0$ | $2.84 \cdot 10^{-7}$ | $2.84 \cdot 10^{-7}$ | $0$ |
| $H\gamma \to c\bar{c}$ | $-5.047 \cdot 10^{-6}$ | $-5.047 \cdot 10^{-6}$ | $0$ | $1.53 \cdot 10^{-7}$ | $1.53 \cdot 10^{-7}$ | $0$ |
| $H\gamma \to d\bar{d}$ | $-1.63 \cdot 10^{-11}$ | $-1.63 \cdot 10^{-11}$ | $0$ | $4.942 \cdot 10^{-13}$ | $4.942 \cdot 10^{-13}$ | $0$ |
| $H\gamma \to e^+e^-$ | $-1.032 \cdot 10^{-12}$ | $-1.032 \cdot 10^{-12}$ | $0$ | $3.128 \cdot 10^{-14}$ | $3.128 \cdot 10^{-14}$ | $0$ |
| $H\gamma \to t\bar{t}$ | $-0.1933$ | $-0.1933$ | $0$ | $0.005861$ | $0.005861$ | $0$ |
| $Hz \to \mu^+\mu^-$ | $0.04771$ | $0.04771$ | $0$ | $0.3133$ | $0.3133$ | $0$ |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | $-0.0003523$ | $-0.0003523$ | $0$ | $1.068 \cdot 10^{-5}$ | $1.068 \cdot 10^{-5}$ | $0$ |
| $Hz \to b\bar{b}$ | $-0.001476$ | $-0.001476$ | $0$ | $4.475 \cdot 10^{-5}$ | $4.475 \cdot 10^{-5}$ | $0$ |
| $Hz \to s\bar{s}$ | $-0.0002854$ | $-0.0002854$ | $0$ | $8.652 \cdot 10^{-6}$ | $8.652 \cdot 10^{-6}$ | $0$ |
| $Hz \to t\bar{t}$ | $-0.3308$ | $-0.3308$ | $0$ | $0.01003$ | $0.01003$ | $0$ |
| $Hz \to u\bar{u}$ | $-0.001394$ | $-0.001394$ | $0$ | $4.226 \cdot 10^{-5}$ | $4.226 \cdot 10^{-5}$ | $0$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| $W^+W^- \to Hb\bar{b}$ | $-1.008 \cdot 10^{-6}$ | $-1.008 \cdot 10^{-6}$ | 0 | $4.585 \cdot 10^{-8}$ | $4.585 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | $-1.206 \cdot 10^{-7}$ | $-1.206 \cdot 10^{-7}$ | 0 | $5.482 \cdot 10^{-9}$ | $5.482 \cdot 10^{-9}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $-2.237 \cdot 10^{-7}$ | $-2.237 \cdot 10^{-7}$ | 0 | $1.017 \cdot 10^{-8}$ | $1.017 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-2.368 \cdot 10^{-6}$ | $-2.368 \cdot 10^{-6}$ | 0 | $1.077 \cdot 10^{-7}$ | $1.077 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to W^+W^-$ | $-5.053$ | $-5.053$ | 0 | $0.1532$ | $0.1532$ | 0 |
| $W^+W^- \to \gamma\gamma$ | $-0.009239$ | $-0.009239$ | 0 | $0.0002801$ | $0.0002801$ | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $-9.117 \cdot 10^{-8}$ | $-9.117 \cdot 10^{-8}$ | 0 | $4.145 \cdot 10^{-9}$ | $4.145 \cdot 10^{-9}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | $-1.658 \cdot 10^{-5}$ | $-1.658 \cdot 10^{-5}$ | 0 | $5.025 \cdot 10^{-7}$ | $5.025 \cdot 10^{-7}$ | 0 |
| $\gamma W^+ \to zW^+$ | $-0.03006$ | $-0.03006$ | 0 | $0.0009111$ | $0.0009111$ | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $-0.002553$ | $-0.002553$ | 0 | $6.203 \cdot 10^{-5}$ | $6.203 \cdot 10^{-5}$ | 0 |
| $\nu_\tau\bar{\nu}_\tau \to \nu_\tau\bar{\nu}_\tau$ | $-0.0001266$ | $-0.0001266$ | 0 | $3.836 \cdot 10^{-6}$ | $3.836 \cdot 10^{-6}$ | 0 |
| $\nu_e\bar{\nu}_e \to \nu_\mu\bar{\nu}_\mu$ | $-1.429 \cdot 10^{-19}$ | $-1.429 \cdot 10^{-19}$ | 0 | $2.941 \cdot 10^{-37}$ | $2.941 \cdot 10^{-37}$ | 0 |
| $b\bar{b} \to \gamma\gamma$ | $-1.233 \cdot 10^{-5}$ | $-1.233 \cdot 10^{-5}$ | 0 | $3.738 \cdot 10^{-7}$ | $3.738 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-2.695 \cdot 10^{-5}$ | $-2.695 \cdot 10^{-5}$ | 0 | $1.583 \cdot 10^{-6}$ | $1.583 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $-0.0001303$ | $-0.0001303$ | 0 | $3.95 \cdot 10^{-6}$ | $3.95 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to b\bar{b}$ | $8.466 \cdot 10^{-5}$ | $8.466 \cdot 10^{-5}$ | 0 | $7.512 \cdot 10^{-7}$ | $7.512 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $-0.0001979$ | $-0.0001979$ | 0 | $5.998 \cdot 10^{-6}$ | $5.998 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-0.1796$ | $-0.1796$ | 0 | $0.008597$ | $0.008597$ | 0 |
| $b\bar{b} \to u\bar{u}$ | $-0.0006551$ | $-0.0006551$ | 0 | $1.986 \cdot 10^{-5}$ | $1.986 \cdot 10^{-5}$ | 0 |
| $b\bar{t} \to e^-\bar{\nu}_e$ | $-0.001164$ | $-0.001164$ | 0 | $3.527 \cdot 10^{-5}$ | $3.527 \cdot 10^{-5}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $-0.0001353$ | $-0.0001353$ | 0 | $4.346 \cdot 10^{-6}$ | $4.346 \cdot 10^{-6}$ | 0 |
| $c\bar{s} \to \tau^+\nu_\tau$ | $-9.56 \cdot 10^{-5}$ | $-9.56 \cdot 10^{-5}$ | 0 | $2.898 \cdot 10^{-6}$ | $2.898 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to c\bar{c}$ | $-0.0001442$ | $-0.0001442$ | 0 | $4.37 \cdot 10^{-6}$ | $4.37 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to e^+e^-$ | $-3.174 \cdot 10^{-5}$ | $-3.174 \cdot 10^{-5}$ | 0 | $9.621 \cdot 10^{-7}$ | $9.621 \cdot 10^{-7}$ | 0 |
| $d\bar{d} \to s\bar{s}$ | $-0.0007717$ | $-0.0007717$ | 0 | $2.339 \cdot 10^{-5}$ | $2.339 \cdot 10^{-5}$ | 0 |
| $e^+\nu_\mu \to e^+\nu_\mu$ | $\color{blue}{-6.193 \cdot 10^{-19}}$ | $\color{blue}{-9.148 \cdot 10^{-19}}$ | $\color{blue}{-0.4772}$ | $\color{blue}{4.419 \cdot 10^{-35}}$ | $\color{blue}{3.932 \cdot 10^{-35}}$ | $\color{blue}{0.1103}$ |
| $e^+\nu_e \to \mu^+\nu_\mu$ | $2.21 \cdot 10^{-21}$ | $2.21 \cdot 10^{-21}$ | 0 | $5.877 \cdot 10^{-39}$ | $5.877 \cdot 10^{-39}$ | 0 |
| $e^+\nu_e \to e^+\nu_e$ | $-0.01914$ | $-0.01914$ | 0 | $0.0005802$ | $0.0005802$ | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $-0.1049$ | $-0.1049$ | 0 | $0.003179$ | $0.003179$ | 0 |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $e^+e^- \to \mu^+\mu^-$ | $-0.0009163$ | $-0.0009163$ | 0 | $3.931 \cdot 10^{-5}$ | $3.931 \cdot 10^{-5}$ | 0 |
| $e^+e^- \to e^+e^-$ | $-0.02474$ | $-0.02474$ | 0 | $0.00075$ | $0.00075$ | 0 |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | $-0.0001576$ | $-0.0001576$ | 0 | $4.778 \cdot 10^{-6}$ | $4.778 \cdot 10^{-6}$ | 0 |
| $s\bar{s} \to s\bar{s}$ | $0.000379$ | $0.000379$ | 0 | $2.081 \cdot 10^{-6}$ | $2.081 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to \nu_\mu\bar{\nu}_\mu$ | $1.131 \cdot 10^{-20}$ | $1.131 \cdot 10^{-20}$ | 0 | $3.583 \cdot 10^{-36}$ | $3.583 \cdot 10^{-36}$ | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | $-0.0004077$ | $-0.0004077$ | 0 | $1.236 \cdot 10^{-5}$ | $1.236 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to c\bar{c}$ | $-0.000449$ | $-0.000449$ | 0 | $1.361 \cdot 10^{-5}$ | $1.361 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | $-0.0004707$ | $-0.0004707$ | 0 | $1.427 \cdot 10^{-5}$ | $1.427 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | $-0.0009204$ | $-0.0009204$ | 0 | $2.79 \cdot 10^{-5}$ | $2.79 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to t\bar{t}$ | $0.08841$ | $0.08841$ | 0 | $0.003665$ | $0.003665$ | 0 |
| $u\bar{d} \to \mu^+\nu_\mu$ | $4.923 \cdot 10^{-23}$ | $4.923 \cdot 10^{-23}$ | 0 | $1.224 \cdot 10^{-40}$ | $1.224 \cdot 10^{-40}$ | 0 |
| $u\bar{d} \to c\bar{s}$ | $-7.447 \cdot 10^{-5}$ | $-7.447 \cdot 10^{-5}$ | 0 | $2.257 \cdot 10^{-6}$ | $2.257 \cdot 10^{-6}$ | 0 |
| $u\bar{d} \to u\bar{d}$ | $0.0242$ | $0.0242$ | 0 | $0.0009144$ | $0.0009144$ | 0 |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $-0.0001126$ | $-0.0001126$ | 0 | $3.414 \cdot 10^{-6}$ | $3.414 \cdot 10^{-6}$ | 0 |
| $u\bar{u} \to c\bar{c}$ | $-4.27 \cdot 10^{-5}$ | $-4.27 \cdot 10^{-5}$ | 0 | $1.294 \cdot 10^{-6}$ | $1.294 \cdot 10^{-6}$ | 0 |
| $u\bar{u} \to u\bar{u}$ | $0.06368$ | $0.06368$ | 0 | $0.001097$ | $0.001097$ | 0 |
| $zz \to W^+W^-$ | $-4.074$ | $-4.074$ | 0 | $0.1235$ | $0.1235$ | 0 |
| $zz \to zz$ | $-0.009816$ | $-0.009816$ | 0 | $0.0002975$ | $0.0002975$ | 0 |

## 2.27 cHt

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $HH \to zt\bar{t}$ | $-6.043 \cdot 10^{-5}$ | $-6.043 \cdot 10^{-5}$ | 0 | $4.103 \cdot 10^{-5}$ | $4.103 \cdot 10^{-5}$ | 0 |
| $Hz \to t\bar{t}$ | $-2.22$ | $-2.22$ | 0 | $1.271$ | $1.271$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $2.019 \cdot 10^{-5}$ | $2.019 \cdot 10^{-5}$ | 0 | $7.366 \cdot 10^{-7}$ | $7.366 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-0.001949$ | $-0.001949$ | 0 | $3.637 \cdot 10^{-5}$ | $3.637 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to \nu_\mu\bar{\nu}_\mu$ | $-1.051 \cdot 10^{-5}$ | $-1.051 \cdot 10^{-5}$ | 0 | $5.821 \cdot 10^{-7}$ | $5.821 \cdot 10^{-7}$ | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | $0.0001943$ | $0.0001943$ | 0 | $4.677 \cdot 10^{-6}$ | $4.677 \cdot 10^{-6}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $t\bar{t} \to c\bar{c}$ | $-9.219 \cdot 10^{-5}$ | $-9.219 \cdot 10^{-5}$ | 0 | $1.881 \cdot 10^{-5}$ | $1.881 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | $0.0001507$ | $0.0001507$ | 0 | $5 \cdot 10^{-5}$ | $5 \cdot 10^{-5}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | $1.204 \cdot 10^{-5}$ | $1.204 \cdot 10^{-5}$ | 0 | $2.64 \cdot 10^{-6}$ | $2.64 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to t\bar{t}$ | $-0.09372$ | $-0.09372$ | 0 | $0.009373$ | $0.009373$ | 0 |

## 2.28   cHtbIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to W^+\bar{t}b$ | $-2.364 \cdot 10^{-7}$ | $-2.364 \cdot 10^{-7}$ | 0 | $5.344 \cdot 10^{-6}$ | $5.344 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-1.992 \cdot 10^{-8}$ | $-1.992 \cdot 10^{-8}$ | 0 | $5.558 \cdot 10^{-7}$ | $5.558 \cdot 10^{-7}$ | 0 |
| $HW^- \to \bar{t}b$ | $-7.797 \cdot 10^{-6}$ | $-7.797 \cdot 10^{-6}$ | 0 | $0.3036$ | $0.3036$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-7.873 \cdot 10^{-9}$ | $-7.873 \cdot 10^{-9}$ | 0 | $3.703 \cdot 10^{-7}$ | $3.703 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-4.241 \cdot 10^{-8}$ | $-4.241 \cdot 10^{-8}$ | 0 | $1.654 \cdot 10^{-9}$ | $1.654 \cdot 10^{-9}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | $-3.644 \cdot 10^{-21}$ | $-3.644 \cdot 10^{-21}$ | 0 | $3.806 \cdot 10^{-6}$ | $3.806 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $1.208 \cdot 10^{-20}$ | $1.203 \cdot 10^{-20}$ | $0.004017$ | $0.00108$ | $0.00108$ | 0 |
| $b\bar{t} \to e^-\bar{\nu}_e$ | $-1.141 \cdot 10^{-22}$ | $-1.141 \cdot 10^{-22}$ | 0 | $1.583 \cdot 10^{-7}$ | $1.583 \cdot 10^{-7}$ | 0 |

## 2.29   cHtbRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to W^+\bar{t}b$ | $-1.146 \cdot 10^{-6}$ | $-1.146 \cdot 10^{-6}$ | 0 | $1.514 \cdot 10^{-6}$ | $1.514 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-4.977 \cdot 10^{-9}$ | $-4.977 \cdot 10^{-9}$ | 0 | $3.381 \cdot 10^{-8}$ | $3.381 \cdot 10^{-8}$ | 0 |
| $HW^- \to \bar{t}b$ | $-0.04844$ | $-0.04844$ | 0 | $0.3702$ | $0.3702$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-3.095 \cdot 10^{-8}$ | $-3.095 \cdot 10^{-8}$ | 0 | $2.439 \cdot 10^{-7}$ | $2.439 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-5.255 \cdot 10^{-7}$ | $-5.255 \cdot 10^{-7}$ | 0 | $2.009 \cdot 10^{-9}$ | $2.009 \cdot 10^{-9}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | $-2.016 \cdot 10^{-6}$ | $-2.016 \cdot 10^{-6}$ | 0 | $6.552 \cdot 10^{-7}$ | $6.552 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $0.0005355$ | $0.0005355$ | 0 | $0.001098$ | $0.001098$ | 0 |

| $b\bar{t} \to e^- \bar{\nu}_e$ | $-6.719 \cdot 10^{-7}$ | $-6.719 \cdot 10^{-7}$ | $0$ | $1.413 \cdot 10^{-7}$ | $1.413 \cdot 10^{-7}$ | $0$ |
|---|---|---|---|---|---|---|

## 2.30 cHudIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to W^- u\bar{d}$ | $-3.277 \cdot 10^{-25}$ | $-3.277 \cdot 10^{-25}$ | $-1.343 \cdot 10^{-6}$ | $2.244 \cdot 10^{-24}$ | $2.244 \cdot 10^{-24}$ | $-2.674 \cdot 10^{-6}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-7.866 \cdot 10^{-26}$ | $-7.866 \cdot 10^{-26}$ | $-1.335 \cdot 10^{-6}$ | $1.927 \cdot 10^{-26}$ | $1.927 \cdot 10^{-26}$ | $-2.646 \cdot 10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $3.762 \cdot 10^{-23}$ | $3.762 \cdot 10^{-23}$ | $-1.329 \cdot 10^{-6}$ | $1.078 \cdot 10^{-20}$ | $1.078 \cdot 10^{-20}$ | $-2.691 \cdot 10^{-6}$ |
| $W^+W^- \to Hc\bar{c}$ | $5.296 \cdot 10^{-18}$ | $5.296 \cdot 10^{-18}$ | $4.721 \cdot 10^{-7}$ | $6.235 \cdot 10^{-24}$ | $6.235 \cdot 10^{-24}$ | $9.462 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $1.782 \cdot 10^{-25}$ | $1.782 \cdot 10^{-25}$ | $-1.347 \cdot 10^{-6}$ | $2.18 \cdot 10^{-35}$ | $2.18 \cdot 10^{-35}$ | $-2.66 \cdot 10^{-6}$ |
| $\bar{b}t \to \bar{d}u$ | $1.681 \cdot 10^{-37}$ | $-4.089 \cdot 10^{-38}$ | $1.243$ | $1.338 \cdot 10^{-25}$ | $1.338 \cdot 10^{-25}$ | $-2.691 \cdot 10^{-6}$ |
| $c\bar{s} \to \tau^+ \nu_\tau$ | $3.308 \cdot 10^{-31}$ | $-3.586 \cdot 10^{-32}$ | $1.108$ | $4.512 \cdot 10^{-17}$ | $4.512 \cdot 10^{-17}$ | $9.308 \cdot 10^{-7}$ |
| $u\bar{d} \to \mu^+ \nu_\mu$ | $-2.607 \cdot 10^{-40}$ | $-7.081 \cdot 10^{-39}$ | $-26.16$ | $2.16 \cdot 10^{-25}$ | $2.16 \cdot 10^{-25}$ | $-2.685 \cdot 10^{-6}$ |
| $u\bar{d} \to c\bar{s}$ | $2.74 \cdot 10^{-33}$ | $-5.478 \cdot 10^{-33}$ | $2.999$ | $2.183 \cdot 10^{-18}$ | $2.183 \cdot 10^{-18}$ | $9.619 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-1.663 \cdot 10^{-36}$ | $-1.908 \cdot 10^{-36}$ | $-0.1472$ | $1.57 \cdot 10^{-24}$ | $1.57 \cdot 10^{-24}$ | $-2.675 \cdot 10^{-6}$ |

## 2.31 cHudRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to W^- u\bar{d}$ | $-2.79 \cdot 10^{-24}$ | $-2.79 \cdot 10^{-24}$ | $-1.326 \cdot 10^{-6}$ | $2.314 \cdot 10^{-25}$ | $2.314 \cdot 10^{-25}$ | $-2.679 \cdot 10^{-6}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-1.823 \cdot 10^{-23}$ | $-1.823 \cdot 10^{-23}$ | $-1.371 \cdot 10^{-6}$ | $2.456 \cdot 10^{-25}$ | $2.456 \cdot 10^{-25}$ | $-2.647 \cdot 10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $-2.346 \cdot 10^{-19}$ | $-2.346 \cdot 10^{-19}$ | $-1.322 \cdot 10^{-6}$ | $3.17 \cdot 10^{-20}$ | $3.17 \cdot 10^{-20}$ | $-2.65 \cdot 10^{-6}$ |
| $W^+W^- \to Hc\bar{c}$ | $-4.459 \cdot 10^{-18}$ | $-4.459 \cdot 10^{-18}$ | $4.709 \cdot 10^{-7}$ | $9.064 \cdot 10^{-25}$ | $9.064 \cdot 10^{-25}$ | $9.488 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $-4.241 \cdot 10^{-24}$ | $-4.241 \cdot 10^{-24}$ | $-1.344 \cdot 10^{-6}$ | $3.508 \cdot 10^{-35}$ | $3.508 \cdot 10^{-35}$ | $-2.651 \cdot 10^{-6}$ |
| $\bar{b}t \to \bar{d}u$ | $3.298 \cdot 10^{-21}$ | $3.298 \cdot 10^{-21}$ | $-1.334 \cdot 10^{-6}$ | $1.767 \cdot 10^{-24}$ | $1.767 \cdot 10^{-24}$ | $-2.66 \cdot 10^{-6}$ |
| $c\bar{s} \to \tau^+ \nu_\tau$ | $-4.122 \cdot 10^{-16}$ | $-4.122 \cdot 10^{-16}$ | $4.609 \cdot 10^{-7}$ | $5.647 \cdot 10^{-17}$ | $5.647 \cdot 10^{-17}$ | $9.562 \cdot 10^{-7}$ |
| $u\bar{d} \to \mu^+ \nu_\mu$ | $-3.123 \cdot 10^{-24}$ | $-3.123 \cdot 10^{-24}$ | $-1.345 \cdot 10^{-6}$ | $4.523 \cdot 10^{-26}$ | $4.523 \cdot 10^{-26}$ | $-2.675 \cdot 10^{-6}$ |

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $u\bar{d} \to c\bar{s}$ | $-1.285 \cdot 10^{-15}$ | $-1.285 \cdot 10^{-15}$ | $4.671 \cdot 10^{-7}$ | $2.21 \cdot 10^{-16}$ | $2.21 \cdot 10^{-16}$ | $9.501 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-1.773 \cdot 10^{-20}$ | $-1.773 \cdot 10^{-20}$ | $-1.297 \cdot 10^{-6}$ | $2.283 \cdot 10^{-24}$ | $2.283 \cdot 10^{-24}$ | $-2.672 \cdot 10^{-6}$ |

## 2.32 cQQ1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $b\bar{b} \to b\bar{b}$ | $-1.773$ | $-1.773$ | $0$ | $3.885$ | $3.885$ | $0$ |
| $b\bar{b} \to t\bar{t}$ | $-0.3358$ | $-0.3358$ | $0$ | $1.119$ | $1.119$ | $0$ |
| $t\bar{t} \to t\bar{t}$ | $-33.89$ | $-33.89$ | $0$ | $28.92$ | $28.92$ | $0$ |

## 2.33 cQQ8

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $b\bar{b} \to b\bar{b}$ | $-0.03429$ | $-0.03429$ | $0$ | $0.09617$ | $0.09617$ | $-2.08 \cdot 10^{-8}$ |
| $b\bar{b} \to t\bar{t}$ | $0.0916$ | $0.0916$ | $0$ | $0.1229$ | $0.1229$ | $0$ |
| $t\bar{t} \to t\bar{t}$ | $-8.202$ | $-8.202$ | $-1.219 \cdot 10^{-8}$ | $3$ | $3$ | $0$ |

## 2.34 cQb1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $b\bar{b} \to b\bar{b}$ | $0.01726$ | $0.01726$ | $0$ | $3.204$ | $3.204$ | $0$ |
| $b\bar{b} \to t\bar{t}$ | $-0.003975$ | $-0.003975$ | $0$ | $0.1698$ | $0.1698$ | $0$ |

## 2.35 cQb8

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| $b\bar{b} \to b\bar{b}$ | $-88.97$ | $-88.97$ | 0 | 0.4445 | 0.4445 | 0 |
| $b\bar{b} \to t\bar{t}$ | 0.2102 | 0.2102 | 0 | 0.06435 | 0.06435 | 0 |

## 2.36  cQd8

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| $b\bar{b} \to d\bar{d}$ | 0.02044 | 0.02044 | 0 | 0.006895 | 0.006895 | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.3473 | 0.3473 | 0 | 0.1106 | 0.1106 | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.5148 | 0.5148 | 0 | 0.1671 | 0.1671 | 0 |

## 2.37  cQe22

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| $b\bar{b} \to \mu^+\mu^-$ | $-8.793 \cdot 10^{-5}$ | $-8.793 \cdot 10^{-5}$ | 0 | 0.002124 | 0.002124 | 0 |

## 2.38  cQe33

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| $t\bar{t} \to \tau^+\tau^-$ | $-0.003271$ | $-0.003271$ | 0 | 0.04109 | 0.04109 | 0 |

## 2.39  cQj11

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |

|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $b\bar{b} \to d\bar{d}$ | 0.04004 | 0.04004 | 0 | 0.1806 | 0.1806 | 0 |
| $b\bar{b} \to u\bar{u}$ | $-0.01928$ | $-0.01928$ | 0 | 0.09281 | 0.09281 | 0 |
| $t\bar{t} \to c\bar{c}$ | 0.02098 | 0.02098 | 0 | 0.09128 | 0.09128 | 0 |
| $t\bar{t} \to d\bar{d}$ | $-0.1748$ | $-0.1748$ | 0 | 0.8453 | 0.8453 | 0 |
| $t\bar{t} \to s\bar{s}$ | $-0.05897$ | $-0.05897$ | 0 | 0.2878 | 0.2878 | 0 |

## 2.40  cQj18

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to d\bar{d}$ | 0.5525 | 0.5525 | 0 | 0.1865 | 0.1865 | 0 |
| $b\bar{b} \to u\bar{u}$ | 0.03854 | 0.03854 | 0 | 0.013 | 0.013 | 0 |
| $t\bar{t} \to c\bar{c}$ | 0.04379 | 0.04379 | 0 | 0.008145 | 0.008145 | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.08957 | 0.08957 | 0 | 0.0236 | 0.0236 | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.4986 | 0.4986 | 0 | 0.1616 | 0.1616 | 0 |

## 2.41  cQj31

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | 0.007809 | 0.007809 | 0 | 0.0364 | 0.0364 | 0 |
| $b\bar{b} \to d\bar{d}$ | $7.918 \cdot 10^{-5}$ | $7.918 \cdot 10^{-5}$ | 0 | 0.0003583 | 0.0003583 | 0 |
| $b\bar{b} \to u\bar{u}$ | 0.08047 | 0.08047 | 0 | 0.3873 | 0.3873 | 0 |
| $t\bar{t} \to c\bar{c}$ | 0.1081 | 0.1081 | 0 | 0.4855 | 0.4855 | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.00462 | 0.00462 | 0 | 0.02622 | 0.02622 | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.000257 | 0.000257 | 0 | 0.005224 | 0.005224 | 0 |

## 2.42 cQj38

<table>
<tr><th></th><th colspan="3">interference</th><th colspan="3">square</th></tr>
<tr><th></th><th>mod1</th><th>mod2</th><th>$1 - \text{mod2}/\text{mod1}$</th><th>mod1</th><th>mod2</th><th>$1 - \text{mod2}/\text{mod1}$</th></tr>
<tr><td>$\bar{b}t \to \bar{d}u$</td><td>$1.589 \cdot 10^{-10}$</td><td>$6.744 \cdot 10^{-19}$</td><td>1</td><td>0.02468</td><td>0.02468</td><td>0</td></tr>
<tr><td>$b\bar{b} \to d\bar{d}$</td><td>0.1447</td><td>0.1447</td><td>0</td><td>0.04882</td><td>0.04882</td><td>0</td></tr>
<tr><td>$b\bar{b} \to u\bar{u}$</td><td>$-0.05869$</td><td>$-0.05869$</td><td>0</td><td>0.0198</td><td>0.0198</td><td>0</td></tr>
<tr><td>$t\bar{t} \to c\bar{c}$</td><td>0.0723</td><td>0.0723</td><td>0</td><td>0.01777</td><td>0.01777</td><td>0</td></tr>
<tr><td>$t\bar{t} \to d\bar{d}$</td><td>$-0.1521$</td><td>$-0.1521$</td><td>0</td><td>0.04468</td><td>0.04468</td><td>0</td></tr>
<tr><td>$t\bar{t} \to s\bar{s}$</td><td>$-0.6528$</td><td>$-0.6528$</td><td>0</td><td>0.2137</td><td>0.2137</td><td>0</td></tr>
</table>

## 2.43 cQl111

<table>
<tr><th></th><th colspan="3">interference</th><th colspan="3">square</th></tr>
<tr><th></th><th>mod1</th><th>mod2</th><th>$1 - \text{mod2}/\text{mod1}$</th><th>mod1</th><th>mod2</th><th>$1 - \text{mod2}/\text{mod1}$</th></tr>
<tr><td>$b\bar{b} \to \nu_e \bar{\nu}_e$</td><td>$-1.647 \cdot 10^{-5}$</td><td>$-1.647 \cdot 10^{-5}$</td><td>0</td><td>$7.096 \cdot 10^{-5}$</td><td>$7.096 \cdot 10^{-5}$</td><td>0</td></tr>
</table>

## 2.44 cQl122

<table>
<tr><th></th><th colspan="3">interference</th><th colspan="3">square</th></tr>
<tr><th></th><th>mod1</th><th>mod2</th><th>$1 - \text{mod2}/\text{mod1}$</th><th>mod1</th><th>mod2</th><th>$1 - \text{mod2}/\text{mod1}$</th></tr>
<tr><td>$b\bar{b} \to \mu^+ \mu^-$</td><td>0.02569</td><td>0.02569</td><td>0</td><td>0.1325</td><td>0.1325</td><td>0</td></tr>
<tr><td>$t\bar{t} \to \nu_\mu \bar{\nu}_\mu$</td><td>0.04128</td><td>0.04128</td><td>0</td><td>0.2165</td><td>0.2165</td><td>0</td></tr>
</table>

## 2.45 cQl133

<table>
<tr><th colspan="3">interference</th><th colspan="3">square</th></tr>
<tr><th>mod1</th><th>mod2</th><th>$1 - \text{mod2}/\text{mod1}$</th><th>mod1</th><th>mod2</th><th>$1 - \text{mod2}/\text{mod1}$</th></tr>
</table>

| | $t\bar{t} \rightarrow \tau^+\tau^-$ | $-0.07866$ | $-0.07866$ | $0$ | | $0.3321$ | $0.3321$ | $0$ |

## 2.46  cQl311

| | interference | | | | square | | |
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| --- | --- | --- | --- | --- | --- | --- | --- |
| $b\bar{b} \rightarrow \nu_e\bar{\nu}_e$ | 0.0001869 | 0.0001869 | 0 | | 0.0007945 | 0.0007945 | 0 |
| $b\bar{t} \rightarrow e^-\bar{\nu}_e$ | 0.1725 | 0.1725 | 0 | | 0.8039 | 0.8039 | 0 |

## 2.47  cQl322

| | interference | | | | square | | |
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| --- | --- | --- | --- | --- | --- | --- | --- |
| $b\bar{b} \rightarrow \mu^+\mu^-$ | 0.01804 | 0.01804 | 0 | | 0.09302 | 0.09302 | 0 |
| $t\bar{t} \rightarrow \nu_\mu\bar{\nu}_\mu$ | 0.006924 | 0.006924 | 0 | | 0.03982 | 0.03982 | 0 |

## 2.48  cQl333

| | interference | | | | square | | |
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| --- | --- | --- | --- | --- | --- | --- | --- |
| $t\bar{t} \rightarrow \tau^+\tau^-$ | 0.02906 | 0.02906 | 0 | | 0.1205 | 0.1205 | 0 |

## 2.49  cQt1

| | interference | | | | square | | |
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| --- | --- | --- | --- | --- | --- | --- | --- |
| $b\bar{b} \rightarrow t\bar{t}$ | $-0.1558$ | $-0.1558$ | 0 | | 0.1698 | 0.1698 | 0 |
| $t\bar{t} \rightarrow t\bar{t}$ | $-0.9112$ | $-0.9112$ | 0 | | 7.661 | 7.661 | 0 |

## 2.50 cQt8

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $b\bar{b} \to t\bar{t}$ | $-0.09892$ | $-0.09892$ | 0 | 0.002677 | 0.002677 | 0 |
| $t\bar{t} \to t\bar{t}$ | $-14.72$ | $-14.72$ | 0 | 1.587 | 1.587 | 0 |

## 2.51 cQtQb1Im

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $b\bar{b} \to t\bar{t}$ | $1.867 \cdot 10^{-18}$ | $1.066 \cdot 10^{-18}$ | 0.4287 | 0.8542 | 0.8542 | 0 |

## 2.52 cQtQb1Re

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $b\bar{b} \to t\bar{t}$ | 0.001038 | 0.001038 | 0 | 1.091 | 1.091 | 0 |

## 2.53 cQtQb8Im

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $b\bar{b} \to t\bar{t}$ | $-1.44 \cdot 10^{-18}$ | $-1.197 \cdot 10^{-18}$ | 0.1685 | 0.1076 | 0.1076 | 0 |

## 2.54 cQtQb8Re

|  | interference | square |
|---|---|---|

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|---|
| $b\bar{b} \to t\bar{t}$ | 0.005479 | 0.005479 | 0 | | 0.09513 | 0.09513 | 0 |

## 2.55  cQtjd1Im

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $6.058 \cdot 10^{-14}$ | $6.058 \cdot 10^{-14}$ | $-5.943 \cdot 10^{-7}$ | | $1.799 \cdot 10^{-10}$ | $1.799 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| $t\bar{t} \to d\bar{d}$ | $-1.13 \cdot 10^{-26}$ | $1.741 \cdot 10^{-26}$ | $2.541$ | | $3.601 \cdot 10^{-10}$ | $3.601 \cdot 10^{-10}$ | $-1.166 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $6.738 \cdot 10^{-24}$ | $6.74 \cdot 10^{-24}$ | $-0.0004263$ | | $1.428 \cdot 10^{-7}$ | $1.428 \cdot 10^{-7}$ | $7.003 \cdot 10^{-7}$ |

## 2.56  cQtjd1Re

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-3.56 \cdot 10^{-10}$ | $-3.56 \cdot 10^{-10}$ | $-5.899 \cdot 10^{-7}$ | | $1.799 \cdot 10^{-10}$ | $1.799 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| $t\bar{t} \to d\bar{d}$ | $-7.075 \cdot 10^{-10}$ | $-7.075 \cdot 10^{-10}$ | $-5.936 \cdot 10^{-7}$ | | $3.601 \cdot 10^{-10}$ | $3.601 \cdot 10^{-10}$ | $-1.166 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-2.819 \cdot 10^{-7}$ | $-2.819 \cdot 10^{-7}$ | $3.193 \cdot 10^{-7}$ | | $1.428 \cdot 10^{-7}$ | $1.428 \cdot 10^{-7}$ | $6.303 \cdot 10^{-7}$ |

## 2.57  cQtjd8Im

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $3.841 \cdot 10^{-29}$ | $-8.975 \cdot 10^{-29}$ | $3.336$ | | $3.997 \cdot 10^{-11}$ | $3.997 \cdot 10^{-11}$ | $-1.176 \cdot 10^{-6}$ |
| $t\bar{t} \to d\bar{d}$ | $1.943 \cdot 10^{-28}$ | $1.262 \cdot 10^{-27}$ | $-5.493$ | | $8.001 \cdot 10^{-11}$ | $8.001 \cdot 10^{-11}$ | $-1.175 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $2.255 \cdot 10^{-24}$ | $-3.625 \cdot 10^{-25}$ | $1.161$ | | $3.173 \cdot 10^{-8}$ | $3.173 \cdot 10^{-8}$ | $6.303 \cdot 10^{-7}$ |

## 2.58 cQtjd8Re

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-5.039 \cdot 10^{-27}$ | $2.088 \cdot 10^{-38}$ | $1$ | | $3.997 \cdot 10^{-11}$ | $3.997 \cdot 10^{-11}$ | $-1.176 \cdot 10^{-6}$ |
| $t\bar{t} \to d\bar{d}$ | $2.012 \cdot 10^{-11}$ | $2.012 \cdot 10^{-11}$ | $-5.964 \cdot 10^{-7}$ | | $8.001 \cdot 10^{-11}$ | $8.001 \cdot 10^{-11}$ | $-1.175 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $1.001 \cdot 10^{-8}$ | $1.001 \cdot 10^{-8}$ | $2.998 \cdot 10^{-7}$ | | $3.173 \cdot 10^{-8}$ | $3.173 \cdot 10^{-8}$ | $6.303 \cdot 10^{-7}$ |

## 2.59 cQu1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $b\bar{b} \to u\bar{u}$ | 0.01366 | 0.01366 | 0 | 0.4921 | 0.4921 | 0 |
| $t\bar{t} \to c\bar{c}$ | 0.01815 | 0.01815 | 0 | 0.5581 | 0.5581 | 0 |

## 2.60 cQu8

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $b\bar{b} \to u\bar{u}$ | 0.05503 | 0.05503 | 0 | 0.01857 | 0.01857 | 0 |
| $t\bar{t} \to c\bar{c}$ | 0.1411 | 0.1411 | 0 | 0.041 | 0.041 | 0 |

## 2.61 cQujb1Im

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-6.61 \cdot 10^{-17}$ | $-6.61 \cdot 10^{-17}$ | $-7.261 \cdot 10^{-7}$ | | $1.485 \cdot 10^{-11}$ | $1.485 \cdot 10^{-11}$ | $-1.414 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $-4.393 \cdot 10^{-30}$ | $-2.371 \cdot 10^{-29}$ | $-4.398$ | | $2.533 \cdot 10^{-11}$ | $2.533 \cdot 10^{-11}$ | $-1.46 \cdot 10^{-6}$ |

## 2.62 cQujb1Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-5.952 \cdot 10^{-13}$ | $-5.952 \cdot 10^{-13}$ | $-7.225 \cdot 10^{-7}$ | $3.536 \cdot 10^{-11}$ | $3.536 \cdot 10^{-11}$ | $-1.442 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $-1.305 \cdot 10^{-14}$ | $-1.305 \cdot 10^{-14}$ | $-6.895 \cdot 10^{-7}$ | $7.737 \cdot 10^{-12}$ | $7.737 \cdot 10^{-12}$ | $-1.448 \cdot 10^{-6}$ |

## 2.63 cQujb8Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-2.024 \cdot 10^{-17}$ | $-2.024 \cdot 10^{-17}$ | $-7.41 \cdot 10^{-7}$ | $1.222 \cdot 10^{-13}$ | $1.222 \cdot 10^{-13}$ | $-1.391 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $2.269 \cdot 10^{-29}$ | $2.279 \cdot 10^{-29}$ | $-0.004443$ | $1.518 \cdot 10^{-11}$ | $1.518 \cdot 10^{-11}$ | $-1.449 \cdot 10^{-6}$ |

## 2.64 cQujb8Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-1.2 \cdot 10^{-13}$ | $-1.2 \cdot 10^{-13}$ | $-7.5 \cdot 10^{-7}$ | $1.222 \cdot 10^{-13}$ | $1.222 \cdot 10^{-13}$ | $-1.391 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $-1.661 \cdot 10^{-12}$ | $-1.661 \cdot 10^{-12}$ | $-7.225 \cdot 10^{-7}$ | $1.518 \cdot 10^{-11}$ | $1.518 \cdot 10^{-11}$ | $-1.449 \cdot 10^{-6}$ |

## 2.65 cW

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $HH \to W^+W^-\gamma$ | $-2.013 \cdot 10^{-7}$ | $-2.013 \cdot 10^{-7}$ | $0$ | $4.195 \cdot 10^{-6}$ | $4.195 \cdot 10^{-6}$ | $0$ |
| $HW^+ \to \gamma t\bar{b}$ | $4.462 \cdot 10^{-8}$ | $4.462 \cdot 10^{-8}$ | $0$ | $5.814 \cdot 10^{-7}$ | $5.814 \cdot 10^{-7}$ | $0$ |
| $HW^+ \to \gamma u\bar{d}$ | $9.814 \cdot 10^{-7}$ | $9.814 \cdot 10^{-7}$ | $0$ | $3.387 \cdot 10^{-6}$ | $3.387 \cdot 10^{-6}$ | $0$ |

| | | | | | | |
|---|---|---|---|---|---|---|
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $9.898 \cdot 10^{-8}$ | $9.898 \cdot 10^{-8}$ | 0 | $6.531 \cdot 10^{-7}$ | $6.531 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to H b\bar{b}$ | $-2.143 \cdot 10^{-8}$ | $-2.143 \cdot 10^{-8}$ | 0 | $8.478 \cdot 10^{-7}$ | $8.478 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to H c\bar{c}$ | $-1.859 \cdot 10^{-7}$ | $-1.859 \cdot 10^{-7}$ | 0 | $4.46 \cdot 10^{-7}$ | $4.46 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to H d\bar{d}$ | $-2.003 \cdot 10^{-8}$ | $-2.003 \cdot 10^{-8}$ | 0 | $2.382 \cdot 10^{-6}$ | $2.382 \cdot 10^{-6}$ | 0 |
| $W^+W^- \to H t\bar{t}$ | $-6.19 \cdot 10^{-7}$ | $-6.19 \cdot 10^{-7}$ | 0 | $5.731 \cdot 10^{-6}$ | $5.731 \cdot 10^{-6}$ | 0 |
| $W^+W^- \to W^+W^-$ | 0.04155 | 0.04155 | 0 | 0.4104 | 0.4104 | 0 |
| $W^+W^- \to \gamma\gamma$ | 0.0005342 | 0.0005342 | 0 | 0.6648 | 0.6648 | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $-1.081 \cdot 10^{-6}$ | $-1.081 \cdot 10^{-6}$ | 0 | $1.631 \cdot 10^{-6}$ | $1.631 \cdot 10^{-6}$ | 0 |
| $\gamma W^+ \to z W^+$ | 0.003498 | 0.003498 | 0 | 1.913 | 1.913 | 0 |
| $zz \to W^+W^-$ | $-0.04279$ | $-0.04279$ | 0 | 15.98 | 15.98 | 0 |

## 2.66 cWtil

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to W^+W^-\gamma$ | $-1.269 \cdot 10^{-6}$ | $-1.269 \cdot 10^{-6}$ | 0 | $3.975 \cdot 10^{-7}$ | $3.975 \cdot 10^{-7}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-3.456 \cdot 10^{-8}$ | $-3.456 \cdot 10^{-8}$ | 0 | $3.759 \cdot 10^{-7}$ | $3.759 \cdot 10^{-7}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $1.055 \cdot 10^{-9}$ | $1.055 \cdot 10^{-9}$ | 0 | $2.357 \cdot 10^{-7}$ | $2.357 \cdot 10^{-7}$ | 0 |
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $-5.602 \cdot 10^{-9}$ | $-5.602 \cdot 10^{-9}$ | 0 | $3.441 \cdot 10^{-8}$ | $3.441 \cdot 10^{-8}$ | 0 |
| $W^+W^- \to H b\bar{b}$ | $2.881 \cdot 10^{-7}$ | $2.881 \cdot 10^{-7}$ | 0 | $8.697 \cdot 10^{-7}$ | $8.697 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to H c\bar{c}$ | $2.509 \cdot 10^{-8}$ | $2.509 \cdot 10^{-8}$ | 0 | $4.036 \cdot 10^{-7}$ | $4.036 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to H d\bar{d}$ | $1.954 \cdot 10^{-7}$ | $1.954 \cdot 10^{-7}$ | 0 | $4.626 \cdot 10^{-7}$ | $4.626 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to H t\bar{t}$ | $5.107 \cdot 10^{-7}$ | $5.107 \cdot 10^{-7}$ | 0 | $4.477 \cdot 10^{-6}$ | $4.477 \cdot 10^{-6}$ | 0 |
| $W^+W^- \to W^+W^-$ | <span style="color:red">$4.762 \cdot 10^{-14}$</span> | <span style="color:red">$1.237 \cdot 10^{-13}$</span> | <span style="color:red">$-1.598$</span> | 6.927 | 6.927 | 0 |
| $W^+W^- \to \gamma\gamma$ | $8.222 \cdot 10^{-18}$ | $8.217 \cdot 10^{-18}$ | 0.0006639 | 0.6626 | 0.6626 | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $1.011 \cdot 10^{-6}$ | $1.011 \cdot 10^{-6}$ | 0 | $1.886 \cdot 10^{-6}$ | $1.886 \cdot 10^{-6}$ | 0 |
| $\gamma W^+ \to z W^+$ | <span style="color:red">$2.081 \cdot 10^{-15}$</span> | <span style="color:red">$3.203 \cdot 10^{-15}$</span> | <span style="color:red">$-0.5396$</span> | 3.831 | 3.831 | 0 |
| $zz \to W^+W^-$ | $-6.834 \cdot 10^{-14}$ | $-6.835 \cdot 10^{-14}$ | $-0.0001354$ | 16.02 | 16.02 | 0 |

## 2.67 cbBIm

<table>
<tr><td></td><td colspan="3" align="center">interference</td><td colspan="3" align="center">square</td></tr>
<tr><td></td><td>mod1</td><td>mod2</td><td>$1 - \text{mod2/mod1}$</td><td>mod1</td><td>mod2</td><td>$1 - \text{mod2/mod1}$</td></tr>
<tr><td>$HH \to z\bar{b}b$</td><td>$-2.797 \cdot 10^{-8}$</td><td>$-2.797 \cdot 10^{-8}$</td><td>0</td><td>$1.825 \cdot 10^{-7}$</td><td>$1.825 \cdot 10^{-7}$</td><td>0</td></tr>
<tr><td>$HW^+ \to \gamma t\bar{b}$</td><td>$2.362 \cdot 10^{-7}$</td><td>$2.362 \cdot 10^{-7}$</td><td>0</td><td>$3.33 \cdot 10^{-6}$</td><td>$3.33 \cdot 10^{-6}$</td><td>0</td></tr>
<tr><td>$H\gamma \to b\bar{b}$</td><td>$-2.665 \cdot 10^{-20}$</td><td>$-2.665 \cdot 10^{-20}$</td><td>0</td><td>1.197</td><td>1.197</td><td>0</td></tr>
<tr><td>$Hz \to b\bar{b}$</td><td>$-2.779 \cdot 10^{-6}$</td><td>$-2.779 \cdot 10^{-6}$</td><td>0</td><td>0.2038</td><td>0.2038</td><td>0</td></tr>
<tr><td>$W^+W^- \to Hb\bar{b}$</td><td>$-1.226 \cdot 10^{-10}$</td><td>$-1.226 \cdot 10^{-10}$</td><td>0</td><td>$5.001 \cdot 10^{-9}$</td><td>$5.001 \cdot 10^{-9}$</td><td>0</td></tr>
<tr><td>$b\bar{b} \to \gamma\gamma$</td><td><span style="color:blue">$-1.004 \cdot 10^{-23}$</span></td><td><span style="color:blue">$-4.289 \cdot 10^{-23}$</span></td><td><span style="color:blue">$-3.273$</span></td><td>0.00199</td><td>0.00199</td><td>0</td></tr>
<tr><td>$b\bar{b} \to \mu^+\mu^-$</td><td>$-1.037 \cdot 10^{-22}$</td><td>$-1.037 \cdot 10^{-22}$</td><td>0</td><td>0.002981</td><td>0.002981</td><td>0</td></tr>
<tr><td>$b\bar{b} \to \nu_e\bar{\nu}_e$</td><td>$2.143 \cdot 10^{-21}$</td><td>$2.143 \cdot 10^{-21}$</td><td>0</td><td>$5.091 \cdot 10^{-5}$</td><td>$5.091 \cdot 10^{-5}$</td><td>0</td></tr>
<tr><td>$b\bar{b} \to b\bar{b}$</td><td>$7.597 \cdot 10^{-19}$</td><td>$7.603 \cdot 10^{-19}$</td><td>$-0.0007433$</td><td>0.006707</td><td>0.006707</td><td>0</td></tr>
<tr><td>$b\bar{b} \to d\bar{d}$</td><td>$-8.636 \cdot 10^{-21}$</td><td>$-8.636 \cdot 10^{-21}$</td><td>0</td><td>0.0009978</td><td>0.0009978</td><td>0</td></tr>
<tr><td>$b\bar{b} \to t\bar{t}$</td><td>$1.049 \cdot 10^{-20}$</td><td>$1.049 \cdot 10^{-20}$</td><td>$3.509 \cdot 10^{-5}$</td><td>0.003297</td><td>0.003297</td><td>0</td></tr>
<tr><td>$b\bar{b} \to u\bar{u}$</td><td>$4.167 \cdot 10^{-20}$</td><td>$4.167 \cdot 10^{-20}$</td><td>$4.411 \cdot 10^{-5}$</td><td>0.002707</td><td>0.002707</td><td>0</td></tr>
</table>

## 2.68 cbBRe

<table>
<tr><td></td><td colspan="3" align="center">interference</td><td colspan="3" align="center">square</td></tr>
<tr><td></td><td>mod1</td><td>mod2</td><td>$1 - \text{mod2/mod1}$</td><td>mod1</td><td>mod2</td><td>$1 - \text{mod2/mod1}$</td></tr>
<tr><td>$HH \to z\bar{b}b$</td><td>$-8.784 \cdot 10^{-9}$</td><td>$-8.784 \cdot 10^{-9}$</td><td>0</td><td>$2.271 \cdot 10^{-7}$</td><td>$2.271 \cdot 10^{-7}$</td><td>0</td></tr>
<tr><td>$HW^+ \to \gamma t\bar{b}$</td><td>$-7.842 \cdot 10^{-8}$</td><td>$-7.842 \cdot 10^{-8}$</td><td>0</td><td>$1.595 \cdot 10^{-6}$</td><td>$1.595 \cdot 10^{-6}$</td><td>0</td></tr>
<tr><td>$H\gamma \to b\bar{b}$</td><td>$-1.284 \cdot 10^{-5}$</td><td>$-1.284 \cdot 10^{-5}$</td><td>0</td><td>0.3315</td><td>0.3315</td><td>0</td></tr>
<tr><td>$Hz \to b\bar{b}$</td><td>$-0.0006987$</td><td>$-0.0006987$</td><td>0</td><td>0.2863</td><td>0.2863</td><td>0</td></tr>
<tr><td>$W^+W^- \to Hb\bar{b}$</td><td>$4.697 \cdot 10^{-9}$</td><td>$4.697 \cdot 10^{-9}$</td><td>0</td><td>$4.542 \cdot 10^{-9}$</td><td>$4.542 \cdot 10^{-9}$</td><td>0</td></tr>
<tr><td>$b\bar{b} \to \gamma\gamma$</td><td>$9.225 \cdot 10^{-6}$</td><td>$9.225 \cdot 10^{-6}$</td><td>0</td><td>0.00199</td><td>0.00199</td><td>0</td></tr>
<tr><td>$b\bar{b} \to \mu^+\mu^-$</td><td>$4.522 \cdot 10^{-5}$</td><td>$4.522 \cdot 10^{-5}$</td><td>0</td><td>0.00216</td><td>0.00216</td><td>0</td></tr>
<tr><td>$b\bar{b} \to \nu_e\bar{\nu}_e$</td><td>$-2.364 \cdot 10^{-5}$</td><td>$-2.364 \cdot 10^{-5}$</td><td>0</td><td>0.000573</td><td>0.000573</td><td>0</td></tr>
</table>

| | mod1 | mod2 | | | mod1 | mod2 | |
|---|---|---|---|---|---|---|---|
| $b\bar{b} \to b\bar{b}$ | 0.0004022 | 0.0004022 | 0 | | 0.005121 | 0.005121 | 0 |
| $b\bar{b} \to d\bar{d}$ | $-2.578 \cdot 10^{-5}$ | $-2.578 \cdot 10^{-5}$ | 0 | | 0.0004578 | 0.0004578 | 0 |
| $b\bar{b} \to t\bar{t}$ | 0.0002247 | 0.0002247 | 0 | | 0.003228 | 0.003228 | 0 |
| $b\bar{b} \to u\bar{u}$ | $3.198 \cdot 10^{-5}$ | $3.198 \cdot 10^{-5}$ | 0 | | 0.00347 | 0.00347 | 0 |

## 2.69  cbGIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to b\bar{b}$ | $5.933 \cdot 10^{-21}$ | $5.933 \cdot 10^{-21}$ | 0 | 0.01243 | 0.01243 | 0 |
| $b\bar{b} \to d\bar{d}$ | $-1.838 \cdot 10^{-25}$ | $-1.838 \cdot 10^{-25}$ | 0 | 0.03667 | 0.03667 | 0 |
| $b\bar{b} \to t\bar{t}$ | $-8.29 \cdot 10^{-20}$ | $-8.29 \cdot 10^{-20}$ | 0 | 0.0219 | 0.0219 | 0 |
| $b\bar{b} \to u\bar{u}$ | $9.191 \cdot 10^{-26}$ | $9.191 \cdot 10^{-26}$ | 0 | 0.03457 | 0.03457 | 0 |

## 2.70  cbGRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to b\bar{b}$ | $-0.01547$ | $-0.01547$ | 0 | 0.01389 | 0.01389 | 0 |
| $b\bar{b} \to d\bar{d}$ | $-0.004666$ | $-0.004666$ | 0 | 0.0144 | 0.0144 | 0 |
| $b\bar{b} \to t\bar{t}$ | $-0.004799$ | $-0.004799$ | 0 | 0.01335 | 0.01335 | 0 |
| $b\bar{b} \to u\bar{u}$ | $-0.004666$ | $-0.004666$ | 0 | 0.008716 | 0.008716 | 0 |

## 2.71  cbHIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to Hb\bar{b}$ | $1.005 \cdot 10^{-10}$ | $1.005 \cdot 10^{-10}$ | 0 | $3.568 \cdot 10^{-6}$ | $3.568 \cdot 10^{-6}$ | 0 |

| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|
| $HH \to W^+\bar{t}b$ | $2.332 \cdot 10^{-7}$ | $2.332 \cdot 10^{-7}$ | 0 | $9.036 \cdot 10^{-7}$ | $9.036 \cdot 10^{-7}$ | 0 |
| $HH \to z\bar{b}b$ | $-9.761 \cdot 10^{-9}$ | $-9.761 \cdot 10^{-9}$ | 0 | $1.168 \cdot 10^{-5}$ | $1.168 \cdot 10^{-5}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-3.058 \cdot 10^{-9}$ | $-3.058 \cdot 10^{-9}$ | 0 | $2.164 \cdot 10^{-8}$ | $2.164 \cdot 10^{-8}$ | 0 |
| $HW^- \to \bar{t}b$ | $5.006 \cdot 10^{-6}$ | $5.006 \cdot 10^{-6}$ | 0 | 0.06337 | 0.06337 | 0 |
| $H\gamma \to b\bar{b}$ | $1.714 \cdot 10^{-18}$ | $1.714 \cdot 10^{-18}$ | 0 | 0.04106 | 0.04106 | 0 |
| $Hz \to b\bar{b}$ | $1.765 \cdot 10^{-8}$ | $1.765 \cdot 10^{-8}$ | 0 | 0.06655 | 0.06655 | 0 |
| $W^+W^- \to Hb\bar{b}$ | $8.752 \cdot 10^{-9}$ | $8.752 \cdot 10^{-9}$ | 0 | $2.367 \cdot 10^{-7}$ | $2.367 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $5.843 \cdot 10^{-10}$ | $5.843 \cdot 10^{-10}$ | 0 | $1.427 \cdot 10^{-12}$ | $1.427 \cdot 10^{-12}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $4.174 \cdot 10^{-27}$ | $4.174 \cdot 10^{-27}$ | 0 | $1.164 \cdot 10^{-10}$ | $1.164 \cdot 10^{-10}$ | 0 |
| $b\bar{b} \to b\bar{b}$ | $-5.255 \cdot 10^{-20}$ | $-5.254 \cdot 10^{-20}$ | 0.0002239 | $2.826 \cdot 10^{-6}$ | $2.826 \cdot 10^{-6}$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $-1.258 \cdot 10^{-29}$ | $-1.258 \cdot 10^{-29}$ | 0 | $6.823 \cdot 10^{-13}$ | $6.823 \cdot 10^{-13}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-3.39 \cdot 10^{-20}$ | $-9.809 \cdot 10^{-21}$ | 0.7107 | 0.0008223 | 0.0008223 | 0 |
| $b\bar{b} \to u\bar{u}$ | $-1.578 \cdot 10^{-29}$ | $-1.578 \cdot 10^{-29}$ | 0 | $1.46 \cdot 10^{-13}$ | $1.46 \cdot 10^{-13}$ | 0 |

## 2.72  cbHRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $HH \to Hb\bar{b}$ | $-2.03 \cdot 10^{-8}$ | $-2.03 \cdot 10^{-8}$ | 0 | $4.58 \cdot 10^{-7}$ | $4.58 \cdot 10^{-7}$ | 0 |
| $HH \to W^+\bar{t}b$ | $-1.91 \cdot 10^{-6}$ | $-1.91 \cdot 10^{-6}$ | 0 | $9.658 \cdot 10^{-6}$ | $9.658 \cdot 10^{-6}$ | 0 |
| $HH \to z\bar{b}b$ | $1.41 \cdot 10^{-8}$ | $1.41 \cdot 10^{-8}$ | 0 | $1.726 \cdot 10^{-6}$ | $1.726 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $2.33 \cdot 10^{-8}$ | $2.33 \cdot 10^{-8}$ | 0 | $1.322 \cdot 10^{-7}$ | $1.322 \cdot 10^{-7}$ | 0 |
| $HW^- \to \bar{t}b$ | $-0.009146$ | $-0.009146$ | 0 | 0.07146 | 0.07146 | 0 |
| $H\gamma \to b\bar{b}$ | $-0.0003693$ | $-0.0003693$ | 0 | 0.0004663 | 0.0004663 | 0 |
| $Hz \to b\bar{b}$ | $-0.02806$ | $-0.02806$ | 0 | 0.09707 | 0.09707 | 0 |
| $W^+W^- \to Hb\bar{b}$ | $1.127 \cdot 10^{-7}$ | $1.127 \cdot 10^{-7}$ | 0 | $4.266 \cdot 10^{-7}$ | $4.266 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $7.057 \cdot 10^{-9}$ | $7.057 \cdot 10^{-9}$ | 0 | $1.248 \cdot 10^{-11}$ | $1.248 \cdot 10^{-11}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-9.272 \cdot 10^{-11}$ | $-9.272 \cdot 10^{-11}$ | 0 | $1.164 \cdot 10^{-10}$ | $1.164 \cdot 10^{-10}$ | 0 |
| $b\bar{b} \to b\bar{b}$ | 0.003825 | 0.003825 | 0 | $4.943 \cdot 10^{-6}$ | $4.943 \cdot 10^{-6}$ | 0 |

| | interference mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | square mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $b\bar{b} \to d\bar{d}$ | $-5.43 \cdot 10^{-13}$ | $-5.43 \cdot 10^{-13}$ | 0 | $6.822 \cdot 10^{-13}$ | $6.822 \cdot 10^{-13}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-0.0004296$ | $-0.0004296$ | 0 | $0.0008222$ | $0.0008222$ | 0 |
| $b\bar{b} \to u\bar{u}$ | $-1.161 \cdot 10^{-13}$ | $-1.161 \cdot 10^{-13}$ | 0 | $1.46 \cdot 10^{-13}$ | $1.46 \cdot 10^{-13}$ | 0 |

## 2.73  cbWIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $HH \to W^+\bar{t}b$ | $-1.333 \cdot 10^{-7}$ | $-1.333 \cdot 10^{-7}$ | 0 | $1.154 \cdot 10^{-5}$ | $1.154 \cdot 10^{-5}$ | 0 |
| $HH \to z\bar{b}b$ | $1.225 \cdot 10^{-7}$ | $1.225 \cdot 10^{-7}$ | 0 | $1.716 \cdot 10^{-6}$ | $1.716 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-6.245 \cdot 10^{-9}$ | $-6.245 \cdot 10^{-9}$ | 0 | $1.998 \cdot 10^{-6}$ | $1.998 \cdot 10^{-6}$ | 0 |
| $HW^- \to \bar{t}b$ | $-6.495 \cdot 10^{-6}$ | $-6.495 \cdot 10^{-6}$ | 0 | $1.408$ | $1.408$ | 0 |
| $H\gamma \to b\bar{b}$ | $-1.075 \cdot 10^{-23}$ | $-1.075 \cdot 10^{-23}$ | 0 | $0.5975$ | $0.5975$ | 0 |
| $Hz \to b\bar{b}$ | $1.847 \cdot 10^{-6}$ | $1.847 \cdot 10^{-6}$ | 0 | $1.494$ | $1.494$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-2.977 \cdot 10^{-8}$ | $-2.977 \cdot 10^{-8}$ | 0 | $4.104 \cdot 10^{-6}$ | $4.104 \cdot 10^{-6}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-3.23 \cdot 10^{-9}$ | $-3.23 \cdot 10^{-9}$ | 0 | $3.81 \cdot 10^{-8}$ | $3.81 \cdot 10^{-8}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | $-4.287 \cdot 10^{-19}$ | $-4.287 \cdot 10^{-19}$ | 0 | $0.01094$ | $0.01094$ | 0 |
| $b\bar{b} \to \gamma\gamma$ | $-6.013 \cdot 10^{-23}$ | $-6.013 \cdot 10^{-23}$ | 0 | $0.0005705$ | $0.0005705$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-1.396 \cdot 10^{-22}$ | $-1.396 \cdot 10^{-22}$ | 0 | $0.001965$ | $0.001965$ | 0 |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $6.219 \cdot 10^{-20}$ | $6.219 \cdot 10^{-20}$ | 0 | $0.002148$ | $0.002148$ | 0 |
| $b\bar{b} \to b\bar{b}$ | ${\color{blue}-5.499 \cdot 10^{-18}}$ | ${\color{blue}-5.463 \cdot 10^{-18}}$ | ${\color{blue}0.006539}$ | $0.01432$ | $0.01432$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $-6.213 \cdot 10^{-19}$ | $-6.213 \cdot 10^{-19}$ | $2.366 \cdot 10^{-6}$ | $0.006407$ | $0.006407$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-1.835 \cdot 10^{-18}$ | $-1.835 \cdot 10^{-18}$ | 0 | $0.949$ | $0.949$ | 0 |
| $b\bar{b} \to u\bar{u}$ | $-4.184 \cdot 10^{-20}$ | $-4.184 \cdot 10^{-20}$ | 0 | $0.00554$ | $0.00554$ | 0 |
| $b\bar{t} \to e^-\bar{\nu}_e$ | $2.704 \cdot 10^{-19}$ | $2.704 \cdot 10^{-19}$ | 0 | $0.004483$ | $0.004483$ | 0 |

## 2.74  cbWRe

| interference | square |
|---|---|

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $HH \to W^+\bar{t}b$ | $-2.535 \cdot 10^{-7}$ | $-2.535 \cdot 10^{-7}$ | 0 | $5.954 \cdot 10^{-6}$ | $5.954 \cdot 10^{-6}$ | 0 |
| $HH \to z\bar{b}b$ | $-2.354 \cdot 10^{-7}$ | $-2.354 \cdot 10^{-7}$ | 0 | $4.448 \cdot 10^{-6}$ | $4.448 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-2.512 \cdot 10^{-8}$ | $-2.512 \cdot 10^{-8}$ | 0 | $1.209 \cdot 10^{-6}$ | $1.209 \cdot 10^{-6}$ | 0 |
| $HW^- \to \bar{t}b$ | $0.004016$ | $0.004016$ | 0 | $1.125$ | $1.125$ | 0 |
| $H\gamma \to b\bar{b}$ | $1.25 \cdot 10^{-6}$ | $1.25 \cdot 10^{-6}$ | 0 | $0.5223$ | $0.5223$ | 0 |
| $Hz \to b\bar{b}$ | $-0.001305$ | $-0.001305$ | 0 | $1.199$ | $1.199$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $7.506 \cdot 10^{-9}$ | $7.506 \cdot 10^{-9}$ | 0 | $1.583 \cdot 10^{-6}$ | $1.583 \cdot 10^{-6}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $-1.28 \cdot 10^{-7}$ | $-1.28 \cdot 10^{-7}$ | 0 | $1.193 \cdot 10^{-8}$ | $1.193 \cdot 10^{-8}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | $-3.649 \cdot 10^{-5}$ | $-3.649 \cdot 10^{-5}$ | 0 | $0.004372$ | $0.004372$ | 0 |
| $b\bar{b} \to \gamma\gamma$ | $-4.012 \cdot 10^{-6}$ | $-4.012 \cdot 10^{-6}$ | 0 | $0.0005706$ | $0.0005706$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-3.136 \cdot 10^{-5}$ | $-3.136 \cdot 10^{-5}$ | 0 | $0.002045$ | $0.002045$ | 0 |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $-2.781 \cdot 10^{-5}$ | $-2.781 \cdot 10^{-5}$ | 0 | $0.002179$ | $0.002179$ | 0 |
| $b\bar{b} \to b\bar{b}$ | $0.2655$ | $0.2655$ | 0 | $1.69$ | $1.69$ | 0 |
| $b\bar{b} \to d\bar{d}$ | $-1.093 \cdot 10^{-5}$ | $-1.093 \cdot 10^{-5}$ | 0 | $0.002513$ | $0.002513$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-0.004634$ | $-0.004634$ | 0 | $0.08269$ | $0.08269$ | 0 |
| $b\bar{b} \to u\bar{u}$ | $-6.613 \cdot 10^{-5}$ | $-6.613 \cdot 10^{-5}$ | 0 | $0.005353$ | $0.005353$ | 0 |
| $b\bar{t} \to e^-\bar{\nu}_e$ | $-5.557 \cdot 10^{-6}$ | $-5.557 \cdot 10^{-6}$ | 0 | $0.000701$ | $0.000701$ | 0 |

## 2.75 cbb

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to b\bar{b}$ | $8.568 \cdot 10^{-5}$ | $8.568 \cdot 10^{-5}$ | 0 | $0.01127$ | $0.01127$ | 0 |

## 2.76 cbd1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |

| | mod1 | mod2 | | | | | |
|---|---|---|---|---|---|---|---|
| $b\bar{b} \to d\bar{d}$ | 0.004305 | 0.004305 | 0 | | 0.1582 | 0.1582 | 0 |

## 2.77   cbd8

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to d\bar{d}$ | 0.0076 | 0.0076 | 0 | | 0.002561 | 0.002561 | 0 |

## 2.78   cbe22

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to \mu^+\mu^-$ | 0.007596 | 0.007596 | 0 | | 0.09302 | 0.09302 | 0 |

## 2.79   cbj1

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to d\bar{d}$ | $-9.401 \cdot 10^{-5}$ | $-9.401 \cdot 10^{-5}$ | 0 | | 0.007054 | 0.007054 | 0 |
| $b\bar{b} \to u\bar{u}$ | $-0.007674$ | $-0.007674$ | 0 | | 0.5748 | 0.5748 | 0 |

## 2.80   cbj8

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to d\bar{d}$ | 0.04669 | 0.04669 | 0 | | 0.01575 | 0.01575 | 0 |
| $b\bar{b} \to u\bar{u}$ | 0.04702 | 0.04702 | 0 | | 0.01587 | 0.01587 | 0 |

## 2.81 cbl11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to \nu_e \bar{\nu}_e$ | 0.004095 | 0.004095 | 0 | 0.09966 | 0.09966 | 0 |

## 2.82 cbl22

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to \mu^+ \mu^-$ | 0.003638 | 0.003638 | 0 | 0.08965 | 0.08965 | 0 |

## 2.83 cbu1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to u\bar{u}$ | $-0.003185$ | $-0.003185$ | 0 | 0.05851 | 0.05851 | 0 |

## 2.84 cdBIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to zd\bar{d}$ | $2.599 \cdot 10^{-15}$ | $2.599 \cdot 10^{-15}$ | $-5.771 \cdot 10^{-7}$ | $1.287 \cdot 10^{-15}$ | $1.287 \cdot 10^{-15}$ | $-1.166 \cdot 10^{-6}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-8.801 \cdot 10^{-16}$ | $-8.801 \cdot 10^{-16}$ | $-5.795 \cdot 10^{-7}$ | $5.039 \cdot 10^{-17}$ | $5.039 \cdot 10^{-17}$ | $-1.171 \cdot 10^{-6}$ |
| $H\gamma \to d\bar{d}$ | $3.782 \cdot 10^{-28}$ | $3.782 \cdot 10^{-28}$ | $-5.816 \cdot 10^{-7}$ | $1.169 \cdot 10^{-9}$ | $1.169 \cdot 10^{-9}$ | $-1.198 \cdot 10^{-6}$ |
| $Hz \to s\bar{s}$ | $2.437 \cdot 10^{-11}$ | $2.437 \cdot 10^{-11}$ | $3.283 \cdot 10^{-7}$ | $9.159 \cdot 10^{-8}$ | $9.159 \cdot 10^{-8}$ | $6.332 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $-4.263 \cdot 10^{-16}$ | $-4.263 \cdot 10^{-16}$ | $-5.864 \cdot 10^{-7}$ | $2.43 \cdot 10^{-18}$ | $2.43 \cdot 10^{-18}$ | $-1.194 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $3.484 \cdot 10^{-29}$ | $-1.288 \cdot 10^{-29}$ | $1.37$ | $6.132 \cdot 10^{-13}$ | $6.132 \cdot 10^{-13}$ | $-1.158 \cdot 10^{-6}$ |

| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|
| $d\bar{d} \to c\bar{c}$ | $-6.075 \cdot 10^{-29}$ | $-6.076 \cdot 10^{-29}$ | $-0.0002705$ | $1.998 \cdot 10^{-12}$ | $1.998 \cdot 10^{-12}$ | $-1.151 \cdot 10^{-6}$ |
| $d\bar{d} \to e^+e^-$ | $-1.041 \cdot 10^{-28}$ | $-1.041 \cdot 10^{-28}$ | $-6.53 \cdot 10^{-6}$ | $4.787 \cdot 10^{-13}$ | $4.787 \cdot 10^{-13}$ | $-1.191 \cdot 10^{-6}$ |
| $d\bar{d} \to s\bar{s}$ | $9.133 \cdot 10^{-28}$ | $8.937 \cdot 10^{-28}$ | $0.0215$ | $8.472 \cdot 10^{-11}$ | $8.472 \cdot 10^{-11}$ | $6.374 \cdot 10^{-7}$ |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | $-6.269 \cdot 10^{-25}$ | $-6.269 \cdot 10^{-25}$ | $0$ | $1.781 \cdot 10^{-10}$ | $1.781 \cdot 10^{-10}$ | $6.177 \cdot 10^{-7}$ |
| $s\bar{s} \to s\bar{s}$ | $2.16 \cdot 10^{-23}$ | $2.169 \cdot 10^{-23}$ | $-0.004282$ | $2.469 \cdot 10^{-10}$ | $2.469 \cdot 10^{-10}$ | $6.481 \cdot 10^{-7}$ |
| $t\bar{t} \to d\bar{d}$ | $4.448 \cdot 10^{-26}$ | $4.323 \cdot 10^{-26}$ | $0.02816$ | $2.068 \cdot 10^{-12}$ | $2.068 \cdot 10^{-12}$ | $-1.161 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $2.838 \cdot 10^{-24}$ | $2.891 \cdot 10^{-24}$ | $-0.01893$ | $8.437 \cdot 10^{-10}$ | $8.437 \cdot 10^{-10}$ | $6.282 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-2.57 \cdot 10^{-26}$ | $-2.57 \cdot 10^{-26}$ | $-5.058 \cdot 10^{-6}$ | $1.031 \cdot 10^{-11}$ | $1.031 \cdot 10^{-11}$ | $-1.164 \cdot 10^{-6}$ |

## 2.85 cdBRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $HH \to zd\bar{d}$ | $-4.523 \cdot 10^{-16}$ | $-4.523 \cdot 10^{-16}$ | $-5.969 \cdot 10^{-7}$ | $9.089 \cdot 10^{-16}$ | $9.089 \cdot 10^{-16}$ | $-1.166 \cdot 10^{-6}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-3.059 \cdot 10^{-16}$ | $-3.059 \cdot 10^{-16}$ | $-5.885 \cdot 10^{-7}$ | $7.565 \cdot 10^{-16}$ | $7.565 \cdot 10^{-16}$ | $-1.176 \cdot 10^{-6}$ |
| $H\gamma \to d\bar{d}$ | $-3.485 \cdot 10^{-19}$ | $-3.485 \cdot 10^{-19}$ | $-5.739 \cdot 10^{-7}$ | $3.253 \cdot 10^{-10}$ | $3.253 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| $Hz \to s\bar{s}$ | $-8.321 \cdot 10^{-9}$ | $-8.321 \cdot 10^{-9}$ | $3.125 \cdot 10^{-7}$ | $6.524 \cdot 10^{-8}$ | $6.524 \cdot 10^{-8}$ | $6.284 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $1.297 \cdot 10^{-16}$ | $1.297 \cdot 10^{-16}$ | $-6.168 \cdot 10^{-7}$ | $5.219 \cdot 10^{-18}$ | $5.219 \cdot 10^{-18}$ | $-1.169 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $-7.919 \cdot 10^{-13}$ | $-7.919 \cdot 10^{-13}$ | $-5.935 \cdot 10^{-7}$ | $2.702 \cdot 10^{-13}$ | $2.702 \cdot 10^{-13}$ | $-1.184 \cdot 10^{-6}$ |
| $d\bar{d} \to c\bar{c}$ | $9.258 \cdot 10^{-13}$ | $9.258 \cdot 10^{-13}$ | $-5.833 \cdot 10^{-7}$ | $2.507 \cdot 10^{-12}$ | $2.507 \cdot 10^{-12}$ | $-1.157 \cdot 10^{-6}$ |
| $d\bar{d} \to e^+e^-$ | $1.612 \cdot 10^{-12}$ | $1.612 \cdot 10^{-12}$ | $-6.203 \cdot 10^{-7}$ | $7.928 \cdot 10^{-13}$ | $7.928 \cdot 10^{-13}$ | $-1.173 \cdot 10^{-6}$ |
| $d\bar{d} \to s\bar{s}$ | $-8.539 \cdot 10^{-11}$ | $-8.539 \cdot 10^{-11}$ | $3.162 \cdot 10^{-7}$ | $1.766 \cdot 10^{-10}$ | $1.766 \cdot 10^{-10}$ | $6.23 \cdot 10^{-7}$ |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | $-1.156 \cdot 10^{-10}$ | $-1.156 \cdot 10^{-10}$ | $3.46 \cdot 10^{-7}$ | $1.64 \cdot 10^{-10}$ | $1.64 \cdot 10^{-10}$ | $6.099 \cdot 10^{-7}$ |
| $s\bar{s} \to s\bar{s}$ | $3.543 \cdot 10^{-9}$ | $3.543 \cdot 10^{-9}$ | $3.105 \cdot 10^{-7}$ | $2.679 \cdot 10^{-9}$ | $2.679 \cdot 10^{-9}$ | $6.346 \cdot 10^{-7}$ |
| $t\bar{t} \to d\bar{d}$ | $-4.259 \cdot 10^{-12}$ | $-4.259 \cdot 10^{-12}$ | $-5.87 \cdot 10^{-7}$ | $2.038 \cdot 10^{-12}$ | $2.038 \cdot 10^{-12}$ | $-1.177 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $4.197 \cdot 10^{-10}$ | $4.197 \cdot 10^{-10}$ | $3.097 \cdot 10^{-7}$ | $1.029 \cdot 10^{-9}$ | $1.029 \cdot 10^{-9}$ | $5.833 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-2.541 \cdot 10^{-11}$ | $-2.541 \cdot 10^{-11}$ | $-5.904 \cdot 10^{-7}$ | $9.482 \cdot 10^{-11}$ | $9.482 \cdot 10^{-11}$ | $-1.171 \cdot 10^{-6}$ |

## 2.86 cdGIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to d\bar{d}$ | $-2.059 \cdot 10^{-27}$ | $-2.476 \cdot 10^{-27}$ | $-0.203$ | $1.036 \cdot 10^{-11}$ | $1.036 \cdot 10^{-11}$ | $-1.158 \cdot 10^{-6}$ |
| $d\bar{d} \to c\bar{c}$ | $-5.256 \cdot 10^{-34}$ | $-6.28 \cdot 10^{-33}$ | $-10.95$ | $2.855 \cdot 10^{-11}$ | $2.855 \cdot 10^{-11}$ | $-1.156 \cdot 10^{-6}$ |
| $d\bar{d} \to s\bar{s}$ | $-1.053 \cdot 10^{-24}$ | $-9.079 \cdot 10^{-25}$ | $0.1376$ | $6.767 \cdot 10^{-9}$ | $6.767 \cdot 10^{-9}$ | $6.354 \cdot 10^{-7}$ |
| $s\bar{s} \to s\bar{s}$ | $-2.036 \cdot 10^{-24}$ | $-1.251 \cdot 10^{-24}$ | $0.3855$ | $5.698 \cdot 10^{-8}$ | $5.698 \cdot 10^{-8}$ | $6.318 \cdot 10^{-7}$ |
| $t\bar{t} \to d\bar{d}$ | $2.149 \cdot 10^{-27}$ | $2.609 \cdot 10^{-27}$ | $-0.2142$ | $2.413 \cdot 10^{-11}$ | $2.413 \cdot 10^{-11}$ | $-1.16 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $7.338 \cdot 10^{-25}$ | $4.379 \cdot 10^{-25}$ | $0.4033$ | $1.208 \cdot 10^{-8}$ | $1.208 \cdot 10^{-8}$ | $6.622 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $1.921 \cdot 10^{-25}$ | $1.921 \cdot 10^{-25}$ | $8.226 \cdot 10^{-6}$ | $1.094 \cdot 10^{-9}$ | $1.094 \cdot 10^{-9}$ | $-1.188 \cdot 10^{-6}$ |

## 2.87 cdGRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to d\bar{d}$ | $-1.398 \cdot 10^{-10}$ | $-1.398 \cdot 10^{-10}$ | $-6.436 \cdot 10^{-7}$ | $2.678 \cdot 10^{-11}$ | $2.678 \cdot 10^{-11}$ | $-1.158 \cdot 10^{-6}$ |
| $d\bar{d} \to c\bar{c}$ | $-1.398 \cdot 10^{-10}$ | $-1.398 \cdot 10^{-10}$ | $-5.721 \cdot 10^{-7}$ | $1.693 \cdot 10^{-11}$ | $1.693 \cdot 10^{-11}$ | $-1.182 \cdot 10^{-6}$ |
| $d\bar{d} \to s\bar{s}$ | $-5.56 \cdot 10^{-8}$ | $-5.56 \cdot 10^{-8}$ | $3.058 \cdot 10^{-7}$ | $5.465 \cdot 10^{-10}$ | $5.465 \cdot 10^{-10}$ | $6.222 \cdot 10^{-7}$ |
| $s\bar{s} \to s\bar{s}$ | $-2.362 \cdot 10^{-7}$ | $-2.362 \cdot 10^{-7}$ | $2.964 \cdot 10^{-7}$ | $1.419 \cdot 10^{-7}$ | $1.419 \cdot 10^{-7}$ | $6.34 \cdot 10^{-7}$ |
| $t\bar{t} \to d\bar{d}$ | $-1.567 \cdot 10^{-10}$ | $-1.567 \cdot 10^{-10}$ | $-6.383 \cdot 10^{-7}$ | $2.087 \cdot 10^{-11}$ | $2.087 \cdot 10^{-11}$ | $-1.198 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-6.213 \cdot 10^{-8}$ | $-6.213 \cdot 10^{-8}$ | $3.219 \cdot 10^{-7}$ | $1.048 \cdot 10^{-8}$ | $1.048 \cdot 10^{-8}$ | $6.676 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-1.481 \cdot 10^{-10}$ | $-1.481 \cdot 10^{-10}$ | $-6.075 \cdot 10^{-7}$ | $7.983 \cdot 10^{-11}$ | $7.983 \cdot 10^{-11}$ | $-1.165 \cdot 10^{-6}$ |

## 2.88 cdHIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to Hs\bar{s}$ | $2.18 \cdot 10^{-18}$ | $2.18 \cdot 10^{-18}$ | $3.211 \cdot 10^{-7}$ | $6.192 \cdot 10^{-13}$ | $6.192 \cdot 10^{-13}$ | $6.299 \cdot 10^{-7}$ |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| $HH \to W^-u\bar{d}$ | $-1.438 \cdot 10^{-15}$ | $-1.438 \cdot 10^{-15}$ | $-5.562 \cdot 10^{-7}$ | $2.278 \cdot 10^{-15}$ | $2.278 \cdot 10^{-15}$ | $-1.141 \cdot 10^{-6}$ |
| $HH \to zd\bar{d}$ | $-3.449 \cdot 10^{-17}$ | $-3.449 \cdot 10^{-17}$ | $-5.799 \cdot 10^{-7}$ | $2.833 \cdot 10^{-15}$ | $2.833 \cdot 10^{-15}$ | $-1.165 \cdot 10^{-6}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-1.464 \cdot 10^{-16}$ | $-1.464 \cdot 10^{-16}$ | $-6.148 \cdot 10^{-7}$ | $9.321 \cdot 10^{-17}$ | $9.321 \cdot 10^{-17}$ | $-1.169 \cdot 10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $-2.41 \cdot 10^{-13}$ | $-2.41 \cdot 10^{-13}$ | $-5.809 \cdot 10^{-7}$ | $4.565 \cdot 10^{-11}$ | $4.565 \cdot 10^{-11}$ | $-1.161 \cdot 10^{-6}$ |
| $H\gamma \to d\bar{d}$ | $8.078 \cdot 10^{-28}$ | $8.078 \cdot 10^{-28}$ | $0$ | $3.387 \cdot 10^{-13}$ | $3.387 \cdot 10^{-13}$ | $-1.152 \cdot 10^{-6}$ |
| $Hz \to s\bar{s}$ | $-1.151 \cdot 10^{-14}$ | $-1.151 \cdot 10^{-14}$ | $2.606 \cdot 10^{-7}$ | $1.746 \cdot 10^{-8}$ | $1.746 \cdot 10^{-8}$ | $6.3 \cdot 10^{-7}$ |
| $W^+W^- \to Hc\bar{c}$ | $-6.869 \cdot 10^{-13}$ | $-6.869 \cdot 10^{-13}$ | $3.203 \cdot 10^{-7}$ | $9.567 \cdot 10^{-21}$ | $9.567 \cdot 10^{-21}$ | $6.271 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $-2.511 \cdot 10^{-16}$ | $-2.511 \cdot 10^{-16}$ | $-5.973 \cdot 10^{-7}$ | $8.428 \cdot 10^{-17}$ | $8.428 \cdot 10^{-17}$ | $-1.175 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $1.918 \cdot 10^{-31}$ | $1.877 \cdot 10^{-31}$ | $0.02142$ | $3.933 \cdot 10^{-16}$ | $3.933 \cdot 10^{-16}$ | $-1.17 \cdot 10^{-6}$ |
| $d\bar{d} \to c\bar{c}$ | $7.361 \cdot 10^{-32}$ | $-2.876 \cdot 10^{-32}$ | $1.391$ | $3.63 \cdot 10^{-17}$ | $3.63 \cdot 10^{-17}$ | $-1.184 \cdot 10^{-6}$ |
| $d\bar{d} \to e^+e^-$ | $5.02 \cdot 10^{-39}$ | $1.112 \cdot 10^{-39}$ | $0.7785$ | $1.959 \cdot 10^{-24}$ | $1.959 \cdot 10^{-24}$ | $-1.174 \cdot 10^{-6}$ |
| $d\bar{d} \to s\bar{s}$ | $1.029 \cdot 10^{-33}$ | $2.081 \cdot 10^{-33}$ | $-1.023$ | $3.893 \cdot 10^{-19}$ | $3.893 \cdot 10^{-19}$ | $-2.825 \cdot 10^{-7}$ |
| $s\bar{s} \to s\bar{s}$ | $-1.178 \cdot 10^{-24}$ | $-8.903 \cdot 10^{-25}$ | $0.2445$ | $3.973 \cdot 10^{-16}$ | $3.973 \cdot 10^{-16}$ | $6.293 \cdot 10^{-7}$ |
| $t\bar{t} \to d\bar{d}$ | $-2.382 \cdot 10^{-28}$ | $-2.607 \cdot 10^{-28}$ | $-0.09419$ | $6.323 \cdot 10^{-13}$ | $6.323 \cdot 10^{-13}$ | $-1.17 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-1.391 \cdot 10^{-25}$ | $-4.145 \cdot 10^{-25}$ | $-1.98$ | $2.507 \cdot 10^{-10}$ | $2.507 \cdot 10^{-10}$ | $6.381 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $2.063 \cdot 10^{-36}$ | $2.109 \cdot 10^{-36}$ | $-0.02212$ | $9.863 \cdot 10^{-23}$ | $9.863 \cdot 10^{-23}$ | $-1.166 \cdot 10^{-6}$ |

## 2.89  cdHRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to Hs\bar{s}$ | $-2.641 \cdot 10^{-12}$ | $-2.641 \cdot 10^{-12}$ | $3.029 \cdot 10^{-7}$ | $1.513 \cdot 10^{-12}$ | $1.513 \cdot 10^{-12}$ | $6.607 \cdot 10^{-7}$ |
| $HH \to W^-u\bar{d}$ | $-7.483 \cdot 10^{-15}$ | $-7.483 \cdot 10^{-15}$ | $-5.88 \cdot 10^{-7}$ | $1.118 \cdot 10^{-14}$ | $1.118 \cdot 10^{-14}$ | $-1.253 \cdot 10^{-6}$ |
| $HH \to zd\bar{d}$ | $5.218 \cdot 10^{-15}$ | $5.218 \cdot 10^{-15}$ | $-5.941 \cdot 10^{-7}$ | $5.583 \cdot 10^{-16}$ | $5.583 \cdot 10^{-16}$ | $-1.182 \cdot 10^{-6}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-5.974 \cdot 10^{-15}$ | $-5.974 \cdot 10^{-15}$ | $-5.859 \cdot 10^{-7}$ | $9.411 \cdot 10^{-17}$ | $9.411 \cdot 10^{-17}$ | $-1.169 \cdot 10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $-7.262 \cdot 10^{-12}$ | $-7.262 \cdot 10^{-12}$ | $-5.921 \cdot 10^{-7}$ | $4.406 \cdot 10^{-11}$ | $4.406 \cdot 10^{-11}$ | $-1.157 \cdot 10^{-6}$ |
| $H\gamma \to d\bar{d}$ | $-6.067 \cdot 10^{-10}$ | $-6.067 \cdot 10^{-10}$ | $-5.934 \cdot 10^{-7}$ | $1.839 \cdot 10^{-11}$ | $1.839 \cdot 10^{-11}$ | $-1.142 \cdot 10^{-6}$ |
| $Hz \to s\bar{s}$ | $-4.021 \cdot 10^{-10}$ | $-4.021 \cdot 10^{-10}$ | $3.233 \cdot 10^{-7}$ | $1.746 \cdot 10^{-8}$ | $1.746 \cdot 10^{-8}$ | $6.3 \cdot 10^{-7}$ |
| $W^+W^- \to Hc\bar{c}$ | $2.712 \cdot 10^{-13}$ | $2.712 \cdot 10^{-13}$ | $3.318 \cdot 10^{-7}$ | $7.707 \cdot 10^{-21}$ | $7.707 \cdot 10^{-21}$ | $6.228 \cdot 10^{-7}$ |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|---|
| $W^+W^- \to Hd\bar{d}$ | $-1.176 \cdot 10^{-16}$ | $-1.176 \cdot 10^{-16}$ | $-5.951 \cdot 10^{-7}$ | | $3.727 \cdot 10^{-17}$ | $3.727 \cdot 10^{-17}$ | $-1.181 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $-1.304 \cdot 10^{-14}$ | $-1.304 \cdot 10^{-14}$ | $-6.137 \cdot 10^{-7}$ | | $3.933 \cdot 10^{-16}$ | $3.933 \cdot 10^{-16}$ | $-1.17 \cdot 10^{-6}$ |
| $d\bar{d} \to c\bar{c}$ | $-1.191 \cdot 10^{-15}$ | $-1.191 \cdot 10^{-15}$ | $-5.876 \cdot 10^{-7}$ | | $3.63 \cdot 10^{-17}$ | $3.63 \cdot 10^{-17}$ | $-1.184 \cdot 10^{-6}$ |
| $d\bar{d} \to e^+e^-$ | $-6.469 \cdot 10^{-23}$ | $-6.469 \cdot 10^{-23}$ | $-5.874 \cdot 10^{-7}$ | | $1.959 \cdot 10^{-24}$ | $1.959 \cdot 10^{-24}$ | $-1.174 \cdot 10^{-6}$ |
| $d\bar{d} \to s\bar{s}$ | $-1.291 \cdot 10^{-17}$ | $-1.291 \cdot 10^{-17}$ | $-1.549 \cdot 10^{-7}$ | | $7.787 \cdot 10^{-19}$ | $7.787 \cdot 10^{-19}$ | $-2.697 \cdot 10^{-7}$ |
| $s\bar{s} \to s\bar{s}$ | $4.722 \cdot 10^{-8}$ | $4.722 \cdot 10^{-8}$ | $3.177 \cdot 10^{-7}$ | | $6.954 \cdot 10^{-16}$ | $6.954 \cdot 10^{-16}$ | $6.184 \cdot 10^{-7}$ |
| $t\bar{t} \to d\bar{d}$ | $-2.075 \cdot 10^{-11}$ | $-2.075 \cdot 10^{-11}$ | $-5.782 \cdot 10^{-7}$ | | $6.323 \cdot 10^{-13}$ | $6.323 \cdot 10^{-13}$ | $-1.17 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-8.23 \cdot 10^{-9}$ | $-8.23 \cdot 10^{-9}$ | $3.159 \cdot 10^{-7}$ | | $2.507 \cdot 10^{-10}$ | $2.507 \cdot 10^{-10}$ | $6.381 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-2.027 \cdot 10^{-21}$ | $-2.027 \cdot 10^{-21}$ | $-5.921 \cdot 10^{-7}$ | | $9.746 \cdot 10^{-23}$ | $9.746 \cdot 10^{-23}$ | $-1.17 \cdot 10^{-6}$ |

## 2.90 cdWIm

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to W^- u\bar{d}$ | $-3.271 \cdot 10^{-16}$ | $-3.271 \cdot 10^{-16}$ | $-5.809 \cdot 10^{-7}$ | | $5.25 \cdot 10^{-15}$ | $5.25 \cdot 10^{-15}$ | $-1.181 \cdot 10^{-6}$ |
| $HH \to z d\bar{d}$ | $3.043 \cdot 10^{-16}$ | $3.043 \cdot 10^{-16}$ | $-5.915 \cdot 10^{-7}$ | | $3.226 \cdot 10^{-15}$ | $3.226 \cdot 10^{-15}$ | $-1.147 \cdot 10^{-6}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-1.027 \cdot 10^{-15}$ | $-1.027 \cdot 10^{-15}$ | $-5.843 \cdot 10^{-7}$ | | $4.68 \cdot 10^{-15}$ | $4.68 \cdot 10^{-15}$ | $-1.175 \cdot 10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $-1.29 \cdot 10^{-13}$ | $-1.29 \cdot 10^{-13}$ | $-5.425 \cdot 10^{-7}$ | | $4.112 \cdot 10^{-10}$ | $4.112 \cdot 10^{-10}$ | $-1.167 \cdot 10^{-6}$ |
| $H\gamma \to d\bar{d}$ | $-3.007 \cdot 10^{-27}$ | $-3.007 \cdot 10^{-27}$ | $-5.986 \cdot 10^{-7}$ | | $3.601 \cdot 10^{-10}$ | $3.601 \cdot 10^{-10}$ | $-1.166 \cdot 10^{-6}$ |
| $Hz \to s\bar{s}$ | $5.755 \cdot 10^{-11}$ | $5.755 \cdot 10^{-11}$ | $3.302 \cdot 10^{-7}$ | | $2.359 \cdot 10^{-7}$ | $2.359 \cdot 10^{-7}$ | $6.357 \cdot 10^{-7}$ |
| $W^+W^- \to Hc\bar{c}$ | $1.776 \cdot 10^{-11}$ | $1.776 \cdot 10^{-11}$ | $2.816 \cdot 10^{-7}$ | | $2.426 \cdot 10^{-17}$ | $2.426 \cdot 10^{-17}$ | $6.183 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $7.359 \cdot 10^{-16}$ | $7.359 \cdot 10^{-16}$ | $-5.843 \cdot 10^{-7}$ | | $7.448 \cdot 10^{-16}$ | $7.448 \cdot 10^{-16}$ | $-1.168 \cdot 10^{-6}$ |
| $\bar{b}t \to \bar{d}u$ | $8.824 \cdot 10^{-26}$ | $8.861 \cdot 10^{-26}$ | $-0.0042$ | | $5.056 \cdot 10^{-12}$ | $5.056 \cdot 10^{-12}$ | $-1.167 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $6.542 \cdot 10^{-29}$ | $8.204 \cdot 10^{-29}$ | $-0.2541$ | | $4.697 \cdot 10^{-12}$ | $4.697 \cdot 10^{-12}$ | $-1.171 \cdot 10^{-6}$ |
| $c\bar{s} \to \tau^+ \nu_\tau$ | $-2.107 \cdot 10^{-24}$ | $-2.09 \cdot 10^{-24}$ | $0.008265$ | | $1.158 \cdot 10^{-9}$ | $1.158 \cdot 10^{-9}$ | $6.046 \cdot 10^{-7}$ |
| $d\bar{d} \to c\bar{c}$ | $8.457 \cdot 10^{-28}$ | $8.458 \cdot 10^{-28}$ | $-0.0001457$ | | $3.201 \cdot 10^{-12}$ | $3.201 \cdot 10^{-12}$ | $-1.156 \cdot 10^{-6}$ |
| $d\bar{d} \to e^+e^-$ | $6.643 \cdot 10^{-27}$ | $6.643 \cdot 10^{-27}$ | $-8.279 \cdot 10^{-7}$ | | $1.547 \cdot 10^{-12}$ | $1.547 \cdot 10^{-12}$ | $-1.164 \cdot 10^{-6}$ |
| $d\bar{d} \to s\bar{s}$ | $-1.349 \cdot 10^{-26}$ | $-1.136 \cdot 10^{-26}$ | $0.1578$ | | $6.607 \cdot 10^{-10}$ | $6.607 \cdot 10^{-10}$ | $6.205 \cdot 10^{-7}$ |
| $s\bar{s} \to \nu_\tau \bar{\nu}_\tau$ | $3.984 \cdot 10^{-25}$ | $3.984 \cdot 10^{-25}$ | $0$ | | $2.289 \cdot 10^{-10}$ | $2.289 \cdot 10^{-10}$ | $6.117 \cdot 10^{-7}$ |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| $s\bar{s} \to s\bar{s}$ | $-2.239 \cdot 10^{-23}$ | $-1.958 \cdot 10^{-23}$ | $0.1256$ | $7.073 \cdot 10^{-8}$ | $7.073 \cdot 10^{-8}$ | $6.362 \cdot 10^{-7}$ |
| $t\bar{t} \to d\bar{d}$ | $4.633 \cdot 10^{-27}$ | $4.567 \cdot 10^{-27}$ | $0.01424$ | $4.624 \cdot 10^{-12}$ | $4.624 \cdot 10^{-12}$ | $-1.168 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-3.745 \cdot 10^{-25}$ | $-3.734 \cdot 10^{-25}$ | $0.00276$ | $2.485 \cdot 10^{-10}$ | $2.485 \cdot 10^{-10}$ | $6.036 \cdot 10^{-7}$ |
| $u\bar{d} \to \mu^+\nu_\mu$ | $1.121 \cdot 10^{-29}$ | $-1.027 \cdot 10^{-29}$ | $1.916$ | $1.364 \cdot 10^{-12}$ | $1.364 \cdot 10^{-12}$ | $-1.173 \cdot 10^{-6}$ |
| $u\bar{d} \to c\bar{s}$ | $-2.783 \cdot 10^{-25}$ | $8.927 \cdot 10^{-26}$ | $1.321$ | $2.397 \cdot 10^{-9}$ | $2.397 \cdot 10^{-9}$ | $6.259 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $1.556 \cdot 10^{-24}$ | $1.55 \cdot 10^{-24}$ | $0.003649$ | $1.685 \cdot 10^{-10}$ | $1.685 \cdot 10^{-10}$ | $-1.187 \cdot 10^{-6}$ |

## 2.91 cdWRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to W^- u\bar{d}$ | $-5.374 \cdot 10^{-16}$ | $-5.374 \cdot 10^{-16}$ | $-5.954 \cdot 10^{-7}$ | $6.173 \cdot 10^{-16}$ | $6.173 \cdot 10^{-16}$ | $-1.183 \cdot 10^{-6}$ |
| $HH \to z d\bar{d}$ | $-8.447 \cdot 10^{-16}$ | $-8.447 \cdot 10^{-16}$ | $-5.919 \cdot 10^{-7}$ | $3.169 \cdot 10^{-15}$ | $3.169 \cdot 10^{-15}$ | $-1.167 \cdot 10^{-6}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-1.838 \cdot 10^{-15}$ | $-1.838 \cdot 10^{-15}$ | $-5.983 \cdot 10^{-7}$ | $1.352 \cdot 10^{-15}$ | $1.352 \cdot 10^{-15}$ | $-1.183 \cdot 10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $-3.561 \cdot 10^{-11}$ | $-3.561 \cdot 10^{-11}$ | $-5.616 \cdot 10^{-7}$ | $9.243 \cdot 10^{-10}$ | $9.243 \cdot 10^{-10}$ | $-1.179 \cdot 10^{-6}$ |
| $H\gamma \to d\bar{d}$ | $1.866 \cdot 10^{-19}$ | $1.866 \cdot 10^{-19}$ | $-5.895 \cdot 10^{-7}$ | $9.328 \cdot 10^{-11}$ | $9.328 \cdot 10^{-11}$ | $-1.169 \cdot 10^{-6}$ |
| $Hz \to s\bar{s}$ | $-1.554 \cdot 10^{-8}$ | $-1.554 \cdot 10^{-8}$ | $3.218 \cdot 10^{-7}$ | $2.275 \cdot 10^{-7}$ | $2.275 \cdot 10^{-7}$ | $6.593 \cdot 10^{-7}$ |
| $W^+W^- \to Hc\bar{c}$ | $-1.638 \cdot 10^{-13}$ | $-1.638 \cdot 10^{-13}$ | $3.052 \cdot 10^{-7}$ | $2.762 \cdot 10^{-19}$ | $2.762 \cdot 10^{-19}$ | $6.518 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $2.182 \cdot 10^{-16}$ | $2.182 \cdot 10^{-16}$ | $-5.959 \cdot 10^{-7}$ | $2.275 \cdot 10^{-15}$ | $2.275 \cdot 10^{-15}$ | $-1.143 \cdot 10^{-6}$ |
| $\bar{b}t \to \bar{d}u$ | $9.687 \cdot 10^{-15}$ | $9.687 \cdot 10^{-15}$ | $-5.884 \cdot 10^{-7}$ | $3.772 \cdot 10^{-12}$ | $3.772 \cdot 10^{-12}$ | $-1.166 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $-5.687 \cdot 10^{-12}$ | $-5.687 \cdot 10^{-12}$ | $-5.803 \cdot 10^{-7}$ | $1.701 \cdot 10^{-12}$ | $1.701 \cdot 10^{-12}$ | $-1.117 \cdot 10^{-6}$ |
| $c\bar{s} \to \tau^+\nu_\tau$ | $-1.029 \cdot 10^{-9}$ | $-1.029 \cdot 10^{-9}$ | $2.915 \cdot 10^{-7}$ | $1.157 \cdot 10^{-9}$ | $1.157 \cdot 10^{-9}$ | $6.912 \cdot 10^{-7}$ |
| $d\bar{d} \to c\bar{c}$ | $-3.381 \cdot 10^{-12}$ | $-3.381 \cdot 10^{-12}$ | $-5.916 \cdot 10^{-7}$ | $4.676 \cdot 10^{-12}$ | $4.676 \cdot 10^{-12}$ | $-1.176 \cdot 10^{-6}$ |
| $d\bar{d} \to e^+e^-$ | $-1.702 \cdot 10^{-12}$ | $-1.702 \cdot 10^{-12}$ | $-5.875 \cdot 10^{-7}$ | $5.574 \cdot 10^{-13}$ | $5.574 \cdot 10^{-13}$ | $-1.166 \cdot 10^{-6}$ |
| $d\bar{d} \to s\bar{s}$ | $-3.276 \cdot 10^{-10}$ | $-3.276 \cdot 10^{-10}$ | $3.357 \cdot 10^{-7}$ | $1.111 \cdot 10^{-9}$ | $1.111 \cdot 10^{-9}$ | $6.3 \cdot 10^{-7}$ |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | $-2.159 \cdot 10^{-10}$ | $-2.159 \cdot 10^{-10}$ | $3.242 \cdot 10^{-7}$ | $5.718 \cdot 10^{-10}$ | $5.718 \cdot 10^{-10}$ | $6.296 \cdot 10^{-7}$ |
| $s\bar{s} \to s\bar{s}$ | $-1.561 \cdot 10^{-8}$ | $-1.561 \cdot 10^{-8}$ | $3.203 \cdot 10^{-7}$ | $1.678 \cdot 10^{-8}$ | $1.678 \cdot 10^{-8}$ | $5.96 \cdot 10^{-7}$ |
| $t\bar{t} \to d\bar{d}$ | $2.067 \cdot 10^{-12}$ | $2.067 \cdot 10^{-12}$ | $-5.805 \cdot 10^{-7}$ | $3.671 \cdot 10^{-12}$ | $3.671 \cdot 10^{-12}$ | $-1.171 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-1.308 \cdot 10^{-9}$ | $-1.308 \cdot 10^{-9}$ | $3.822 \cdot 10^{-7}$ | $1.867 \cdot 10^{-9}$ | $1.867 \cdot 10^{-9}$ | $6.428 \cdot 10^{-7}$ |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| $u\bar{d} \to \mu^+\nu_\mu$ | $-1.596 \cdot 10^{-12}$ | $-1.596 \cdot 10^{-12}$ | $-5.639 \cdot 10^{-7}$ | $2.986 \cdot 10^{-12}$ | $2.986 \cdot 10^{-12}$ | $-1.172 \cdot 10^{-6}$ |
| $u\bar{d} \to c\bar{s}$ | $-4.489 \cdot 10^{-10}$ | $-4.489 \cdot 10^{-10}$ | $3.119 \cdot 10^{-7}$ | $1.249 \cdot 10^{-9}$ | $1.249 \cdot 10^{-9}$ | $6.406 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $1.031 \cdot 10^{-9}$ | $1.031 \cdot 10^{-9}$ | $-5.819 \cdot 10^{-7}$ | $1.429 \cdot 10^{-10}$ | $1.429 \cdot 10^{-10}$ | $-1.189 \cdot 10^{-6}$ |

## 2.92  cdd8

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $d\bar{d} \to s\bar{s}$ | 0.04308 | 0.04308 | 0 | 0.02908 | 0.02908 | 0 |
| $s\bar{s} \to s\bar{s}$ | $-0.09067$ | $-0.09067$ | $-9.927 \cdot 10^{-8}$ | 0.1836 | 0.1836 | $-2.179 \cdot 10^{-7}$ |

## 2.93  ceBIm11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $HH \to ze^+e^-$ | $-1.123 \cdot 10^{-13}$ | $-1.123 \cdot 10^{-13}$ | 0 | $1.6 \cdot 10^{-7}$ | $1.6 \cdot 10^{-7}$ | 0 |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | $8.948 \cdot 10^{-14}$ | $8.948 \cdot 10^{-14}$ | 0 | $7.908 \cdot 10^{-8}$ | $7.908 \cdot 10^{-8}$ | 0 |
| $H\gamma \to e^+e^-$ | $-1.096 \cdot 10^{-23}$ | $-1.096 \cdot 10^{-23}$ | 0 | 0.2474 | 0.2474 | 0 |
| $d\bar{d} \to e^+e^-$ | $7.932 \cdot 10^{-26}$ | $7.932 \cdot 10^{-26}$ | 0 | 0.0003412 | 0.0003412 | 0 |
| $e^+\nu_\mu \to e^+\nu_\mu$ | $-3.809 \cdot 10^{-24}$ | $-3.809 \cdot 10^{-24}$ | 0 | 0.01187 | 0.01187 | 0 |
| $e^+\nu_e \to e^+\nu_e$ | $-2.18 \cdot 10^{-22}$ | $-2.18 \cdot 10^{-22}$ | 0 | 0.0008839 | 0.0008839 | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $-1.426 \cdot 10^{-14}$ | $-1.426 \cdot 10^{-14}$ | 0 | 0.3931 | 0.3931 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $2.709 \cdot 10^{-24}$ | $2.709 \cdot 10^{-24}$ | 0 | 0.001315 | 0.001315 | 0 |
| $e^+e^- \to e^+e^-$ | $-3.795 \cdot 10^{-22}$ | $-3.795 \cdot 10^{-22}$ | 0 | 0.07331 | 0.07331 | 0 |

## 2.94  ceBIm22

| interference | square |
|---|---|

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $Hz \to \mu^+\mu^-$ | $1.684 \cdot 10^{-8}$ | $1.684 \cdot 10^{-8}$ | 0 | 0.1093 | 0.1093 | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $1.989 \cdot 10^{-21}$ | $1.989 \cdot 10^{-21}$ | 0 | 0.004184 | 0.004184 | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-1.869 \cdot 10^{-23}$ | $-1.869 \cdot 10^{-23}$ | 0 | 0.000346 | 0.000346 | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $2.945 \cdot 10^{-24}$ | $2.945 \cdot 10^{-24}$ | 0 | 0.0006085 | 0.0006085 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $1.01 \cdot 10^{-22}$ | $1.01 \cdot 10^{-22}$ | 0 | 0.0006948 | 0.0006948 | 0 |

## 2.95 ceBIm33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $5.51 \cdot 10^{-21}$ | $5.51 \cdot 10^{-21}$ | 0 | 0.00762 | 0.00762 | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $2.23 \cdot 10^{-14}$ | $2.23 \cdot 10^{-14}$ | 0 | 0.04664 | 0.04664 | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | $-1.899 \cdot 10^{-20}$ | $-1.899 \cdot 10^{-20}$ | 0 | 0.001076 | 0.001076 | 0 |

## 2.96 ceBRe11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to ze^+e^-$ | $-4.151 \cdot 10^{-13}$ | $-4.151 \cdot 10^{-13}$ | 0 | $4.936 \cdot 10^{-7}$ | $4.936 \cdot 10^{-7}$ | 0 |
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $-1.607 \cdot 10^{-12}$ | $-1.607 \cdot 10^{-12}$ | 0 | $2.455 \cdot 10^{-7}$ | $2.455 \cdot 10^{-7}$ | 0 |
| $H\gamma \to e^+e^-$ | $-6.656 \cdot 10^{-18}$ | $-6.656 \cdot 10^{-18}$ | 0 | 0.3786 | 0.3786 | 0 |
| $d\bar{d} \to e^+e^-$ | $-1.978 \cdot 10^{-10}$ | $-1.978 \cdot 10^{-10}$ | 0 | $4.904 \cdot 10^{-5}$ | $4.904 \cdot 10^{-5}$ | 0 |
| $e^+\nu_\mu \to e^+\nu_\mu$ | $1.076 \cdot 10^{-8}$ | $1.076 \cdot 10^{-8}$ | 0 | 0.001434 | 0.001434 | 0 |
| $e^+\nu_e \to e^+\nu_e$ | $3.451 \cdot 10^{-8}$ | $3.451 \cdot 10^{-8}$ | 0 | 0.006406 | 0.006406 | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $9.51 \cdot 10^{-9}$ | $9.51 \cdot 10^{-9}$ | 0 | 0.02043 | 0.02043 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $3.655 \cdot 10^{-8}$ | $3.655 \cdot 10^{-8}$ | 0 | 0.009158 | 0.009158 | 0 |
| $e^+e^- \to e^+e^-$ | $1.311 \cdot 10^{-7}$ | $1.311 \cdot 10^{-7}$ | 0 | 0.05218 | 0.05218 | 0 |

## 2.97   ceBRe22

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $Hz \to \mu^+\mu^-$ | $-9.112 \cdot 10^{-7}$ | $-9.112 \cdot 10^{-7}$ | 0 | 0.1262 | 0.1262 | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $5.258 \cdot 10^{-6}$ | $5.258 \cdot 10^{-6}$ | 0 | 0.003621 | 0.003621 | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $3.301 \cdot 10^{-8}$ | $3.301 \cdot 10^{-8}$ | 0 | 0.0003211 | 0.0003211 | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $7.151 \cdot 10^{-7}$ | $7.151 \cdot 10^{-7}$ | 0 | 0.0009011 | 0.0009011 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $4.73 \cdot 10^{-6}$ | $4.73 \cdot 10^{-6}$ | 0 | 0.0002494 | 0.0002494 | 0 |

## 2.98   ceBRe33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\mu^+\mu^- \to \tau^+\tau^-$ | 0.0001492 | 0.0001492 | 0 | 0.00565 | 0.00565 | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $-7.622 \cdot 10^{-5}$ | $-7.622 \cdot 10^{-5}$ | 0 | 0.06895 | 0.06895 | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | $-3.483 \cdot 10^{-5}$ | $-3.483 \cdot 10^{-5}$ | 0 | 0.0001106 | 0.0001106 | 0 |

## 2.99   ceHIm11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to W^+e^-\bar{\nu}_e$ | $-3.7 \cdot 10^{-13}$ | $-3.7 \cdot 10^{-13}$ | 0 | $3.195 \cdot 10^{-7}$ | $3.195 \cdot 10^{-7}$ | 0 |
| $HH \to ze^+e^-$ | $8.003 \cdot 10^{-13}$ | $8.003 \cdot 10^{-13}$ | 0 | $1.927 \cdot 10^{-6}$ | $1.927 \cdot 10^{-6}$ | 0 |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | $-3.451 \cdot 10^{-13}$ | $-3.451 \cdot 10^{-13}$ | 0 | $5.332 \cdot 10^{-9}$ | $5.332 \cdot 10^{-9}$ | 0 |
| $H\gamma \to e^+e^-$ | $1.654 \cdot 10^{-23}$ | $1.654 \cdot 10^{-23}$ | 0 | 0.003632 | 0.003632 | 0 |
| $d\bar{d} \to e^+e^-$ | $-1.892 \cdot 10^{-33}$ | $-1.892 \cdot 10^{-33}$ | 0 | $2.274 \cdot 10^{-13}$ | $2.274 \cdot 10^{-13}$ | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $-1.681 \cdot 10^{-20}$ | $-1.681 \cdot 10^{-20}$ | 0 | $8.14 \cdot 10^{-8}$ | $8.14 \cdot 10^{-8}$ | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $-2.88 \cdot 10^{-31}$ | $-2.88 \cdot 10^{-31}$ | 0 | $3.493 \cdot 10^{-10}$ | $3.493 \cdot 10^{-10}$ | 0 |

| $e^+e^- \to e^+e^-$ | $-2.329 \cdot 10^{-24}$ | $-2.329 \cdot 10^{-24}$ | 0 | $6.104 \cdot 10^{-14}$ | $6.104 \cdot 10^{-14}$ | 0 |
|---|---|---|---|---|---|---|

## 2.100 ceHIm22

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HW^- \to \mu^-\bar{\nu}_\mu$ | $6.775 \cdot 10^{-8}$ | $6.775 \cdot 10^{-8}$ | 0 | 0.02143 | 0.02143 | 0 |
| $Hz \to \mu^+\mu^-$ | $4.306 \cdot 10^{-12}$ | $4.306 \cdot 10^{-12}$ | 0 | 0.02035 | 0.02035 | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $7.283 \cdot 10^{-26}$ | $7.283 \cdot 10^{-26}$ | 0 | $9.878 \cdot 10^{-8}$ | $9.878 \cdot 10^{-8}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $-1.635 \cdot 10^{-25}$ | $-1.635 \cdot 10^{-25}$ | 0 | $1.822 \cdot 10^{-7}$ | $1.822 \cdot 10^{-7}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $-8.695 \cdot 10^{-28}$ | $-8.695 \cdot 10^{-28}$ | 0 | $1.682 \cdot 10^{-8}$ | $1.682 \cdot 10^{-8}$ | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $-1.543 \cdot 10^{-32}$ | $-1.543 \cdot 10^{-32}$ | 0 | $8.169 \cdot 10^{-15}$ | $8.169 \cdot 10^{-15}$ | 0 |

## 2.101 ceHIm33

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to H\tau^+\tau^-$ | $1.935 \cdot 10^{-10}$ | $1.935 \cdot 10^{-10}$ | 0 | $2.168 \cdot 10^{-6}$ | $2.168 \cdot 10^{-6}$ | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $4.855 \cdot 10^{-28}$ | $4.855 \cdot 10^{-28}$ | 0 | $3.493 \cdot 10^{-10}$ | $3.493 \cdot 10^{-10}$ | 0 |
| $e^+\tau^- \to e^+\tau^-$ | $2.122 \cdot 10^{-26}$ | $2.122 \cdot 10^{-26}$ | 0 | $6.731 \cdot 10^{-15}$ | $6.731 \cdot 10^{-15}$ | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | $-1.976 \cdot 10^{-21}$ | $-1.976 \cdot 10^{-21}$ | 0 | 0.0002929 | 0.0002929 | 0 |

## 2.102 ceHRe11

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to W^+e^-\bar{\nu}_e$ | $-1.548 \cdot 10^{-11}$ | $-1.548 \cdot 10^{-11}$ | 0 | $1.114 \cdot 10^{-5}$ | $1.114 \cdot 10^{-5}$ | 0 |
| $HH \to ze^+e^-$ | $2.873 \cdot 10^{-12}$ | $2.873 \cdot 10^{-12}$ | 0 | $9.617 \cdot 10^{-8}$ | $9.617 \cdot 10^{-8}$ | 0 |

| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $2.623 \cdot 10^{-11}$ | $2.623 \cdot 10^{-11}$ | 0 | $4.01 \cdot 10^{-7}$ | $4.01 \cdot 10^{-7}$ | 0 |
| $H\gamma \to e^+ e^-$ | $-1.435 \cdot 10^{-7}$ | $-1.435 \cdot 10^{-7}$ | 0 | 0.001482 | 0.001482 | 0 |
| $d\bar{d} \to e^+ e^-$ | $-2.189 \cdot 10^{-17}$ | $-2.189 \cdot 10^{-17}$ | 0 | $2.274 \cdot 10^{-13}$ | $2.274 \cdot 10^{-13}$ | 0 |
| $e^+ \tau^- \to e^+ \tau^-$ | $-1.877 \cdot 10^{-11}$ | $-1.877 \cdot 10^{-11}$ | 0 | $8.112 \cdot 10^{-8}$ | $8.112 \cdot 10^{-8}$ | 0 |
| $e^+ e^- \to \mu^+ \mu^-$ | $-3.397 \cdot 10^{-14}$ | $-3.397 \cdot 10^{-14}$ | 0 | $3.493 \cdot 10^{-10}$ | $3.493 \cdot 10^{-10}$ | 0 |
| $e^+ e^- \to e^+ e^-$ | $5.279 \cdot 10^{-8}$ | $5.279 \cdot 10^{-8}$ | 0 | $9.382 \cdot 10^{-14}$ | $9.382 \cdot 10^{-14}$ | 0 |

## 2.103 ceHRe22

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $HW^- \to \mu^- \bar{\nu}_\mu$ | $-1.158 \cdot 10^{-5}$ | $-1.158 \cdot 10^{-5}$ | 0 | 0.02107 | 0.02107 | 0 |
| $Hz \to \mu^+ \mu^-$ | $-1.313 \cdot 10^{-6}$ | $-1.313 \cdot 10^{-6}$ | 0 | 0.02045 | 0.02045 | 0 |
| $\mu^+ \mu^- \to \tau^+ \tau^-$ | $-1.957 \cdot 10^{-9}$ | $-1.957 \cdot 10^{-9}$ | 0 | $9.878 \cdot 10^{-8}$ | $9.878 \cdot 10^{-8}$ | 0 |
| $b\bar{b} \to \mu^+ \mu^-$ | $-3.662 \cdot 10^{-9}$ | $-3.662 \cdot 10^{-9}$ | 0 | $1.822 \cdot 10^{-7}$ | $1.822 \cdot 10^{-7}$ | 0 |
| $c\bar{c} \to \mu^+ \mu^-$ | $-3.336 \cdot 10^{-10}$ | $-3.336 \cdot 10^{-10}$ | 0 | $1.682 \cdot 10^{-8}$ | $1.682 \cdot 10^{-8}$ | 0 |
| $e^+ e^- \to \mu^+ \mu^-$ | $-1.611 \cdot 10^{-16}$ | $-1.611 \cdot 10^{-16}$ | 0 | $8.169 \cdot 10^{-15}$ | $8.169 \cdot 10^{-15}$ | 0 |

## 2.104 ceHRe33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $HH \to H\tau^+ \tau^-$ | $-1.273 \cdot 10^{-8}$ | $-1.273 \cdot 10^{-8}$ | 0 | $1.296 \cdot 10^{-7}$ | $1.296 \cdot 10^{-7}$ | 0 |
| $\mu^+ \mu^- \to \tau^+ \tau^-$ | $-1.163 \cdot 10^{-10}$ | $-1.163 \cdot 10^{-10}$ | 0 | $3.492 \cdot 10^{-10}$ | $3.492 \cdot 10^{-10}$ | 0 |
| $e^+ \tau^- \to e^+ \tau^-$ | $-5.685 \cdot 10^{-15}$ | $-5.685 \cdot 10^{-15}$ | 0 | $6.658 \cdot 10^{-15}$ | $6.658 \cdot 10^{-15}$ | 0 |
| $t\bar{t} \to \tau^+ \tau^-$ | $-9.778 \cdot 10^{-5}$ | $-9.778 \cdot 10^{-5}$ | 0 | 0.0002929 | 0.0002929 | 0 |

## 2.105 ceWIm22

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HW^- \to \mu^- \bar{\nu}_\mu$ | $-2.356 \cdot 10^{-8}$ | $-2.356 \cdot 10^{-8}$ | 0 | 0.4923 | 0.4923 | 0 |
| $Hz \to \mu^+ \mu^-$ | $-3.739 \cdot 10^{-8}$ | $-3.739 \cdot 10^{-8}$ | 0 | 0.3173 | 0.3173 | 0 |
| $\mu^+ \mu^- \to \tau^+ \tau^-$ | $7.611 \cdot 10^{-22}$ | $7.611 \cdot 10^{-22}$ | 0 | 0.005072 | 0.005072 | 0 |
| $b\bar{b} \to \mu^+ \mu^-$ | $-2.333 \cdot 10^{-23}$ | $-2.333 \cdot 10^{-23}$ | 0 | 0.001715 | 0.001715 | 0 |
| $c\bar{c} \to \mu^+ \mu^-$ | $-2.17 \cdot 10^{-23}$ | $-2.17 \cdot 10^{-23}$ | 0 | 0.001385 | 0.001385 | 0 |
| $e^+ \nu_e \to \mu^+ \nu_\mu$ | $1.059 \cdot 10^{-22}$ | $1.059 \cdot 10^{-22}$ | 0 | 0.01273 | 0.01273 | 0 |
| $e^+ e^- \to \mu^+ \mu^-$ | $-1.597 \cdot 10^{-22}$ | $-1.597 \cdot 10^{-22}$ | 0 | 0.00373 | 0.00373 | 0 |
| $u\bar{d} \to \mu^+ \nu_\mu$ | $-2.351 \cdot 10^{-23}$ | $-2.351 \cdot 10^{-23}$ | 0 | 0.004355 | 0.004355 | 0 |

## 2.106 ceWIm33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\mu^+ \mu^- \to \tau^+ \tau^-$ | $1.441 \cdot 10^{-21}$ | $1.441 \cdot 10^{-21}$ | 0 | 0.006229 | 0.006229 | 0 |
| $c\bar{s} \to \tau^+ \nu_\tau$ | $-2.245 \cdot 10^{-21}$ | $-2.245 \cdot 10^{-21}$ | 0 | 0.003766 | 0.003766 | 0 |
| $e^+ \tau^- \to e^+ \tau^-$ | $4.334 \cdot 10^{-14}$ | $4.334 \cdot 10^{-14}$ | 0 | 0.01407 | 0.01407 | 0 |
| $t\bar{t} \to \tau^+ \tau^-$ | $-5.267 \cdot 10^{-20}$ | $-5.267 \cdot 10^{-20}$ | 0 | 0.0007184 | 0.0007184 | 0 |

## 2.107 ceWRe11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to W^+ e^- \bar{\nu}_e$ | $-1.055 \cdot 10^{-11}$ | $-1.055 \cdot 10^{-11}$ | 0 | $1.342 \cdot 10^{-7}$ | $1.342 \cdot 10^{-7}$ | 0 |
| $HH \to ze^+ e^-$ | $-4.463 \cdot 10^{-13}$ | $-4.463 \cdot 10^{-13}$ | 0 | $3.744 \cdot 10^{-7}$ | $3.744 \cdot 10^{-7}$ | 0 |
| $HW^- \to \gamma e^- \bar{\nu}_e$ | $-1.177 \cdot 10^{-12}$ | $-1.177 \cdot 10^{-12}$ | 0 | $1.174 \cdot 10^{-6}$ | $1.174 \cdot 10^{-6}$ | 0 |
| $H\gamma \to e^+ e^-$ | $1.822 \cdot 10^{-18}$ | $1.822 \cdot 10^{-18}$ | 0 | 0.2223 | 0.2223 | 0 |
| $b\bar{t} \to e^- \bar{\nu}_e$ | $-1.645 \cdot 10^{-8}$ | $-1.645 \cdot 10^{-8}$ | 0 | 0.00207 | 0.00207 | 0 |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to e^+ e^-$ | $1.011 \cdot 10^{-9}$ | $1.011 \cdot 10^{-9}$ | 0 | 0.0005455 | 0.0005455 | 0 |
| $e^+ \nu_\mu \to e^+ \nu_\mu$ | $2.051 \cdot 10^{-7}$ | $2.051 \cdot 10^{-7}$ | 0 | 0.1562 | 0.1562 | 0 |
| $e^+ \nu_e \to \mu^+ \nu_\mu$ | $-3.01 \cdot 10^{-8}$ | $-3.01 \cdot 10^{-8}$ | 0 | 0.01257 | 0.01257 | 0 |
| $e^+ \nu_e \to e^+ \nu_e$ | $-6.01 \cdot 10^{-9}$ | $-6.01 \cdot 10^{-9}$ | 0 | 0.00236 | 0.00236 | 0 |
| $e^+ \tau^- \to e^+ \tau^-$ | $1.388 \cdot 10^{-7}$ | $1.388 \cdot 10^{-7}$ | 0 | 0.2266 | 0.2266 | 0 |
| $e^+ e^- \to \mu^+ \mu^-$ | $-2.763 \cdot 10^{-8}$ | $-2.763 \cdot 10^{-8}$ | 0 | 0.004821 | 0.004821 | 0 |
| $e^+ e^- \to e^+ e^-$ | $-6.196 \cdot 10^{-9}$ | $-6.196 \cdot 10^{-9}$ | 0 | 0.1347 | 0.1347 | 0 |

## 2.108   ceWRe22

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HW^- \to \mu^- \bar{\nu}_\mu$ | $-1.238 \cdot 10^{-5}$ | $-1.238 \cdot 10^{-5}$ | 0 | 0.6806 | 0.6806 | 0 |
| $Hz \to \mu^+ \mu^-$ | $-1.702 \cdot 10^{-6}$ | $-1.702 \cdot 10^{-6}$ | 0 | 0.1039 | 0.1039 | 0 |
| $\mu^+ \mu^- \to \tau^+ \tau^-$ | $-3.283 \cdot 10^{-6}$ | $-3.283 \cdot 10^{-6}$ | 0 | 0.002282 | 0.002282 | 0 |
| $b\bar{b} \to \mu^+ \mu^-$ | $-1.413 \cdot 10^{-6}$ | $-1.413 \cdot 10^{-6}$ | 0 | 0.0006418 | 0.0006418 | 0 |
| $c\bar{c} \to \mu^+ \mu^-$ | $-1.1 \cdot 10^{-6}$ | $-1.1 \cdot 10^{-6}$ | 0 | 0.002179 | 0.002179 | 0 |
| $e^+ \nu_e \to \mu^+ \nu_\mu$ | $-6.225 \cdot 10^{-6}$ | $-6.225 \cdot 10^{-6}$ | 0 | 0.01257 | 0.01257 | 0 |
| $e^+ e^- \to \mu^+ \mu^-$ | $-5.713 \cdot 10^{-6}$ | $-5.713 \cdot 10^{-6}$ | 0 | 0.004821 | 0.004821 | 0 |
| $u\bar{d} \to \mu^+ \nu_\mu$ | $-1.819 \cdot 10^{-6}$ | $-1.819 \cdot 10^{-6}$ | 0 | 0.004352 | 0.004352 | 0 |

## 2.109   ceWRe33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\mu^+ \mu^- \to \tau^+ \tau^-$ | $-5.043 \cdot 10^{-5}$ | $-5.043 \cdot 10^{-5}$ | 0 | 0.0005002 | 0.0005002 | 0 |
| $c\bar{s} \to \tau^+ \nu_\tau$ | $-3.681 \cdot 10^{-5}$ | $-3.681 \cdot 10^{-5}$ | 0 | 0.004056 | 0.004056 | 0 |
| $e^+ \tau^- \to e^+ \tau^-$ | $7.313 \cdot 10^{-5}$ | $7.313 \cdot 10^{-5}$ | 0 | 0.05191 | 0.05191 | 0 |
| $t\bar{t} \to \tau^+ \tau^-$ | $-4.896 \cdot 10^{-5}$ | $-4.896 \cdot 10^{-5}$ | 0 | 0.001581 | 0.001581 | 0 |

## 2.110 ced11

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to e^+ e^-$ | 0.0004386 | 0.0004386 | 0 | 0.005371 | 0.005371 | 0 |

## 2.111 cee1111

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+ e^- \to e^+ e^-$ | $-0.1786$ | $-0.1786$ | 0 | 3.425 | 3.425 | 0 |

## 2.112 cee1122

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+ e^- \to \mu^+ \mu^-$ | 0.05156 | 0.05156 | 0 | 0.2104 | 0.2104 | 0 |

## 2.113 cee1133

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+ \tau^- \to e^+ \tau^-$ | $-2.087$ | $-2.087$ | 0 | 0.8202 | 0.8202 | 0 |

## 2.114 cee2233

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |

| $\mu^+\mu^- \to \tau^+\tau^-$ | 0.03998 | 0.03998 | 0 | | 0.1632 | 0.1632 | 0 |
|---|---|---|---|---|---|---|---|

## 2.115 ceu22

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-0.026$ | $-0.026$ | 0 | | 0.1592 | 0.1592 | 0 |

## 2.116 cjQbd1Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-1.003 \cdot 10^{-15}$ | $-1.003 \cdot 10^{-15}$ | $-5.981 \cdot 10^{-7}$ | $7.195 \cdot 10^{-10}$ | $7.195 \cdot 10^{-10}$ | $-1.181 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $3.949 \cdot 10^{-28}$ | $-2.334 \cdot 10^{-28}$ | $1.591$ | $1.439 \cdot 10^{-9}$ | $1.439 \cdot 10^{-9}$ | $-1.181 \cdot 10^{-6}$ |

## 2.117 cjQbd1Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $5.955 \cdot 10^{-12}$ | $5.955 \cdot 10^{-12}$ | $-5.878 \cdot 10^{-7}$ | $7.195 \cdot 10^{-10}$ | $7.195 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $1.37 \cdot 10^{-11}$ | $1.37 \cdot 10^{-11}$ | $-5.839 \cdot 10^{-7}$ | $1.439 \cdot 10^{-9}$ | $1.439 \cdot 10^{-9}$ | $-1.181 \cdot 10^{-6}$ |

## 2.118 cjQbd8Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-1.34 \cdot 10^{-15}$ | $-1.34 \cdot 10^{-15}$ | $-5.972 \cdot 10^{-7}$ | $1.599 \cdot 10^{-10}$ | $1.599 \cdot 10^{-10}$ | $-1.126 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $1.118 \cdot 10^{-28}$ | $-3.278 \cdot 10^{-28}$ | $3.932$ | $3.198 \cdot 10^{-10}$ | $3.198 \cdot 10^{-10}$ | $-1.157 \cdot 10^{-6}$ |

## 2.119   cjQbd8Re

|  | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $7.864 \cdot 10^{-12}$ | $7.864 \cdot 10^{-12}$ | $-5.977 \cdot 10^{-7}$ | | $1.599 \cdot 10^{-10}$ | $1.599 \cdot 10^{-10}$ | $-1.188 \cdot 10^{-6}$ |
| $b\bar{b} \to d\bar{d}$ | $1.58 \cdot 10^{-11}$ | $1.58 \cdot 10^{-11}$ | $-5.697 \cdot 10^{-7}$ | | $3.198 \cdot 10^{-10}$ | $3.198 \cdot 10^{-10}$ | $-1.157 \cdot 10^{-6}$ |

## 2.120   cjQtu1Im

|  | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $8.542 \cdot 10^{-15}$ | $8.542 \cdot 10^{-15}$ | $-7.258 \cdot 10^{-7}$ | | $1.539 \cdot 10^{-10}$ | $1.539 \cdot 10^{-10}$ | $-1.429 \cdot 10^{-6}$ |
| $t\bar{t} \to c\bar{c}$ | $\color{blue}{-3.884 \cdot 10^{-21}}$ | $\color{blue}{6.998 \cdot 10^{-22}}$ | $\color{blue}{1.18}$ | | $0.0001065$ | $0.0001065$ | $2.817 \cdot 10^{-7}$ |

## 2.121   cjQtu1Re

|  | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $5.062 \cdot 10^{-11}$ | $5.062 \cdot 10^{-11}$ | $-7.309 \cdot 10^{-7}$ | | $1.539 \cdot 10^{-10}$ | $1.539 \cdot 10^{-10}$ | $-1.494 \cdot 10^{-6}$ |
| $t\bar{t} \to c\bar{c}$ | $3.126 \cdot 10^{-5}$ | $3.126 \cdot 10^{-5}$ | $1.279 \cdot 10^{-7}$ | | $0.0001065$ | $0.0001065$ | $2.817 \cdot 10^{-7}$ |

## 2.122   cjQtu8Im

|  | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ | | mod1 | mod2 | $1-\mathrm{mod2/mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $1.15 \cdot 10^{-14}$ | $1.15 \cdot 10^{-14}$ | $-6.954 \cdot 10^{-7}$ | | $3.42 \cdot 10^{-11}$ | $3.42 \cdot 10^{-11}$ | $-1.433 \cdot 10^{-6}$ |
| $t\bar{t} \to c\bar{c}$ | $\color{blue}{-2.39 \cdot 10^{-21}}$ | $\color{blue}{-1.354 \cdot 10^{-21}}$ | $\color{blue}{0.4334}$ | | $2.367 \cdot 10^{-5}$ | $2.367 \cdot 10^{-5}$ | $2.957 \cdot 10^{-7}$ |

## 2.123 cjQtu8Re

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $6.748 \cdot 10^{-11}$ | $6.748 \cdot 10^{-11}$ | $-7.262 \cdot 10^{-7}$ | $3.42 \cdot 10^{-11}$ | $3.42 \cdot 10^{-11}$ | $-1.462 \cdot 10^{-6}$ |
| $t\bar{t} \to c\bar{c}$ | $4.669 \cdot 10^{-5}$ | $4.669 \cdot 10^{-5}$ | $1.499 \cdot 10^{-7}$ | $2.367 \cdot 10^{-5}$ | $2.367 \cdot 10^{-5}$ | $2.957 \cdot 10^{-7}$ |

## 2.124 cjd1

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-0.008174$ | $-0.008174$ | 0 | 0.6125 | 0.6125 | 0 |
| $d\bar{d} \to s\bar{s}$ | $-0.0226$ | $-0.0226$ | 0 | 1.629 | 1.629 | 0 |
| $s\bar{s} \to s\bar{s}$ | 0.1304 | 0.1304 | 0 | 2.068 | 2.068 | 0 |
| $u\bar{d} \to u\bar{d}$ | 0.2004 | 0.2004 | 0 | 1 | 1 | 0 |

## 2.125 cjd8

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | 0.2628 | 0.2628 | 0 | 0.08869 | 0.08869 | 0 |
| $d\bar{d} \to s\bar{s}$ | 0.2942 | 0.2942 | 0 | 0.09929 | 0.09929 | 0 |
| $s\bar{s} \to s\bar{s}$ | $-1.002$ | $-1.002$ | 0 | 0.6965 | 0.6965 | 0 |
| $u\bar{d} \to u\bar{d}$ | $-0.6607$ | $-0.6607$ | 0 | 0.2222 | 0.2222 | 0 |

## 2.126 cje11

interference                                            square

| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|---|
| $d\bar{d} \to e^+e^-$ | $-0.0001356$ | $-0.0001356$ | 0 | | 0.003258 | 0.003258 | 0 |

## 2.127   cje22

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-0.0003323$ | $-0.0003323$ | 0 | | 0.008297 | 0.008297 | 0 |

## 2.128   cjj11

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-0.05635$ | $-0.05635$ | 0 | | 0.5424 | 0.5424 | 0 |
| $d\bar{d} \to s\bar{s}$ | 0.1233 | 0.1233 | 0 | | 1.112 | 1.112 | 0 |
| $s\bar{s} \to s\bar{s}$ | $-0.06359$ | $-0.06359$ | 0 | | 0.65 | 0.65 | 0 |
| $u\bar{d} \to u\bar{d}$ | $7.881 \cdot 10^{-6}$ | $7.881 \cdot 10^{-6}$ | 0 | | $4.519 \cdot 10^{-5}$ | $4.519 \cdot 10^{-5}$ | 0 |
| $u\bar{u} \to c\bar{c}$ | 0.03528 | 0.03528 | 0 | | 0.3191 | 0.3191 | 0 |
| $u\bar{u} \to u\bar{u}$ | $-3.672$ | $-3.672$ | 0 | | 5.231 | 5.231 | 0 |

## 2.129   cjj18

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | 1.111 | 1.111 | 0 | | 0.7498 | 0.7498 | 0 |
| $d\bar{d} \to s\bar{s}$ | 0.5251 | 0.5251 | $-1.905 \cdot 10^{-8}$ | | 0.3544 | 0.3544 | 0 |
| $s\bar{s} \to s\bar{s}$ | $-0.3866$ | $-0.3866$ | 0 | | 0.3552 | 0.3552 | $-2.815 \cdot 10^{-8}$ |
| $u\bar{d} \to u\bar{d}$ | $-8.166$ | $-8.166$ | 0 | | 0.6877 | 0.6877 | 0 |

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| $u\bar{u} \to c\bar{c}$ | 0.08014 | 0.08014 | $-1.248 \cdot 10^{-8}$ | | 0.05409 | 0.05409 | 0 |
| $u\bar{u} \to u\bar{u}$ | $-0.1482$ | $-0.1482$ | 0 | | 0.2185 | 0.2185 | 0 |

## 2.130 cjj31

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| $d\bar{d} \to c\bar{c}$ | 0.2885 | 0.2885 | 0 | 2.777 | 2.777 | 0 |
| $d\bar{d} \to s\bar{s}$ | 0.001498 | 0.001498 | 0 | 0.01352 | 0.01352 | 0 |
| $s\bar{s} \to s\bar{s}$ | $-4.068$ | $-4.068$ | 0 | 5.437 | 5.437 | 0 |
| $u\bar{d} \to c\bar{s}$ | 1.156 | 1.156 | 0 | 10.77 | 10.77 | 0 |
| $u\bar{d} \to u\bar{d}$ | $-1.058$ | $-1.058$ | 0 | 2.127 | 2.127 | 0 |
| $u\bar{u} \to c\bar{c}$ | 0.4405 | 0.4405 | 0 | 3.984 | 3.984 | 0 |
| $u\bar{u} \to u\bar{u}$ | $-285.3$ | $-285.3$ | 0 | 10.45 | 10.45 | 0 |

## 2.131 cjj38

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-0.04247$ | $-0.04247$ | $2.355 \cdot 10^{-8}$ | 0.02866 | 0.02866 | 0 |
| $d\bar{d} \to s\bar{s}$ | 1.285 | 1.285 | 0 | 0.8675 | 0.8675 | 0 |
| $s\bar{s} \to s\bar{s}$ | $-0.7563$ | $-0.7563$ | $-9.256 \cdot 10^{-8}$ | 0.4801 | 0.4801 | $-1.875 \cdot 10^{-7}$ |
| $u\bar{d} \to c\bar{s}$ | <span style="color:red">$-4.669 \cdot 10^{-8}$</span> | <span style="color:red">$1.802 \cdot 10^{-17}$</span> | <span style="color:red">1</span> | 2.901 | 2.901 | 0 |
| $u\bar{d} \to u\bar{d}$ | 0.6646 | 0.6646 | $6.019 \cdot 10^{-8}$ | 0.9463 | 0.9463 | $8.454 \cdot 10^{-8}$ |
| $u\bar{u} \to c\bar{c}$ | 1.316 | 1.316 | 0 | 0.8883 | 0.8883 | 0 |
| $u\bar{u} \to u\bar{u}$ | $-3.092 \cdot 10^{4}$ | $-3.092 \cdot 10^{4}$ | $-9.704 \cdot 10^{-8}$ | 1.185 | 1.185 | $-1.688 \cdot 10^{-7}$ |

## 2.132 cjtQd1Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $5.678 \cdot 10^{-15}$ | $5.678 \cdot 10^{-15}$ | $-5.812 \cdot 10^{-7}$ | $1.433 \cdot 10^{-11}$ | $1.433 \cdot 10^{-11}$ | $-1.186 \cdot 10^{-6}$ |
| $t\bar{t} \to d\bar{d}$ | $8.809 \cdot 10^{-28}$ | $5.584 \cdot 10^{-28}$ | $0.3661$ | $1.783 \cdot 10^{-10}$ | $1.783 \cdot 10^{-10}$ | $-1.178 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-2.539 \cdot 10^{-24}$ | $-3.023 \cdot 10^{-24}$ | $-0.1909$ | $4.47 \cdot 10^{-9}$ | $4.47 \cdot 10^{-9}$ | $6.488 \cdot 10^{-7}$ |

## 2.133 cjtQd1Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-1.1 \cdot 10^{-10}$ | $-1.1 \cdot 10^{-10}$ | $-6.364 \cdot 10^{-7}$ | $1.518 \cdot 10^{-10}$ | $1.518 \cdot 10^{-10}$ | $-1.186 \cdot 10^{-6}$ |
| $t\bar{t} \to d\bar{d}$ | $-9.692 \cdot 10^{-11}$ | $-9.692 \cdot 10^{-11}$ | $-5.881 \cdot 10^{-7}$ | $2.71 \cdot 10^{-10}$ | $2.71 \cdot 10^{-10}$ | $-1.181 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-4.503 \cdot 10^{-8}$ | $-4.503 \cdot 10^{-8}$ | $3.331 \cdot 10^{-7}$ | $1.308 \cdot 10^{-7}$ | $1.308 \cdot 10^{-7}$ | $6.88 \cdot 10^{-7}$ |

## 2.134 cjtQd8Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $8.047 \cdot 10^{-15}$ | $8.047 \cdot 10^{-15}$ | $-5.841 \cdot 10^{-7}$ | $3.596 \cdot 10^{-12}$ | $3.596 \cdot 10^{-12}$ | $-1.168 \cdot 10^{-6}$ |
| $t\bar{t} \to d\bar{d}$ | $7.401 \cdot 10^{-27}$ | $4.152 \cdot 10^{-27}$ | $0.439$ | $4.9 \cdot 10^{-12}$ | $4.9 \cdot 10^{-12}$ | $-1.184 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $8.348 \cdot 10^{-25}$ | $3.206 \cdot 10^{-24}$ | $-2.841$ | $2.386 \cdot 10^{-8}$ | $2.386 \cdot 10^{-8}$ | $6.288 \cdot 10^{-7}$ |

## 2.135 cjtQd8Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-9.907 \cdot 10^{-11}$ | $-9.907 \cdot 10^{-11}$ | $-5.854 \cdot 10^{-7}$ | $1.542 \cdot 10^{-11}$ | $1.542 \cdot 10^{-11}$ | $-1.167 \cdot 10^{-6}$ |
| $t\bar{t} \to d\bar{d}$ | $-2.374 \cdot 10^{-10}$ | $-2.374 \cdot 10^{-10}$ | $-5.897 \cdot 10^{-7}$ | $3.977 \cdot 10^{-11}$ | $3.977 \cdot 10^{-11}$ | $-1.182 \cdot 10^{-6}$ |
| $t\bar{t} \to s\bar{s}$ | $-1.155 \cdot 10^{-7}$ | $-1.155 \cdot 10^{-7}$ | $3.463 \cdot 10^{-7}$ | $2.384 \cdot 10^{-8}$ | $2.384 \cdot 10^{-8}$ | $6.291 \cdot 10^{-7}$ |

## 2.136  cju1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | 0.0001843 | 0.0001843 | 0 | 0.006655 | 0.006655 | 0 |
| $u\bar{d} \to u\bar{d}$ | $-0.1884$ | $-0.1884$ | 0 | 1 | 1 | 0 |
| $u\bar{u} \to c\bar{c}$ | 0.03029 | 0.03029 | 0 | 1.135 | 1.135 | 0 |
| $u\bar{u} \to u\bar{u}$ | $-0.08073$ | $-0.08073$ | 0 | 2.651 | 2.651 | 0 |

## 2.137  cju8

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | 0.3488 | 0.3488 | 0 | 0.1177 | 0.1177 | 0 |
| $u\bar{d} \to u\bar{d}$ | $-1.334$ | $-1.334$ | 0 | 0.2222 | 0.2222 | 0 |
| $u\bar{u} \to c\bar{c}$ | 0.7495 | 0.7495 | 0 | 0.2529 | 0.2529 | 0 |
| $u\bar{u} \to u\bar{u}$ | $-20.65$ | $-20.65$ | 0 | 0.4463 | 0.4463 | 0 |

## 2.138  cjuQb1Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-3.197 \cdot 10^{-16}$ | $-3.197 \cdot 10^{-16}$ | $-7.195 \cdot 10^{-7}$ | $3.848 \cdot 10^{-11}$ | $3.848 \cdot 10^{-11}$ | $-1.455 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $7.012 \cdot 10^{-31}$ | $1.402 \cdot 10^{-30}$ | $-0.9999$ | $7.696 \cdot 10^{-11}$ | $7.696 \cdot 10^{-11}$ | $-1.442 \cdot 10^{-6}$ |

## 2.139  cjuQb1Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|

|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $\bar{b}t \to \bar{d}u$ | $-1.902 \cdot 10^{-12}$ | $-1.902 \cdot 10^{-12}$ | $-7.36 \cdot 10^{-7}$ | $3.848 \cdot 10^{-11}$ | $3.848 \cdot 10^{-11}$ | $-1.429 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $-3.733 \cdot 10^{-12}$ | $-3.733 \cdot 10^{-12}$ | $-7.233 \cdot 10^{-7}$ | $7.696 \cdot 10^{-11}$ | $7.696 \cdot 10^{-11}$ | $-1.455 \cdot 10^{-6}$ |

## 2.140 cjuQb8Im

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-2.031 \cdot 10^{-29}$ | $-8.296 \cdot 10^{-30}$ | $0.5915$ | $8.551 \cdot 10^{-12}$ | $8.551 \cdot 10^{-12}$ | $-1.45 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $4.595 \cdot 10^{-29}$ | $-1.256 \cdot 10^{-29}$ | $1.273$ | $1.71 \cdot 10^{-11}$ | $1.71 \cdot 10^{-11}$ | $-1.403 \cdot 10^{-6}$ |

## 2.141 cjuQb8Re

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-2.666 \cdot 10^{-29}$ | $-2.314 \cdot 10^{-29}$ | $0.1319$ | $8.551 \cdot 10^{-12}$ | $8.551 \cdot 10^{-12}$ | $-1.45 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $6.282 \cdot 10^{-14}$ | $6.282 \cdot 10^{-14}$ | $-7.322 \cdot 10^{-7}$ | $1.71 \cdot 10^{-11}$ | $1.71 \cdot 10^{-11}$ | $-1.403 \cdot 10^{-6}$ |

## 2.142 cjujd11Im

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-8.274 \cdot 10^{-31}$ | $-6.89 \cdot 10^{-31}$ | $0.1672$ | $1.279 \cdot 10^{-14}$ | $1.279 \cdot 10^{-14}$ | $-5.474 \cdot 10^{-7}$ |
| $u\bar{d} \to c\bar{s}$ | $-1.506 \cdot 10^{-19}$ | $-1.506 \cdot 10^{-19}$ | $-2.656 \cdot 10^{-7}$ | $1.567 \cdot 10^{-16}$ | $1.567 \cdot 10^{-16}$ | $-5.743 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-7.932 \cdot 10^{-35}$ | $-8.066 \cdot 10^{-35}$ | $-0.01693$ | $1.214 \cdot 10^{-19}$ | $1.214 \cdot 10^{-19}$ | $-2.636 \cdot 10^{-6}$ |

## 2.143 cjujd11Re

| | interference | | | | square | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-2.104 \cdot 10^{-15}$ | $-2.104 \cdot 10^{-15}$ | $-3.326 \cdot 10^{-7}$ | | $5.158 \cdot 10^{-15}$ | $5.158 \cdot 10^{-15}$ | $-6.01 \cdot 10^{-7}$ |
| $u\bar{d} \to c\bar{s}$ | $-3.341 \cdot 10^{-15}$ | $-3.341 \cdot 10^{-15}$ | $-2.993 \cdot 10^{-7}$ | | $2.526 \cdot 10^{-15}$ | $2.526 \cdot 10^{-15}$ | $-5.939 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-1.748 \cdot 10^{-20}$ | $-1.748 \cdot 10^{-20}$ | $-1.373 \cdot 10^{-6}$ | | $7.476 \cdot 10^{-20}$ | $7.476 \cdot 10^{-20}$ | $-2.662 \cdot 10^{-6}$ |

## 2.144 cjujd1Re

| | interference | | | | square | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-3.863 \cdot 10^{-14}$ | $-3.863 \cdot 10^{-14}$ | $-3.107 \cdot 10^{-7}$ | | $1.914 \cdot 10^{-14}$ | $1.914 \cdot 10^{-14}$ | $-5.747 \cdot 10^{-7}$ |
| $u\bar{d} \to c\bar{s}$ | $-1.922 \cdot 10^{-14}$ | $-1.922 \cdot 10^{-14}$ | $-3.122 \cdot 10^{-7}$ | | $9.582 \cdot 10^{-15}$ | $9.582 \cdot 10^{-15}$ | $-5.949 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $1.483 \cdot 10^{-20}$ | $1.483 \cdot 10^{-20}$ | $-1.281 \cdot 10^{-6}$ | | $1.472 \cdot 10^{-19}$ | $1.472 \cdot 10^{-19}$ | $-2.65 \cdot 10^{-6}$ |

## 2.145 cjujd81Im

| | interference | | | | square | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-6.014 \cdot 10^{-31}$ | $-2.485 \cdot 10^{-31}$ | $0.5868$ | | $1.698 \cdot 10^{-15}$ | $1.698 \cdot 10^{-15}$ | $-5.89 \cdot 10^{-7}$ |
| $u\bar{d} \to c\bar{s}$ | $-1.04 \cdot 10^{-18}$ | $-1.04 \cdot 10^{-18}$ | $-2.885 \cdot 10^{-7}$ | | $1.095 \cdot 10^{-15}$ | $1.095 \cdot 10^{-15}$ | $-5.479 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-4.642 \cdot 10^{-35}$ | $-4.496 \cdot 10^{-35}$ | $0.03157$ | | $1.635 \cdot 10^{-20}$ | $1.635 \cdot 10^{-20}$ | $-2.691 \cdot 10^{-6}$ |

## 2.146 cjujd81Re

| | interference | | | | square | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-8.758 \cdot 10^{-15}$ | $-8.758 \cdot 10^{-15}$ | $-2.969 \cdot 10^{-7}$ | | $9.06 \cdot 10^{-16}$ | $9.06 \cdot 10^{-16}$ | $-5.96 \cdot 10^{-7}$ |
| $u\bar{d} \to c\bar{s}$ | $-7.796 \cdot 10^{-15}$ | $-7.796 \cdot 10^{-15}$ | $-2.95 \cdot 10^{-7}$ | | $1.756 \cdot 10^{-15}$ | $1.756 \cdot 10^{-15}$ | $-6.263 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $1.138 \cdot 10^{-19}$ | $1.138 \cdot 10^{-19}$ | $-1.318 \cdot 10^{-6}$ | | $1.164 \cdot 10^{-20}$ | $1.164 \cdot 10^{-20}$ | $-2.664 \cdot 10^{-6}$ |

## 2.147 cjujd8Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $-5.517 \cdot 10^{-33}$ | $-5.517 \cdot 10^{-33}$ | $-3.625 \cdot 10^{-8}$ | $4.254 \cdot 10^{-15}$ | $4.254 \cdot 10^{-15}$ | $-6.112 \cdot 10^{-7}$ |
| $u\bar{d} \to c\bar{s}$ | $8.765 \cdot 10^{-32}$ | $4.631 \cdot 10^{-32}$ | $0.4717$ | $2.129 \cdot 10^{-15}$ | $2.129 \cdot 10^{-15}$ | $-5.636 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-6.938 \cdot 10^{-36}$ | $-6.517 \cdot 10^{-36}$ | $0.06076$ | $1.312 \cdot 10^{-20}$ | $1.312 \cdot 10^{-20}$ | $-2.667 \cdot 10^{-6}$ |

## 2.148 cjujd8Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to c\bar{c}$ | $5.953 \cdot 10^{-16}$ | $5.953 \cdot 10^{-16}$ | $-2.856 \cdot 10^{-7}$ | $4.254 \cdot 10^{-15}$ | $4.254 \cdot 10^{-15}$ | $-6.112 \cdot 10^{-7}$ |
| $u\bar{d} \to c\bar{s}$ | $-3.51 \cdot 10^{-31}$ | $-3.14 \cdot 10^{-39}$ | $1$ | $2.129 \cdot 10^{-15}$ | $2.129 \cdot 10^{-15}$ | $-6.105 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $6.838 \cdot 10^{-20}$ | $6.838 \cdot 10^{-20}$ | $-1.345 \cdot 10^{-6}$ | $1.115 \cdot 10^{-20}$ | $1.115 \cdot 10^{-20}$ | $-2.69 \cdot 10^{-6}$ |

## 2.149 cld11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to e^+e^-$ | $4.402 \cdot 10^{-5}$ | $4.402 \cdot 10^{-5}$ | $0$ | $0.001085$ | $0.001085$ | $0$ |

## 2.150 cld33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $s\bar{s} \to \nu_\tau \bar{\nu}_\tau$ | $0.0001424$ | $0.0001424$ | $0$ | $0.003465$ | $0.003465$ | $0$ |

## 2.151   cle1111

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+\nu_e \to e^+\nu_e$ | $-0.1213$ | $-0.1213$ | 0 | 1 | 1 | 0 |
| $e^+e^- \to e^+e^-$ | $-0.2046$ | $-0.2046$ | 0 | 3.076 | 3.076 | 0 |

## 2.152   cle1122

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+e^- \to \mu^+\mu^-$ | 0.002427 | 0.002427 | 0 | 0.01994 | 0.01994 | 0 |

## 2.153   cle1133

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+\tau^- \to e^+\tau^-$ | $-0.6753$ | $-0.6753$ | 0 | 1 | 1 | 0 |

## 2.154   cle1221

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+\nu_e \to \mu^+\nu_\mu$ | $1.791 \cdot 10^{-9}$ | $1.791 \cdot 10^{-9}$ | 0 | 1 | 1 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | $3.554 \cdot 10^{-9}$ | $3.554 \cdot 10^{-9}$ | 0 | 2 | 2 | 0 |

## 2.155   cle1331

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+\tau^- \to e^+\tau^-$ | $-1.746 \cdot 10^{-8}$ | $-1.746 \cdot 10^{-8}$ | 0 | 0.06872 | 0.06872 | 0 |

## 2.156 cle2211

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+\nu_\mu \to e^+\nu_\mu$ | $-0.4958$ | $-0.4958$ | 0 | 1 | 1 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | 0.05782 | 0.05782 | 0 | 0.4751 | 0.4751 | 0 |

## 2.157 cle2332

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\mu^+\mu^- \to \tau^+\tau^-$ | $1.241 \cdot 10^{-5}$ | $1.241 \cdot 10^{-5}$ | 0 | 2 | 2 | 0 |

## 2.158 cle3311

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+\tau^- \to e^+\tau^-$ | $-0.1546$ | $-0.1546$ | 0 | 1 | 1 | 0 |

## 2.159 cle3322

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\mu^+\mu^- \to \tau^+\tau^-$ | 0.05422 | 0.05422 | 0 | 0.4455 | 0.4455 | 0 |

## 2.160 cleQt1Im11

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{t} \to e^- \bar{\nu}_e$ | $8.145 \cdot 10^{-11}$ | $8.145 \cdot 10^{-11}$ | 0 | | 0.08333 | 0.08333 | 0 |

## 2.161 cleQt1Re11

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{t} \to e^- \bar{\nu}_e$ | $4.866 \cdot 10^{-7}$ | $4.866 \cdot 10^{-7}$ | 0 | | 0.08333 | 0.08333 | 0 |

## 2.162 cleQt1Re33

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $t\bar{t} \to \tau^+ \tau^-$ | 0.003358 | 0.003358 | 0 | | 0.1668 | 0.1668 | 0 |

## 2.163 cleQt3Im11

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{t} \to e^- \bar{\nu}_e$ | $-1.702 \cdot 10^{-10}$ | $-1.702 \cdot 10^{-10}$ | 0 | | 0.4257 | 0.4257 | 0 |

## 2.164 cleQt3Im33

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |

| $t\bar{t} \to \tau^+\tau^-$ | $1.326 \cdot 10^{-18}$ | $1.326 \cdot 10^{-18}$ | 0 | 2.65 | 2.65 | 0 |
|---|---|---|---|---|---|---|

## 2.165  cleQt3Re11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{t} \to e^-\bar{\nu}_e$ | $-1.064 \cdot 10^{-6}$ | $-1.064 \cdot 10^{-6}$ | 0 | 0.4678 | 0.4678 | 0 |

## 2.166  cleQt3Re33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $t\bar{t} \to \tau^+\tau^-$ | 0.01008 | 0.01008 | 0 | 1.51 | 1.51 | 0 |

## 2.167  clebQIm11

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{t} \to e^-\bar{\nu}_e$ | $-2.051 \cdot 10^{-12}$ | $-2.051 \cdot 10^{-12}$ | 0 | 0.08333 | 0.08333 | 0 |

## 2.168  clebQIm22

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to \mu^+\mu^-$ | $7.087 \cdot 10^{-23}$ | $7.087 \cdot 10^{-23}$ | 0 | 0.1667 | 0.1667 | 0 |

## 2.169  clebQRe11

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{t} \to e^- \bar{\nu}_e$ | $-1.207 \cdot 10^{-8}$ | $-1.207 \cdot 10^{-8}$ | 0 | 0.08333 | 0.08333 | 0 |

## 2.170 clebQRe22

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to \mu^+ \mu^-$ | $-4.912 \cdot 10^{-6}$ | $-4.912 \cdot 10^{-6}$ | 0 | 0.1667 | 0.1667 | 0 |

## 2.171 cledjIm11

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to e^+ e^-$ | $2.519 \cdot 10^{-38}$ | $-2.568 \cdot 10^{-34}$ | $1.02 \cdot 10^{4}$ | $1.199 \cdot 10^{-10}$ | $1.199 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |

## 2.172 cledjIm22

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $u\bar{d} \to \mu^+ \nu_\mu$ | $1.227 \cdot 10^{-17}$ | $1.227 \cdot 10^{-17}$ | $-5.707 \cdot 10^{-7}$ | $5.996 \cdot 10^{-11}$ | $5.996 \cdot 10^{-11}$ | $-1.168 \cdot 10^{-6}$ |

## 2.173 cledjIm33

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{s} \to \tau^+ \nu_\tau$ | $8.162 \cdot 10^{-14}$ | $8.162 \cdot 10^{-14}$ | $3.063 \cdot 10^{-7}$ | $2.378 \cdot 10^{-8}$ | $2.378 \cdot 10^{-8}$ | $6.308 \cdot 10^{-7}$ |

## 2.174 cledjRe11

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to e^+ e^-$ | $-7.076 \cdot 10^{-16}$ | $-7.076 \cdot 10^{-16}$ | $-5.794 \cdot 10^{-7}$ | | $1.199 \cdot 10^{-10}$ | $1.199 \cdot 10^{-10}$ | $-1.168 \cdot 10^{-6}$ |

## 2.175 cledjRe22

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $u\bar{d} \to \mu^+ \nu_\mu$ | $-7.304 \cdot 10^{-14}$ | $-7.304 \cdot 10^{-14}$ | $-5.888 \cdot 10^{-7}$ | | $5.996 \cdot 10^{-11}$ | $5.996 \cdot 10^{-11}$ | $-1.184 \cdot 10^{-6}$ |

## 2.176 cledjRe33

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{s} \to \tau^+ \nu_\tau$ | $-4.861 \cdot 10^{-10}$ | $-4.861 \cdot 10^{-10}$ | $3.086 \cdot 10^{-7}$ | | $2.378 \cdot 10^{-8}$ | $2.378 \cdot 10^{-8}$ | $6.308 \cdot 10^{-7}$ |

## 2.177 cleju1Im22

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{c} \to \mu^+ \mu^-$ | $-9.166 \cdot 10^{-26}$ | $2.344 \cdot 10^{-28}$ | $1.003$ | | $8.868 \cdot 10^{-6}$ | $8.868 \cdot 10^{-6}$ | $2.706 \cdot 10^{-7}$ |
| $u\bar{d} \to \mu^+ \nu_\mu$ | $-2.63 \cdot 10^{-18}$ | $-2.63 \cdot 10^{-18}$ | $-7.224 \cdot 10^{-7}$ | | $1.283 \cdot 10^{-11}$ | $1.283 \cdot 10^{-11}$ | $-1.481 \cdot 10^{-6}$ |

## 2.178 cleju1Im33

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|---|
| $c\bar{s} \to \tau^+\nu_\tau$ | $-1.518 \cdot 10^{-11}$ | $-1.518 \cdot 10^{-11}$ | $1.318 \cdot 10^{-7}$ | | $4.434 \cdot 10^{-6}$ | $4.434 \cdot 10^{-6}$ | $2.932 \cdot 10^{-7}$ |

## 2.179 cleju1Re22

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $1.087 \cdot 10^{-8}$ | $1.087 \cdot 10^{-8}$ | $9.203 \cdot 10^{-8}$ | | $8.868 \cdot 10^{-6}$ | $8.868 \cdot 10^{-6}$ | $2.819 \cdot 10^{-7}$ |
| $u\bar{d} \to \mu^+\nu_\mu$ | $1.558 \cdot 10^{-14}$ | $1.558 \cdot 10^{-14}$ | $-7.06 \cdot 10^{-7}$ | | $1.283 \cdot 10^{-11}$ | $1.283 \cdot 10^{-11}$ | $-1.481 \cdot 10^{-6}$ |

## 2.180 cleju1Re33

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{s} \to \tau^+\nu_\tau$ | $9.08 \cdot 10^{-8}$ | $9.08 \cdot 10^{-8}$ | $1.432 \cdot 10^{-7}$ | | $4.434 \cdot 10^{-6}$ | $4.434 \cdot 10^{-6}$ | $2.706 \cdot 10^{-7}$ |

## 2.181 cleju3Im22

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $2.781 \cdot 10^{-24}$ | $4.242 \cdot 10^{-24}$ | $-0.5251$ | | $6.356 \cdot 10^{-5}$ | $6.356 \cdot 10^{-5}$ | $2.675 \cdot 10^{-7}$ |
| $u\bar{d} \to \mu^+\nu_\mu$ | $5.608 \cdot 10^{-18}$ | $5.608 \cdot 10^{-18}$ | $-7.311 \cdot 10^{-7}$ | | $6.451 \cdot 10^{-11}$ | $6.451 \cdot 10^{-11}$ | $-1.442 \cdot 10^{-6}$ |

## 2.182 cleju3Im33

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{s} \to \tau^+\nu_\tau$ | $4.942 \cdot 10^{-12}$ | $4.942 \cdot 10^{-12}$ | $1.416 \cdot 10^{-7}$ | | $7.348 \cdot 10^{-7}$ | $7.348 \cdot 10^{-7}$ | $2.722 \cdot 10^{-7}$ |

## 2.183   cleju3Re22

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-2.497 \cdot 10^{-8}$ | $-2.497 \cdot 10^{-8}$ | $1.201 \cdot 10^{-7}$ | $5.175 \cdot 10^{-5}$ | $5.175 \cdot 10^{-5}$ | $2.899 \cdot 10^{-7}$ |
| $u\bar{d} \to \mu^+\nu_\mu$ | $-1.573 \cdot 10^{-15}$ | $-1.573 \cdot 10^{-15}$ | $-6.991 \cdot 10^{-7}$ | $4.224 \cdot 10^{-13}$ | $4.224 \cdot 10^{-13}$ | $-1.444 \cdot 10^{-6}$ |

## 2.184   cleju3Re33

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{s} \to \tau^+\nu_\tau$ | $-2.93 \cdot 10^{-8}$ | $-2.93 \cdot 10^{-8}$ | $1.365 \cdot 10^{-7}$ | $7.348 \cdot 10^{-7}$ | $7.348 \cdot 10^{-7}$ | $2.722 \cdot 10^{-7}$ |

## 2.185   clj111

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $d\bar{d} \to e^+e^-$ | 0.005129 | 0.005129 | 0 | 0.02645 | 0.02645 | 0 |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $3.575 \cdot 10^{-5}$ | $3.575 \cdot 10^{-5}$ | 0 | 0.0001839 | 0.0001839 | 0 |

## 2.186   clj122

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-0.05026$ | $-0.05026$ | 0 | 0.2144 | 0.2144 | 0 |

## 2.187   clj133

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-$mod2/mod1 | mod1 | mod2 | $1-$mod2/mod1 |
| $s\bar{s}\to\nu_\tau\bar{\nu}_\tau$ | $-0.05992$ | $-0.05992$ | 0 | 0.2544 | 0.2544 | 0 |

## 2.188   clj311

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-$mod2/mod1 | mod1 | mod2 | $1-$mod2/mod1 |
| $d\bar{d}\to e^+e^-$ | 0.02022 | 0.02022 | 0 | 0.1043 | 0.1043 | 0 |
| $u\bar{u}\to\nu_e\bar{\nu}_e$ | 0.02213 | 0.02213 | 0 | 0.1138 | 0.1138 | 0 |

## 2.189   clj322

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-$mod2/mod1 | mod1 | mod2 | $1-$mod2/mod1 |
| $c\bar{c}\to\mu^+\mu^-$ | 0.03732 | 0.03732 | 0 | 0.1592 | 0.1592 | 0 |
| $u\bar{d}\to\mu^+\nu_\mu$ | 0.04479 | 0.04479 | 0 | 0.2088 | 0.2088 | 0 |

## 2.190   clj333

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-$mod2/mod1 | mod1 | mod2 | $1-$mod2/mod1 |
| $c\bar{s}\to\tau^+\nu_\tau$ | 0.01867 | 0.01867 | 0 | 0.087 | 0.087 | 0 |
| $s\bar{s}\to\nu_\tau\bar{\nu}_\tau$ | 0.02416 | 0.02416 | 0 | 0.1026 | 0.1026 | 0 |

## 2.191   cll1111

| interference | square |
|---|---|

|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| --- | --- | --- | --- | --- | --- | --- |
| $e^+\nu_e \to e^+\nu_e$ | 1.927 | 1.927 | 0 | 2.848 | 2.848 | 0 |
| $e^+e^- \to e^+e^-$ | −0.3455 | −0.3455 | 0 | 4.509 | 4.509 | 0 |

## 2.192 cll1122

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $\nu_e\bar{\nu}_e \to \nu_\mu\bar{\nu}_\mu$ | 0.2638 | 0.2638 | 0 | 0.9535 | 0.9535 | 0 |
| $e^+\nu_\mu \to e^+\nu_\mu$ | 0.03331 | 0.03331 | 0 | 0.1392 | 0.1392 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | 0.03469 | 0.03469 | 0 | 0.1261 | 0.1261 | 0 |

## 2.193 cll1133

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $e^+\tau^- \to e^+\tau^-$ | −0.02418 | −0.02418 | 0 | 0.06576 | 0.06576 | 0 |

## 2.194 cll1221

|  | interference | | | square | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $HH \to HH$ | 0.009196 | 0.009196 | 0 | 0.0001394 | 0.0001394 | 0 |
| $HH \to HHH$ | $1.778 \cdot 10^{-8}$ | $1.778 \cdot 10^{-8}$ | 0 | $4.043 \cdot 10^{-10}$ | $4.043 \cdot 10^{-10}$ | 0 |
| $HH \to H\tau^+\tau^-$ | $2.405 \cdot 10^{-11}$ | $2.405 \cdot 10^{-11}$ | 0 | $5.468 \cdot 10^{-13}$ | $5.468 \cdot 10^{-13}$ | 0 |
| $HH \to Hb\bar{b}$ | $3.585 \cdot 10^{-10}$ | $3.585 \cdot 10^{-10}$ | 0 | $8.15 \cdot 10^{-12}$ | $8.15 \cdot 10^{-12}$ | 0 |
| $HH \to Hs\bar{s}$ | $4.089 \cdot 10^{-11}$ | $4.089 \cdot 10^{-11}$ | 0 | $9.296 \cdot 10^{-13}$ | $9.296 \cdot 10^{-13}$ | 0 |
| $HH \to Ht\bar{t}$ | $1.38 \cdot 10^{-6}$ | $1.38 \cdot 10^{-6}$ | 0 | $3.137 \cdot 10^{-8}$ | $3.137 \cdot 10^{-8}$ | 0 |

| | | | | | |
|---|---|---|---|---|---|
| $HH \to Hu\bar{u}$ | $1.602 \cdot 10^{-16}$ | $1.602 \cdot 10^{-16}$ | 0 | $3.641 \cdot 10^{-18}$ | $3.641 \cdot 10^{-18}$ | 0 |
| $HH \to Hzz$ | $3.945 \cdot 10^{-6}$ | $3.945 \cdot 10^{-6}$ | 0 | $8.97 \cdot 10^{-8}$ | $8.97 \cdot 10^{-8}$ | 0 |
| $HH \to W^+W^-$ | 0.1444 | 0.1444 | 0 | 0.002189 | 0.002189 | 0 |
| $HH \to W^+W^-\gamma$ | $2.771 \cdot 10^{-6}$ | $2.771 \cdot 10^{-6}$ | 0 | $6.3 \cdot 10^{-8}$ | $6.3 \cdot 10^{-8}$ | 0 |
| $HH \to W^+\bar{t}b$ | $8.19 \cdot 10^{-7}$ | $8.19 \cdot 10^{-7}$ | 0 | $1.862 \cdot 10^{-8}$ | $1.862 \cdot 10^{-8}$ | 0 |
| $HH \to W^+e^-\bar{\nu}_e$ | $1.17 \cdot 10^{-8}$ | $1.17 \cdot 10^{-8}$ | 0 | $2.66 \cdot 10^{-10}$ | $2.66 \cdot 10^{-10}$ | 0 |
| $HH \to W^-u\bar{d}$ | $5.133 \cdot 10^{-7}$ | $5.133 \cdot 10^{-7}$ | 0 | $1.167 \cdot 10^{-8}$ | $1.167 \cdot 10^{-8}$ | 0 |
| $HH \to z\bar{b}b$ | $4.873 \cdot 10^{-8}$ | $4.873 \cdot 10^{-8}$ | 0 | $1.108 \cdot 10^{-9}$ | $1.108 \cdot 10^{-9}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | $2.146 \cdot 10^{-8}$ | $2.146 \cdot 10^{-8}$ | 0 | $4.879 \cdot 10^{-10}$ | $4.879 \cdot 10^{-10}$ | 0 |
| $HH \to zc\bar{c}$ | $8.5 \cdot 10^{-8}$ | $8.5 \cdot 10^{-8}$ | 0 | $1.932 \cdot 10^{-9}$ | $1.932 \cdot 10^{-9}$ | 0 |
| $HH \to zd\bar{d}$ | $3.34 \cdot 10^{-8}$ | $3.34 \cdot 10^{-8}$ | 0 | $7.593 \cdot 10^{-10}$ | $7.593 \cdot 10^{-10}$ | 0 |
| $HH \to ze^+e^-$ | $8.718 \cdot 10^{-9}$ | $8.718 \cdot 10^{-9}$ | 0 | $1.982 \cdot 10^{-10}$ | $1.982 \cdot 10^{-10}$ | 0 |
| $HH \to zt\bar{t}$ | $1.026 \cdot 10^{-6}$ | $1.026 \cdot 10^{-6}$ | 0 | $2.332 \cdot 10^{-8}$ | $2.332 \cdot 10^{-8}$ | 0 |
| $HH \to zz$ | 0.004707 | 0.004707 | 0 | $7.134 \cdot 10^{-5}$ | $7.134 \cdot 10^{-5}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $1.919 \cdot 10^{-7}$ | $1.919 \cdot 10^{-7}$ | 0 | $4.362 \cdot 10^{-9}$ | $4.362 \cdot 10^{-9}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | $2.315 \cdot 10^{-9}$ | $2.315 \cdot 10^{-9}$ | 0 | $5.263 \cdot 10^{-11}$ | $5.263 \cdot 10^{-11}$ | 0 |
| $HW^+ \to u\bar{d}$ | 0.0003434 | 0.0003434 | 0 | $5.204 \cdot 10^{-6}$ | $5.204 \cdot 10^{-6}$ | 0 |
| $HW^- \to \bar{t}b$ | 0.1555 | 0.1555 | 0 | 0.002357 | 0.002357 | 0 |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | $1.782 \cdot 10^{-8}$ | $1.782 \cdot 10^{-8}$ | 0 | $4.05 \cdot 10^{-10}$ | $4.05 \cdot 10^{-10}$ | 0 |
| $HW^- \to \mu^-\bar{\nu}_\mu$ | 0.0003335 | 0.0003335 | 0 | $5.054 \cdot 10^{-6}$ | $5.054 \cdot 10^{-6}$ | 0 |
| $H\gamma \to b\bar{b}$ | $5.667 \cdot 10^{-6}$ | $5.667 \cdot 10^{-6}$ | 0 | $8.589 \cdot 10^{-8}$ | $8.589 \cdot 10^{-8}$ | 0 |
| $H\gamma \to c\bar{c}$ | $4.099 \cdot 10^{-6}$ | $4.099 \cdot 10^{-6}$ | 0 | $6.212 \cdot 10^{-8}$ | $6.212 \cdot 10^{-8}$ | 0 |
| $H\gamma \to d\bar{d}$ | $5.919 \cdot 10^{-12}$ | $5.919 \cdot 10^{-12}$ | 0 | $8.971 \cdot 10^{-14}$ | $8.971 \cdot 10^{-14}$ | 0 |
| $H\gamma \to e^+e^-$ | $6.234 \cdot 10^{-13}$ | $6.234 \cdot 10^{-13}$ | 0 | $9.449 \cdot 10^{-15}$ | $9.449 \cdot 10^{-15}$ | 0 |
| $H\gamma \to t\bar{t}$ | 0.02696 | 0.02696 | 0 | 0.0004086 | 0.0004086 | 0 |
| $Hz \to \mu^+\mu^-$ | $1.714 \cdot 10^{-5}$ | $1.714 \cdot 10^{-5}$ | 0 | $2.598 \cdot 10^{-7}$ | $2.598 \cdot 10^{-7}$ | 0 |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | 0.000112 | 0.000112 | 0 | $1.697 \cdot 10^{-6}$ | $1.697 \cdot 10^{-6}$ | 0 |
| $Hz \to b\bar{b}$ | 0.0006782 | 0.0006782 | 0 | $1.028 \cdot 10^{-5}$ | $1.028 \cdot 10^{-5}$ | 0 |
| $Hz \to s\bar{s}$ | 0.0008907 | 0.0008907 | 0 | $1.35 \cdot 10^{-5}$ | $1.35 \cdot 10^{-5}$ | 0 |

| Process | | | | | | |
|---|---|---|---|---|---|---|
| $Hz \to t\bar{t}$ | 0.1799 | 0.1799 | 0 | 0.002726 | 0.002726 | 0 |
| $Hz \to u\bar{u}$ | 0.0006581 | 0.0006581 | 0 | $9.974 \cdot 10^{-6}$ | $9.974 \cdot 10^{-6}$ | 0 |
| $W^+W^- \to Hb\bar{b}$ | $4.668 \cdot 10^{-8}$ | $4.668 \cdot 10^{-8}$ | 0 | $1.061 \cdot 10^{-9}$ | $1.061 \cdot 10^{-9}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | $7.45 \cdot 10^{-8}$ | $7.45 \cdot 10^{-8}$ | 0 | $1.694 \cdot 10^{-9}$ | $1.694 \cdot 10^{-9}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | $7.225 \cdot 10^{-6}$ | $7.225 \cdot 10^{-6}$ | 0 | $1.643 \cdot 10^{-7}$ | $1.643 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $2.181 \cdot 10^{-7}$ | $2.181 \cdot 10^{-7}$ | 0 | $4.958 \cdot 10^{-9}$ | $4.958 \cdot 10^{-9}$ | 0 |
| $W^+W^- \to W^+W^-$ | 0.6226 | 0.6226 | 0 | 0.009436 | 0.009436 | 0 |
| $W^+W^- \to \gamma\gamma$ | 0.004412 | 0.004412 | 0 | $6.686 \cdot 10^{-5}$ | $6.686 \cdot 10^{-5}$ | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | $8.682 \cdot 10^{-8}$ | $8.682 \cdot 10^{-8}$ | 0 | $1.974 \cdot 10^{-9}$ | $1.974 \cdot 10^{-9}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | $1.51 \cdot 10^{-5}$ | $1.51 \cdot 10^{-5}$ | 0 | $2.289 \cdot 10^{-7}$ | $2.289 \cdot 10^{-7}$ | 0 |
| $\gamma W^+ \to zW^+$ | 0.0161 | 0.0161 | 0 | 0.000244 | 0.000244 | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | 0.0004394 | 0.0004394 | 0 | $6.659 \cdot 10^{-6}$ | $6.659 \cdot 10^{-6}$ | 0 |
| $\nu_\tau\bar{\nu}_\tau \to \nu_\tau\bar{\nu}_\tau$ | $3.047 \cdot 10^{-6}$ | $3.047 \cdot 10^{-6}$ | 0 | $4.618 \cdot 10^{-8}$ | $4.618 \cdot 10^{-8}$ | 0 |
| $\nu_e\bar{\nu}_e \to \nu_\mu\bar{\nu}_\mu$ | 0.2441 | 0.2441 | 0 | 0.886 | 0.886 | 0 |
| $b\bar{b} \to \gamma\gamma$ | $4.589 \cdot 10^{-6}$ | $4.589 \cdot 10^{-6}$ | 0 | $6.955 \cdot 10^{-8}$ | $6.955 \cdot 10^{-8}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | $3.859 \cdot 10^{-5}$ | $3.859 \cdot 10^{-5}$ | 0 | $5.849 \cdot 10^{-7}$ | $5.849 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to \nu_e\bar{\nu}_e$ | $6.259 \cdot 10^{-5}$ | $6.259 \cdot 10^{-5}$ | 0 | $9.487 \cdot 10^{-7}$ | $9.487 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to b\bar{b}$ | 0.9458 | 0.9458 | 0 | 0.02274 | 0.02274 | 0 |
| $b\bar{b} \to d\bar{d}$ | $1.336 \cdot 10^{-5}$ | $1.336 \cdot 10^{-5}$ | 0 | $2.025 \cdot 10^{-7}$ | $2.025 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | 0.003989 | 0.003989 | 0 | 0.0003063 | 0.0003063 | 0 |
| $b\bar{b} \to u\bar{u}$ | $6.493 \cdot 10^{-5}$ | $6.493 \cdot 10^{-5}$ | 0 | $9.841 \cdot 10^{-7}$ | $9.841 \cdot 10^{-7}$ | 0 |
| $b\bar{t} \to e^-\bar{\nu}_e$ | $4.198 \cdot 10^{-7}$ | $4.198 \cdot 10^{-7}$ | 0 | $6.362 \cdot 10^{-9}$ | $6.362 \cdot 10^{-9}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | $8.255 \cdot 10^{-5}$ | $8.255 \cdot 10^{-5}$ | 0 | $1.251 \cdot 10^{-6}$ | $1.251 \cdot 10^{-6}$ | 0 |
| $c\bar{s} \to \tau^+\nu_\tau$ | 0.0008698 | 0.0008698 | 0 | $1.318 \cdot 10^{-5}$ | $1.318 \cdot 10^{-5}$ | 0 |
| $d\bar{d} \to c\bar{c}$ | $8.694 \cdot 10^{-5}$ | $8.694 \cdot 10^{-5}$ | 0 | $1.318 \cdot 10^{-6}$ | $1.318 \cdot 10^{-6}$ | 0 |
| $d\bar{d} \to e^+e^-$ | $4.771 \cdot 10^{-5}$ | $4.771 \cdot 10^{-5}$ | 0 | $7.231 \cdot 10^{-7}$ | $7.231 \cdot 10^{-7}$ | 0 |
| $d\bar{d} \to s\bar{s}$ | 0.0002178 | 0.0002178 | 0 | $3.302 \cdot 10^{-6}$ | $3.302 \cdot 10^{-6}$ | 0 |
| $e^+\nu_\mu \to e^+\nu_\mu$ | 0.00249 | 0.00249 | 0 | $3.773 \cdot 10^{-5}$ | $3.773 \cdot 10^{-5}$ | 0 |
| $e^+\nu_e \to \mu^+\nu_\mu$ | 0.005833 | 0.005833 | 0 | 0.01368 | 0.01368 | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $e^+\nu_e \to e^+\nu_e$ | 0.0003433 | 0.0003433 | 0 | $5.204 \cdot 10^{-6}$ | $5.204 \cdot 10^{-6}$ | 0 |
| $e^+\tau^- \to e^+\tau^-$ | 0.2929 | 0.2929 | 0 | 0.00444 | 0.00444 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | 0.0007914 | 0.0007914 | 0 | 0.001371 | 0.001371 | 0 |
| $e^+e^- \to e^+e^-$ | 0.001069 | 0.001069 | 0 | $1.62 \cdot 10^{-5}$ | $1.62 \cdot 10^{-5}$ | 0 |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | 0.0001221 | 0.0001221 | 0 | $1.851 \cdot 10^{-6}$ | $1.851 \cdot 10^{-6}$ | 0 |
| $s\bar{s} \to s\bar{s}$ | $-0.01835$ | $-0.01835$ | 0 | 0.000112 | 0.000112 | 0 |
| $t\bar{t} \to \nu_\mu\bar{\nu}_\mu$ | $7.102 \cdot 10^{-5}$ | $7.102 \cdot 10^{-5}$ | 0 | $1.076 \cdot 10^{-6}$ | $1.076 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | 0.0001036 | 0.0001036 | 0 | $1.57 \cdot 10^{-6}$ | $1.57 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to c\bar{c}$ | 0.0001046 | 0.0001046 | 0 | $1.585 \cdot 10^{-6}$ | $1.585 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.0003183 | 0.0003183 | 0 | $4.823 \cdot 10^{-6}$ | $4.823 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.0003771 | 0.0003771 | 0 | $5.715 \cdot 10^{-6}$ | $5.715 \cdot 10^{-6}$ | 0 |
| $t\bar{t} \to t\bar{t}$ | $-0.2091$ | $-0.2091$ | 0 | 0.001453 | 0.001453 | 0 |
| $u\bar{d} \to \mu^+\nu_\mu$ | 0.0001759 | 0.0001759 | 0 | $2.666 \cdot 10^{-6}$ | $2.666 \cdot 10^{-6}$ | 0 |
| $u\bar{d} \to c\bar{s}$ | 0.0001913 | 0.0001913 | 0 | $2.9 \cdot 10^{-6}$ | $2.9 \cdot 10^{-6}$ | 0 |
| $u\bar{d} \to u\bar{d}$ | $-0.0003481$ | $-0.0003481$ | 0 | $5.056 \cdot 10^{-6}$ | $5.056 \cdot 10^{-6}$ | 0 |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | 0.0001193 | 0.0001193 | 0 | $1.808 \cdot 10^{-6}$ | $1.808 \cdot 10^{-6}$ | 0 |
| $u\bar{u} \to c\bar{c}$ | 0.0008844 | 0.0008844 | 0 | $1.34 \cdot 10^{-5}$ | $1.34 \cdot 10^{-5}$ | 0 |
| $u\bar{u} \to u\bar{u}$ | $-0.0007725$ | $-0.0007725$ | 0 | $2.139 \cdot 10^{-6}$ | $2.139 \cdot 10^{-6}$ | 0 |
| $zz \to W^+W^-$ | 3.427 | 3.427 | 0 | 0.05194 | 0.05194 | 0 |
| $zz \to zz$ | 0.004916 | 0.004916 | 0 | $7.451 \cdot 10^{-5}$ | $7.451 \cdot 10^{-5}$ | 0 |

## 2.195    cll1331

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $e^+\tau^- \to e^+\tau^-$ | $-0.06106$ | $-0.06106$ | 0 | 0.1399 | 0.1399 | 0 |

## 2.196    cll2233

157

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\mu^+\mu^- \to \tau^+\tau^-$ | 0.04268 | 0.04268 | 0 | 0.1552 | 0.1552 | 0 |

## 2.197 cll2332

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\mu^+\mu^- \to \tau^+\tau^-$ | 0.01689 | 0.01689 | 0 | 0.06142 | 0.06142 | 0 |

## 2.198 cll3333

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $\nu_\tau \bar{\nu}_\tau \to \nu_\tau \bar{\nu}_\tau$ | $-1.843$ | $-1.843$ | 0 | 9.127 | 9.127 | 0 |

## 2.199 clu11

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $u\bar{u} \to \nu_e \bar{\nu}_e$ | $-0.001656$ | $-0.001656$ | 0 | 0.02014 | 0.02014 | 0 |

## 2.200 clu22

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-0.01478$ | $-0.01478$ | 0 | 0.1821 | 0.1821 | 0 |

## 2.201 ctBIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to zt\bar{t}$ | $-9.539 \cdot 10^{-7}$ | $-9.539 \cdot 10^{-7}$ | 0 | $1.833 \cdot 10^{-5}$ | $1.833 \cdot 10^{-5}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $2.772 \cdot 10^{-9}$ | $2.772 \cdot 10^{-9}$ | 0 | $3.186 \cdot 10^{-8}$ | $3.186 \cdot 10^{-8}$ | 0 |
| $H\gamma \to t\bar{t}$ | $1.479 \cdot 10^{-16}$ | $1.479 \cdot 10^{-16}$ | 0 | 1.259 | 1.259 | 0 |
| $Hz \to t\bar{t}$ | $-0.0002479$ | $-0.0002479$ | 0 | 0.5783 | 0.5783 | 0 |
| $W^+W^- \to Ht\bar{t}$ | $2.888 \cdot 10^{-7}$ | $2.888 \cdot 10^{-7}$ | 0 | $5.866 \cdot 10^{-8}$ | $5.866 \cdot 10^{-8}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $1.281 \cdot 10^{-18}$ | $9.742 \cdot 10^{-19}$ | 0.2397 | 0.0008621 | 0.0008621 | 0 |
| $t\bar{t} \to \nu_\mu \bar{\nu}_\mu$ | $-4.63 \cdot 10^{-20}$ | $-4.63 \cdot 10^{-20}$ | 0 | 0.0001494 | 0.0001494 | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | $3.036 \cdot 10^{-19}$ | $3.036 \cdot 10^{-19}$ | 0 | 0.002085 | 0.002085 | 0 |
| $t\bar{t} \to c\bar{c}$ | $5.374 \cdot 10^{-20}$ | $5.374 \cdot 10^{-20}$ | 0 | 0.0002726 | 0.0002726 | 0 |
| $t\bar{t} \to d\bar{d}$ | $-1.602 \cdot 10^{-18}$ | $-1.602 \cdot 10^{-18}$ | $7.365 \cdot 10^{-6}$ | 0.0008292 | 0.0008292 | 0 |
| $t\bar{t} \to s\bar{s}$ | $-1.114 \cdot 10^{-19}$ | $-1.115 \cdot 10^{-19}$ | $-0.0004223$ | 0.0004633 | 0.0004633 | 0 |
| $t\bar{t} \to t\bar{t}$ | $2.422 \cdot 10^{-17}$ | $2.37 \cdot 10^{-17}$ | 0.02179 | 0.1502 | 0.1502 | 0 |

## 2.202 ctGIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $b\bar{b} \to t\bar{t}$ | $1.554 \cdot 10^{-17}$ | $1.554 \cdot 10^{-17}$ | 0 | 0.03392 | 0.03392 | 0 |
| $gg \to t\bar{t}$ | $2.026 \cdot 10^{-18}$ | $2.026 \cdot 10^{-18}$ | 0 | 0.08154 | 0.08154 | 0 |
| $t\bar{t} \to c\bar{c}$ | $-3.198 \cdot 10^{-23}$ | $-2.123 \cdot 10^{-23}$ | 0.3363 | 0.02279 | 0.02279 | 0 |
| $t\bar{t} \to d\bar{d}$ | $3.927 \cdot 10^{-29}$ | $3.909 \cdot 10^{-29}$ | 0.004464 | 0.03721 | 0.03721 | 0 |
| $t\bar{t} \to s\bar{s}$ | $2.866 \cdot 10^{-24}$ | $2.909 \cdot 10^{-24}$ | $-0.01503$ | 0.02941 | 0.02941 | 0 |
| $t\bar{t} \to t\bar{t}$ | $-2.812 \cdot 10^{-17}$ | $-2.901 \cdot 10^{-17}$ | $-0.03171$ | 1.709 | 1.709 | 0 |

## 2.203 ctGRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $b\bar{b} \to t\bar{t}$ | $-0.1196$ | $-0.1196$ | 0 | 0.03049 | 0.03049 | 0 |
| $gg \to t\bar{t}$ | $-0.1508$ | $-0.1508$ | 0 | 0.08894 | 0.08894 | 0 |
| $t\bar{t} \to c\bar{c}$ | $-0.1986$ | $-0.1986$ | 0 | 0.0304 | 0.0304 | 0 |
| $t\bar{t} \to d\bar{d}$ | $-0.1986$ | $-0.1986$ | 0 | 0.0414 | 0.0414 | 0 |
| $t\bar{t} \to s\bar{s}$ | $-0.1986$ | $-0.1986$ | 0 | 0.02887 | 0.02887 | 0 |
| $t\bar{t} \to t\bar{t}$ | $-0.1779$ | $-0.1779$ | 0 | 0.5408 | 0.5408 | 0 |

## 2.204 ctHIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to Ht\bar{t}$ | $2.54 \cdot 10^{-6}$ | $2.54 \cdot 10^{-6}$ | 0 | $4.589 \cdot 10^{-5}$ | $4.589 \cdot 10^{-5}$ | 0 |
| $HH \to W^+\bar{t}b$ | $-2.717 \cdot 10^{-6}$ | $-2.717 \cdot 10^{-6}$ | 0 | $6.309 \cdot 10^{-5}$ | $6.309 \cdot 10^{-5}$ | 0 |
| $HH \to zt\bar{t}$ | $1.142 \cdot 10^{-6}$ | $1.142 \cdot 10^{-6}$ | 0 | $1.252 \cdot 10^{-5}$ | $1.252 \cdot 10^{-5}$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | $-4.39 \cdot 10^{-8}$ | $-4.39 \cdot 10^{-8}$ | 0 | $7.055 \cdot 10^{-9}$ | $7.055 \cdot 10^{-9}$ | 0 |
| $HW^- \to \bar{t}b$ | $-0.0008722$ | $-0.0008722$ | 0 | 0.05854 | 0.05854 | 0 |
| $H\gamma \to t\bar{t}$ | $-1.748 \cdot 10^{-18}$ | $-1.748 \cdot 10^{-18}$ | 0 | 0.005527 | 0.005527 | 0 |
| $Hz \to t\bar{t}$ | 0.000397 | 0.000397 | 0 | 0.06503 | 0.06503 | 0 |
| $W^+W^- \to Hb\bar{b}$ | $-9.944 \cdot 10^{-8}$ | $-9.944 \cdot 10^{-8}$ | 0 | $1.323 \cdot 10^{-9}$ | $1.323 \cdot 10^{-9}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | $9.834 \cdot 10^{-7}$ | $9.834 \cdot 10^{-7}$ | 0 | $2.77 \cdot 10^{-7}$ | $2.77 \cdot 10^{-7}$ | 0 |
| $b\bar{b} \to t\bar{t}$ | $-4.369 \cdot 10^{-22}$ | $-4.369 \cdot 10^{-22}$ | 0 | $5.466 \cdot 10^{-7}$ | $5.466 \cdot 10^{-7}$ | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | $-6.963 \cdot 10^{-24}$ | $-6.963 \cdot 10^{-24}$ | 0 | $3.492 \cdot 10^{-8}$ | $3.492 \cdot 10^{-8}$ | 0 |
| $t\bar{t} \to c\bar{c}$ | $1.168 \cdot 10^{-22}$ | $1.305 \cdot 10^{-22}$ | $-0.1172$ | $5.351 \cdot 10^{-8}$ | $5.351 \cdot 10^{-8}$ | 0 |
| $t\bar{t} \to d\bar{d}$ | $5.077 \cdot 10^{-28}$ | $1.711 \cdot 10^{-28}$ | 0.663 | $7.236 \cdot 10^{-13}$ | $7.236 \cdot 10^{-13}$ | 0 |
| $t\bar{t} \to s\bar{s}$ | $-7.754 \cdot 10^{-25}$ | $-8.013 \cdot 10^{-25}$ | $-0.03334$ | $2.87 \cdot 10^{-10}$ | $2.87 \cdot 10^{-10}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $t\bar{t} \to t\bar{t}$ | $-1.622 \cdot 10^{-18}$ | $-1.87 \cdot 10^{-18}$ | $-0.1532$ | $0.005029$ | $0.005029$ | $0$ |

## 2.205 ctHRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| $HH \to Ht\bar{t}$ | $1.993 \cdot 10^{-5}$ | $1.993 \cdot 10^{-5}$ | $0$ | $1.79 \cdot 10^{-5}$ | $1.79 \cdot 10^{-5}$ | $0$ |
| $HH \to W^+\bar{t}b$ | $4.233 \cdot 10^{-7}$ | $4.233 \cdot 10^{-7}$ | $0$ | $1.374 \cdot 10^{-6}$ | $1.374 \cdot 10^{-6}$ | $0$ |
| $HH \to zt\bar{t}$ | $-3.625 \cdot 10^{-7}$ | $-3.625 \cdot 10^{-7}$ | $0$ | $1.394 \cdot 10^{-6}$ | $1.394 \cdot 10^{-6}$ | $0$ |
| $HW^+ \to \gamma t\bar{b}$ | $-2.046 \cdot 10^{-7}$ | $-2.046 \cdot 10^{-7}$ | $0$ | $3.119 \cdot 10^{-8}$ | $3.119 \cdot 10^{-8}$ | $0$ |
| $HW^- \to \bar{t}b$ | $0.05617$ | $0.05617$ | $0$ | $0.05056$ | $0.05056$ | $0$ |
| $H\gamma \to t\bar{t}$ | $-0.1669$ | $-0.1669$ | $0$ | $0.005099$ | $0.005099$ | $0$ |
| $Hz \to t\bar{t}$ | $-0.02447$ | $-0.02447$ | $0$ | $0.06527$ | $0.06527$ | $0$ |
| $W^+W^- \to Hb\bar{b}$ | $4.103 \cdot 10^{-7}$ | $4.103 \cdot 10^{-7}$ | $0$ | $3.39 \cdot 10^{-8}$ | $3.39 \cdot 10^{-8}$ | $0$ |
| $W^+W^- \to Ht\bar{t}$ | $-8.812 \cdot 10^{-8}$ | $-8.812 \cdot 10^{-8}$ | $0$ | $7.631 \cdot 10^{-7}$ | $7.631 \cdot 10^{-7}$ | $0$ |
| $b\bar{b} \to t\bar{t}$ | $-9.887 \cdot 10^{-6}$ | $-9.887 \cdot 10^{-6}$ | $0$ | $4.813 \cdot 10^{-7}$ | $4.813 \cdot 10^{-7}$ | $0$ |
| $t\bar{t} \to \tau^+\tau^-$ | $-1.018 \cdot 10^{-6}$ | $-1.018 \cdot 10^{-6}$ | $0$ | $3.099 \cdot 10^{-8}$ | $3.099 \cdot 10^{-8}$ | $0$ |
| $t\bar{t} \to c\bar{c}$ | $-1.56 \cdot 10^{-6}$ | $-1.56 \cdot 10^{-6}$ | $0$ | $4.749 \cdot 10^{-8}$ | $4.749 \cdot 10^{-8}$ | $0$ |
| $t\bar{t} \to d\bar{d}$ | $-2.106 \cdot 10^{-11}$ | $-2.106 \cdot 10^{-11}$ | $0$ | $6.421 \cdot 10^{-13}$ | $6.421 \cdot 10^{-13}$ | $0$ |
| $t\bar{t} \to s\bar{s}$ | $-8.303 \cdot 10^{-9}$ | $-8.303 \cdot 10^{-9}$ | $0$ | $2.547 \cdot 10^{-10}$ | $2.547 \cdot 10^{-10}$ | $0$ |
| $t\bar{t} \to t\bar{t}$ | $0.2523$ | $0.2523$ | $0$ | $0.009769$ | $0.009769$ | $0$ |

## 2.206 ctWIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ | mod1 | mod2 | $1 - \mathrm{mod2/mod1}$ |
| $HH \to W^+\bar{t}b$ | $3.734 \cdot 10^{-6}$ | $3.734 \cdot 10^{-6}$ | $0$ | $1.607 \cdot 10^{-5}$ | $1.607 \cdot 10^{-5}$ | $0$ |
| $HH \to zt\bar{t}$ | $3.177 \cdot 10^{-7}$ | $3.177 \cdot 10^{-7}$ | $0$ | $1.243 \cdot 10^{-5}$ | $1.243 \cdot 10^{-5}$ | $0$ |
| $HW^+ \to \gamma t\bar{b}$ | $-1.232 \cdot 10^{-7}$ | $-1.232 \cdot 10^{-7}$ | $0$ | $6.019 \cdot 10^{-6}$ | $6.019 \cdot 10^{-6}$ | $0$ |

| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $HW^- \to \bar{t}b$ | $0.0007365$ | $0.0007365$ | $0$ | $1.455$ | $1.455$ | $0$ |
| $H\gamma \to t\bar{t}$ | $1.355 \cdot 10^{-18}$ | $1.355 \cdot 10^{-18}$ | $0$ | $0.6374$ | $0.6374$ | $0$ |
| $Hz \to t\bar{t}$ | $6.743 \cdot 10^{-5}$ | $6.743 \cdot 10^{-5}$ | $0$ | $1.285$ | $1.285$ | $0$ |
| $W^+W^- \to Hb\bar{b}$ | $-1.492 \cdot 10^{-6}$ | $-1.492 \cdot 10^{-6}$ | $0$ | $2.5 \cdot 10^{-6}$ | $2.5 \cdot 10^{-6}$ | $0$ |
| $W^+W^- \to Ht\bar{t}$ | $-6.905 \cdot 10^{-7}$ | $-6.905 \cdot 10^{-7}$ | $0$ | $2.401 \cdot 10^{-5}$ | $2.401 \cdot 10^{-5}$ | $0$ |
| $\bar{b}t \to \bar{d}u$ | $7.012 \cdot 10^{-20}$ | $7.012 \cdot 10^{-20}$ | $0$ | $0.01119$ | $0.01119$ | $0$ |
| $b\bar{b} \to t\bar{t}$ | $-1.093 \cdot 10^{-17}$ | $-1.093 \cdot 10^{-17}$ | $0$ | $0.02017$ | $0.02017$ | $0$ |
| $b\bar{t} \to e^- \bar{\nu}_e$ | $-1.108 \cdot 10^{-18}$ | $-1.108 \cdot 10^{-18}$ | $0$ | $0.004268$ | $0.004268$ | $0$ |
| $t\bar{t} \to \nu_\mu \bar{\nu}_\mu$ | $7.208 \cdot 10^{-20}$ | $7.208 \cdot 10^{-20}$ | $0$ | $0.000705$ | $0.000705$ | $0$ |
| $t\bar{t} \to \tau^+ \tau^-$ | $1.338 \cdot 10^{-19}$ | $1.338 \cdot 10^{-19}$ | $0$ | $0.0005875$ | $0.0005875$ | $0$ |
| $t\bar{t} \to c\bar{c}$ | $-8.584 \cdot 10^{-18}$ | $-8.584 \cdot 10^{-18}$ | $-4.112 \cdot 10^{-6}$ | $0.003417$ | $0.003417$ | $0$ |
| $t\bar{t} \to d\bar{d}$ | $\textcolor{blue}{1.139 \cdot 10^{-20}}$ | $\textcolor{blue}{1.127 \cdot 10^{-20}}$ | $\textcolor{blue}{0.01033}$ | $0.005232$ | $0.005232$ | $0$ |
| $t\bar{t} \to s\bar{s}$ | $3.095 \cdot 10^{-19}$ | $3.095 \cdot 10^{-19}$ | $-7.602 \cdot 10^{-5}$ | $0.003175$ | $0.003175$ | $0$ |
| $t\bar{t} \to t\bar{t}$ | $\textcolor{red}{1.473 \cdot 10^{-16}}$ | $\textcolor{red}{1.481 \cdot 10^{-16}}$ | $\textcolor{red}{-0.004962}$ | $0.1316$ | $0.1316$ | $0$ |

## 2.207 ctWRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to W^+\bar{t}b$ | $6.282 \cdot 10^{-6}$ | $6.282 \cdot 10^{-6}$ | $0$ | $1.546 \cdot 10^{-5}$ | $1.546 \cdot 10^{-5}$ | $0$ |
| $HH \to zt\bar{t}$ | $7.78 \cdot 10^{-7}$ | $7.78 \cdot 10^{-7}$ | $0$ | $5.088 \cdot 10^{-5}$ | $5.088 \cdot 10^{-5}$ | $0$ |
| $HW^+ \to \gamma t\bar{b}$ | $1.267 \cdot 10^{-7}$ | $1.267 \cdot 10^{-7}$ | $0$ | $2.031 \cdot 10^{-6}$ | $2.031 \cdot 10^{-6}$ | $0$ |
| $HW^- \to \bar{t}b$ | $0.2851$ | $0.2851$ | $0$ | $2.1$ | $2.1$ | $0$ |
| $H\gamma \to t\bar{t}$ | $0.2654$ | $0.2654$ | $0$ | $0.4703$ | $0.4703$ | $0$ |
| $Hz \to t\bar{t}$ | $0.04633$ | $0.04633$ | $0$ | $2.598$ | $2.598$ | $0$ |
| $W^+W^- \to Hb\bar{b}$ | $8.329 \cdot 10^{-7}$ | $8.329 \cdot 10^{-7}$ | $0$ | $2.624 \cdot 10^{-6}$ | $2.624 \cdot 10^{-6}$ | $0$ |
| $W^+W^- \to Ht\bar{t}$ | $2.501 \cdot 10^{-5}$ | $2.501 \cdot 10^{-5}$ | $0$ | $7.639 \cdot 10^{-5}$ | $7.639 \cdot 10^{-5}$ | $0$ |
| $\bar{b}t \to \bar{d}u$ | $-0.004815$ | $-0.004815$ | $0$ | $0.01077$ | $0.01077$ | $0$ |
| $b\bar{b} \to t\bar{t}$ | $-0.02853$ | $-0.02853$ | $0$ | $0.0159$ | $0.0159$ | $0$ |

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{t} \to e^- \bar{\nu}_e$ | $-0.005053$ | $-0.005053$ | 0 | 0.002077 | 0.002077 | 0 |
| $t\bar{t} \to \nu_\mu \bar{\nu}_\mu$ | $-0.002068$ | $-0.002068$ | 0 | 0.001466 | 0.001466 | 0 |
| $t\bar{t} \to \tau^+ \tau^-$ | $-0.003103$ | $-0.003103$ | 0 | 0.000535 | 0.000535 | 0 |
| $t\bar{t} \to c\bar{c}$ | $-0.003434$ | $-0.003434$ | 0 | 0.006577 | 0.006577 | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.0007639 | 0.0007639 | 0 | 0.001807 | 0.001807 | 0 |
| $t\bar{t} \to s\bar{s}$ | $-0.006866$ | $-0.006866$ | 0 | 0.004638 | 0.004638 | 0 |
| $t\bar{t} \to t\bar{t}$ | 0.193 | 0.193 | 0 | 0.1799 | 0.1799 | 0 |

## 2.208   ctb1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $b\bar{b} \to t\bar{t}$ | $-0.01921$ | $-0.01921$ | 0 | 0.3457 | 0.3457 | 0 |

## 2.209   ctd1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $t\bar{t} \to d\bar{d}$ | $-0.04642$ | $-0.04642$ | 0 | 0.8453 | 0.8453 | 0 |
| $t\bar{t} \to s\bar{s}$ | $-0.01607$ | $-0.01607$ | 0 | 0.2878 | 0.2878 | 0 |

## 2.210   ctd8

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $t\bar{t} \to d\bar{d}$ | 0.1193 | 0.1193 | 0 | 0.03362 | 0.03362 | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.4092 | 0.4092 | 0 | 0.1315 | 0.1315 | 0 |

## 2.211 cte33

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $t\bar{t} \to \tau^+\tau^-$ | $-0.02008$ | $-0.02008$ | 0 | 0.1205 | 0.1205 | 0 |

## 2.212 ctj1

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $t\bar{t} \to c\bar{c}$ | 0.01153 | 0.01153 | 0 | 0.1845 | 0.1845 | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.009133 | 0.009133 | 0 | 0.5525 | 0.5525 | 0 |
| $t\bar{t} \to s\bar{s}$ | $-0.003706$ | $-0.003706$ | 0 | 0.08992 | 0.08992 | 0 |

## 2.213 ctj8

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $t\bar{t} \to c\bar{c}$ | 0.3643 | 0.3643 | 0 | 0.1163 | 0.1163 | 0 |
| $t\bar{t} \to d\bar{d}$ | 0.6656 | 0.6656 | 0 | 0.218 | 0.218 | 0 |
| $t\bar{t} \to s\bar{s}$ | 0.03897 | 0.03897 | 0 | 0.00652 | 0.00652 | 0 |

## 2.214 ctl22

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $t\bar{t} \to \nu_\mu\bar{\nu}_\mu$ | $-0.0008741$ | $-0.0008741$ | 0 | 0.03417 | 0.03417 | 0 |

## 2.215  ctl33

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $t\bar{t} \to \tau^+\tau^-$ | −0.02284 | −0.02284 | 0 | 0.2528 | 0.2528 | 0 |

## 2.216  ctt

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $t\bar{t} \to t\bar{t}$ | −0.3645 | −0.3645 | 0 | 4.526 | 4.526 | 0 |

## 2.217  ctu1

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $t\bar{t} \to c\bar{c}$ | 0.07387 | 0.07387 | 0 | 0.6711 | 0.6711 | 0 |

## 2.218  ctu8

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $t\bar{t} \to c\bar{c}$ | 0.257 | 0.257 | 0 | 0.08009 | 0.08009 | 0 |

## 2.219  cuBIm

|  | interference | | | square | | |
|---|---|---|---|---|---|---|
|  | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $HH \to zc\bar{c}$ | $4.922 \cdot 10^{-12}$ | $4.922 \cdot 10^{-12}$ | $1.422 \cdot 10^{-7}$ | $1.207 \cdot 10^{-11}$ | $1.207 \cdot 10^{-11}$ | $2.486 \cdot 10^{-7}$ |
| $HW^+ \to \gamma u\bar{d}$ | $7.79 \cdot 10^{-17}$ | $7.79 \cdot 10^{-17}$ | $-7.189 \cdot 10^{-7}$ | $7.598 \cdot 10^{-18}$ | $7.598 \cdot 10^{-18}$ | $-1.448 \cdot 10^{-6}$ |
| $H\gamma \to c\bar{c}$ | $1.507 \cdot 10^{-21}$ | $1.507 \cdot 10^{-21}$ | $6.02 \cdot 10^{-5}$ | $7.318 \cdot 10^{-5}$ | $7.318 \cdot 10^{-5}$ | $2.87 \cdot 10^{-7}$ |
| $Hz \to u\bar{u}$ | $-4.782 \cdot 10^{-15}$ | $-4.782 \cdot 10^{-15}$ | $-7.319 \cdot 10^{-7}$ | $6.809 \cdot 10^{-11}$ | $6.809 \cdot 10^{-11}$ | $-1.454 \cdot 10^{-6}$ |
| $W^+W^- \to Hc\bar{c}$ | $2.386 \cdot 10^{-11}$ | $2.386 \cdot 10^{-11}$ | $1.258 \cdot 10^{-7}$ | $4.839 \cdot 10^{-13}$ | $4.839 \cdot 10^{-13}$ | $2.893 \cdot 10^{-7}$ |
| $b\bar{b} \to u\bar{u}$ | $3.42 \cdot 10^{-30}$ | $7.771 \cdot 10^{-30}$ | $-1.272$ | $1.358 \cdot 10^{-13}$ | $1.358 \cdot 10^{-13}$ | $-1.399 \cdot 10^{-6}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-3.312 \cdot 10^{-24}$ | $-3.312 \cdot 10^{-24}$ | $1.356 \cdot 10^{-5}$ | $1.704 \cdot 10^{-8}$ | $1.704 \cdot 10^{-8}$ | $2.934 \cdot 10^{-7}$ |
| $d\bar{d} \to c\bar{c}$ | $2.63 \cdot 10^{-24}$ | $5.491 \cdot 10^{-24}$ | $-1.088$ | $5.157 \cdot 10^{-8}$ | $5.157 \cdot 10^{-8}$ | $2.715 \cdot 10^{-7}$ |
| $t\bar{t} \to c\bar{c}$ | $7.836 \cdot 10^{-23}$ | $7.861 \cdot 10^{-23}$ | $-0.003152$ | $1.581 \cdot 10^{-7}$ | $1.581 \cdot 10^{-7}$ | $3.163 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-3.576 \cdot 10^{-28}$ | $-3.572 \cdot 10^{-28}$ | $0.0009023$ | $2.114 \cdot 10^{-15}$ | $2.114 \cdot 10^{-15}$ | $-1.419 \cdot 10^{-6}$ |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $2.64 \cdot 10^{-29}$ | $2.64 \cdot 10^{-29}$ | $3.257 \cdot 10^{-6}$ | $4.181 \cdot 10^{-14}$ | $4.181 \cdot 10^{-14}$ | $-1.459 \cdot 10^{-6}$ |
| $u\bar{u} \to c\bar{c}$ | $3.216 \cdot 10^{-24}$ | $2.489 \cdot 10^{-24}$ | $0.226$ | $1.512 \cdot 10^{-7}$ | $1.512 \cdot 10^{-7}$ | $2.645 \cdot 10^{-7}$ |
| $u\bar{u} \to u\bar{u}$ | $-1.757 \cdot 10^{-27}$ | $-1.75 \cdot 10^{-27}$ | $0.003455$ | $1.294 \cdot 10^{-11}$ | $1.294 \cdot 10^{-11}$ | $-1.468 \cdot 10^{-6}$ |

## 2.220  cuBRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ | mod1 | mod2 | $1 - \text{mod2}/\text{mod1}$ |
| $HH \to zc\bar{c}$ | $1.472 \cdot 10^{-10}$ | $1.472 \cdot 10^{-10}$ | $1.359 \cdot 10^{-7}$ | $2.618 \cdot 10^{-11}$ | $2.618 \cdot 10^{-11}$ | $2.674 \cdot 10^{-7}$ |
| $HW^+ \to \gamma u\bar{d}$ | $2.215 \cdot 10^{-17}$ | $2.215 \cdot 10^{-17}$ | $-7.676 \cdot 10^{-7}$ | $1.689 \cdot 10^{-18}$ | $1.689 \cdot 10^{-18}$ | $-1.421 \cdot 10^{-6}$ |
| $H\gamma \to c\bar{c}$ | $7.623 \cdot 10^{-10}$ | $7.623 \cdot 10^{-10}$ | $1.443 \cdot 10^{-7}$ | $0.0001214$ | $0.0001214$ | $2.47 \cdot 10^{-7}$ |
| $Hz \to u\bar{u}$ | $2.591 \cdot 10^{-12}$ | $2.591 \cdot 10^{-12}$ | $-7.333 \cdot 10^{-7}$ | $6.341 \cdot 10^{-11}$ | $6.341 \cdot 10^{-11}$ | $-1.451 \cdot 10^{-6}$ |
| $W^+W^- \to Hc\bar{c}$ | $-6.127 \cdot 10^{-11}$ | $-6.127 \cdot 10^{-11}$ | $1.469 \cdot 10^{-7}$ | $9.68 \cdot 10^{-12}$ | $9.68 \cdot 10^{-12}$ | $2.789 \cdot 10^{-7}$ |
| $b\bar{b} \to u\bar{u}$ | $-8.681 \cdot 10^{-15}$ | $-8.681 \cdot 10^{-15}$ | $-7.257 \cdot 10^{-7}$ | $1.343 \cdot 10^{-13}$ | $1.343 \cdot 10^{-13}$ | $-1.415 \cdot 10^{-6}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-6.343 \cdot 10^{-8}$ | $-6.343 \cdot 10^{-8}$ | $1.419 \cdot 10^{-7}$ | $1.249 \cdot 10^{-8}$ | $1.249 \cdot 10^{-8}$ | $2.403 \cdot 10^{-7}$ |
| $d\bar{d} \to c\bar{c}$ | $-7.78 \cdot 10^{-9}$ | $-7.78 \cdot 10^{-9}$ | $1.414 \cdot 10^{-7}$ | $3.771 \cdot 10^{-8}$ | $3.771 \cdot 10^{-8}$ | $2.917 \cdot 10^{-7}$ |
| $t\bar{t} \to c\bar{c}$ | $3.111 \cdot 10^{-7}$ | $3.111 \cdot 10^{-7}$ | $1.286 \cdot 10^{-7}$ | $1.516 \cdot 10^{-7}$ | $1.516 \cdot 10^{-7}$ | $2.638 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-1.259 \cdot 10^{-12}$ | $-1.259 \cdot 10^{-12}$ | $-7.147 \cdot 10^{-7}$ | $6.347 \cdot 10^{-12}$ | $6.347 \cdot 10^{-12}$ | $-1.45 \cdot 10^{-6}$ |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $-7.337 \cdot 10^{-14}$ | $-7.337 \cdot 10^{-14}$ | $-7.224 \cdot 10^{-7}$ | $2.02 \cdot 10^{-14}$ | $2.02 \cdot 10^{-14}$ | $-1.485 \cdot 10^{-6}$ |

| | mod1 | mod2 | 1 − mod2/mod1 | | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|---|
| $u\bar{u} \to c\bar{c}$ | $-1.361 \cdot 10^{-7}$ | $-1.361 \cdot 10^{-7}$ | $1.469 \cdot 10^{-7}$ | | $1.838 \cdot 10^{-7}$ | $1.838 \cdot 10^{-7}$ | $2.72 \cdot 10^{-7}$ |
| $u\bar{u} \to u\bar{u}$ | $-1.487 \cdot 10^{-11}$ | $-1.487 \cdot 10^{-11}$ | $-7.397 \cdot 10^{-7}$ | | $8.966 \cdot 10^{-13}$ | $8.967 \cdot 10^{-13}$ | $-1.45 \cdot 10^{-6}$ |

## 2.221  cuGRe

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | | mod1 | mod2 | 1 − mod2/mod1 |
| $b\bar{b} \to u\bar{u}$ | $-2.992 \cdot 10^{-11}$ | $-2.992 \cdot 10^{-11}$ | $-7.353 \cdot 10^{-7}$ | | $5.147 \cdot 10^{-12}$ | $5.147 \cdot 10^{-12}$ | $-1.438 \cdot 10^{-6}$ |
| $d\bar{d} \to c\bar{c}$ | $-1.034 \cdot 10^{-5}$ | $-1.034 \cdot 10^{-5}$ | $9.669 \cdot 10^{-8}$ | | $1.446 \cdot 10^{-6}$ | $1.446 \cdot 10^{-6}$ | $2.767 \cdot 10^{-7}$ |
| $gg \to u\bar{u}$ | $-2.586 \cdot 10^{-11}$ | $-2.586 \cdot 10^{-11}$ | $-7.347 \cdot 10^{-7}$ | | $1.273 \cdot 10^{-11}$ | $1.273 \cdot 10^{-11}$ | $-1.493 \cdot 10^{-6}$ |
| $t\bar{t} \to c\bar{c}$ | $-1.159 \cdot 10^{-5}$ | $-1.159 \cdot 10^{-5}$ | $8.631 \cdot 10^{-8}$ | | $1.795 \cdot 10^{-6}$ | $1.795 \cdot 10^{-6}$ | $2.786 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-3.39 \cdot 10^{-11}$ | $-3.39 \cdot 10^{-11}$ | $-7.375 \cdot 10^{-7}$ | | $2.786 \cdot 10^{-10}$ | $2.786 \cdot 10^{-10}$ | $-1.436 \cdot 10^{-6}$ |
| $u\bar{u} \to c\bar{c}$ | $-1.034 \cdot 10^{-5}$ | $-1.034 \cdot 10^{-5}$ | $9.669 \cdot 10^{-8}$ | | $2.093 \cdot 10^{-6}$ | $2.093 \cdot 10^{-6}$ | $2.866 \cdot 10^{-7}$ |
| $u\bar{u} \to u\bar{u}$ | $-1.01 \cdot 10^{-10}$ | $-1.01 \cdot 10^{-10}$ | $-6.933 \cdot 10^{-7}$ | | $5.126 \cdot 10^{-12}$ | $5.126 \cdot 10^{-12}$ | $-1.444 \cdot 10^{-6}$ |

## 2.222  cuHIm

| | interference | | | | square | | |
|---|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | | mod1 | mod2 | 1 − mod2/mod1 |
| $HH \to Hu\bar{u}$ | $3.035 \cdot 10^{-25}$ | $3.035 \cdot 10^{-25}$ | $-4.283 \cdot 10^{-7}$ | | $3.395 \cdot 10^{-16}$ | $3.395 \cdot 10^{-16}$ | $-1.443 \cdot 10^{-6}$ |
| $HH \to W^-u\bar{d}$ | $-2.008 \cdot 10^{-16}$ | $-2.008 \cdot 10^{-16}$ | $-7.471 \cdot 10^{-7}$ | | $3.178 \cdot 10^{-16}$ | $3.178 \cdot 10^{-16}$ | $-1.447 \cdot 10^{-6}$ |
| $HH \to zc\bar{c}$ | $-9.877 \cdot 10^{-11}$ | $-9.877 \cdot 10^{-11}$ | $1.316 \cdot 10^{-7}$ | | $6.654 \cdot 10^{-11}$ | $6.654 \cdot 10^{-11}$ | $2.705 \cdot 10^{-7}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-5.61 \cdot 10^{-16}$ | $-5.61 \cdot 10^{-16}$ | $-7.131 \cdot 10^{-7}$ | | $4.382 \cdot 10^{-16}$ | $4.382 \cdot 10^{-16}$ | $-1.438 \cdot 10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $5.152 \cdot 10^{-14}$ | $5.152 \cdot 10^{-14}$ | $-7.182 \cdot 10^{-7}$ | | $1.035 \cdot 10^{-11}$ | $1.035 \cdot 10^{-11}$ | $-1.45 \cdot 10^{-6}$ |
| $H\gamma \to c\bar{c}$ | $\color{blue}{-2.014 \cdot 10^{-28}}$ | $\color{blue}{-1.509 \cdot 10^{-28}}$ | $\color{blue}{0.2507}$ | | $1.285 \cdot 10^{-7}$ | $1.285 \cdot 10^{-7}$ | $3.113 \cdot 10^{-7}$ |
| $Hz \to u\bar{u}$ | $3.766 \cdot 10^{-18}$ | $3.766 \cdot 10^{-18}$ | $-7.17 \cdot 10^{-7}$ | | $9.366 \cdot 10^{-12}$ | $9.366 \cdot 10^{-12}$ | $-1.452 \cdot 10^{-6}$ |
| $W^+W^- \to Hc\bar{c}$ | $4.825 \cdot 10^{-11}$ | $4.825 \cdot 10^{-11}$ | $1.451 \cdot 10^{-7}$ | | $1.667 \cdot 10^{-12}$ | $1.667 \cdot 10^{-12}$ | $2.999 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $-5.805 \cdot 10^{-17}$ | $-5.805 \cdot 10^{-17}$ | $-7.235 \cdot 10^{-7}$ | | $1.491 \cdot 10^{-27}$ | $1.491 \cdot 10^{-27}$ | $-1.475 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $\color{blue}{-8.871 \cdot 10^{-32}}$ | $\color{blue}{-9.008 \cdot 10^{-32}}$ | $\color{blue}{-0.01544}$ | | $8.413 \cdot 10^{-17}$ | $8.413 \cdot 10^{-17}$ | $-1.45 \cdot 10^{-6}$ |

| | interference mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | square mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
|---|---|---|---|---|---|---|
| $c\bar{c} \to \mu^+\mu^-$ | $-2.72\cdot10^{-31}$ | $1.655\cdot10^{-29}$ | $61.85$ | $6.195\cdot10^{-15}$ | $6.195\cdot10^{-15}$ | $2.744\cdot10^{-7}$ |
| $d\bar{d} \to c\bar{c}$ | $1.439\cdot10^{-31}$ | $1.444\cdot10^{-31}$ | $-0.00357$ | $3.63\cdot10^{-17}$ | $3.63\cdot10^{-17}$ | $2.755\cdot10^{-7}$ |
| $t\bar{t} \to c\bar{c}$ | $-3.529\cdot10^{-23}$ | $-8.418\cdot10^{-23}$ | $-1.386$ | $4.676\cdot10^{-8}$ | $4.676\cdot10^{-8}$ | $2.78\cdot10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-7.464\cdot10^{-36}$ | $-7.458\cdot10^{-36}$ | $0.0007601$ | $9.827\cdot10^{-23}$ | $9.827\cdot10^{-23}$ | $-1.445\cdot10^{-6}$ |
| $u\bar{u} \to c\bar{c}$ | $2.268\cdot10^{-33}$ | $5.617\cdot10^{-34}$ | $0.7524$ | $1.553\cdot10^{-17}$ | $1.553\cdot10^{-17}$ | $-5.794\cdot10^{-7}$ |
| $u\bar{u} \to u\bar{u}$ | $-9.842\cdot10^{-28}$ | $-1.013\cdot10^{-27}$ | $-0.02888$ | $1.161\cdot10^{-22}$ | $1.161\cdot10^{-22}$ | $-1.465\cdot10^{-6}$ |

## 2.223  cuHRe

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ | mod1 | mod2 | $1-\text{mod2}/\text{mod1}$ |
| $HH \to Hu\bar{u}$ | $-4.967\cdot10^{-16}$ | $-4.967\cdot10^{-16}$ | $-7.248\cdot10^{-7}$ | $6.625\cdot10^{-16}$ | $6.625\cdot10^{-16}$ | $-1.449\cdot10^{-6}$ |
| $HH \to W^-u\bar{d}$ | $-1.611\cdot10^{-15}$ | $-1.611\cdot10^{-15}$ | $-6.827\cdot10^{-7}$ | $6.914\cdot10^{-16}$ | $6.914\cdot10^{-16}$ | $-1.446\cdot10^{-6}$ |
| $HH \to zc\bar{c}$ | $-5.733\cdot10^{-11}$ | $-5.733\cdot10^{-11}$ | $1.395\cdot10^{-7}$ | $6.139\cdot10^{-10}$ | $6.139\cdot10^{-10}$ | $2.769\cdot10^{-7}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-7.081\cdot10^{-16}$ | $-7.081\cdot10^{-16}$ | $-7.202\cdot10^{-7}$ | $2.072\cdot10^{-17}$ | $2.072\cdot10^{-17}$ | $-1.448\cdot10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $-2.521\cdot10^{-12}$ | $-2.521\cdot10^{-12}$ | $-7.536\cdot10^{-7}$ | $9.484\cdot10^{-12}$ | $9.484\cdot10^{-12}$ | $-1.444\cdot10^{-6}$ |
| $H\gamma \to c\bar{c}$ | $-3.364\cdot10^{-6}$ | $-3.364\cdot10^{-6}$ | $1.486\cdot10^{-7}$ | $1.02\cdot10^{-7}$ | $1.02\cdot10^{-7}$ | $2.942\cdot10^{-7}$ |
| $Hz \to u\bar{u}$ | $-3.974\cdot10^{-12}$ | $-3.974\cdot10^{-12}$ | $-7.045\cdot10^{-7}$ | $9.536\cdot10^{-12}$ | $9.536\cdot10^{-12}$ | $-1.447\cdot10^{-6}$ |
| $W^+W^- \to Hc\bar{c}$ | $-1.183\cdot10^{-11}$ | $-1.183\cdot10^{-11}$ | $1.69\cdot10^{-7}$ | $2.14\cdot10^{-12}$ | $2.14\cdot10^{-12}$ | $2.804\cdot10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $1.179\cdot10^{-16}$ | $1.179\cdot10^{-16}$ | $-6.784\cdot10^{-7}$ | $3.74\cdot10^{-27}$ | $3.74\cdot10^{-27}$ | $-1.444\cdot10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $-2.787\cdot10^{-15}$ | $-2.787\cdot10^{-15}$ | $-7.534\cdot10^{-7}$ | $8.413\cdot10^{-17}$ | $8.413\cdot10^{-17}$ | $-1.438\cdot10^{-6}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $-2.029\cdot10^{-13}$ | $-2.029\cdot10^{-13}$ | $1.478\cdot10^{-7}$ | $6.195\cdot10^{-15}$ | $6.195\cdot10^{-15}$ | $2.744\cdot10^{-7}$ |
| $d\bar{d} \to c\bar{c}$ | $-1.191\cdot10^{-15}$ | $-1.191\cdot10^{-15}$ | $8.394\cdot10^{-8}$ | $3.63\cdot10^{-17}$ | $3.63\cdot10^{-17}$ | $2.755\cdot10^{-7}$ |
| $t\bar{t} \to c\bar{c}$ | $-1.538\cdot10^{-6}$ | $-1.538\cdot10^{-6}$ | $1.301\cdot10^{-7}$ | $4.676\cdot10^{-8}$ | $4.676\cdot10^{-8}$ | $2.78\cdot10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $-2.027\cdot10^{-21}$ | $-2.027\cdot10^{-21}$ | $-7.401\cdot10^{-7}$ | $9.746\cdot10^{-23}$ | $9.746\cdot10^{-23}$ | $-1.447\cdot10^{-6}$ |
| $u\bar{u} \to c\bar{c}$ | $-5.103\cdot10^{-16}$ | $-5.103\cdot10^{-16}$ | $-2.939\cdot10^{-7}$ | $3.107\cdot10^{-17}$ | $3.107\cdot10^{-17}$ | $-5.794\cdot10^{-7}$ |
| $u\bar{u} \to u\bar{u}$ | $2.927\cdot10^{-11}$ | $2.927\cdot10^{-11}$ | $-7.176\cdot10^{-7}$ | $2.009\cdot10^{-22}$ | $2.009\cdot10^{-22}$ | $-1.443\cdot10^{-6}$ |

## 2.224 cuWIm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\texttt{mod2}/\texttt{mod1}$ | mod1 | mod2 | $1-\texttt{mod2}/\texttt{mod1}$ |
| $HH \to W^- u\bar{d}$ | $2.02 \cdot 10^{-16}$ | $2.02 \cdot 10^{-16}$ | $-7.426 \cdot 10^{-7}$ | $3.909 \cdot 10^{-16}$ | $3.909 \cdot 10^{-16}$ | $-1.458 \cdot 10^{-6}$ |
| $HH \to zc\bar{c}$ | $1.666 \cdot 10^{-12}$ | $1.666 \cdot 10^{-12}$ | $1.2 \cdot 10^{-7}$ | $4.184 \cdot 10^{-12}$ | $4.184 \cdot 10^{-12}$ | $2.868 \cdot 10^{-7}$ |
| $HW^+ \to \gamma u\bar{d}$ | $-3.214 \cdot 10^{-17}$ | $-3.214 \cdot 10^{-17}$ | $-7.155 \cdot 10^{-7}$ | $1.133 \cdot 10^{-16}$ | $1.133 \cdot 10^{-16}$ | $-1.413 \cdot 10^{-6}$ |
| $HW^+ \to u\bar{d}$ | $-3.079 \cdot 10^{-14}$ | $-3.079 \cdot 10^{-14}$ | $-7.47 \cdot 10^{-7}$ | $4.9 \cdot 10^{-11}$ | $4.9 \cdot 10^{-11}$ | $-1.449 \cdot 10^{-6}$ |
| $H\gamma \to c\bar{c}$ | $3.744 \cdot 10^{-22}$ | $3.743 \cdot 10^{-22}$ | $8.86 \cdot 10^{-5}$ | $1.739 \cdot 10^{-5}$ | $1.739 \cdot 10^{-5}$ | $2.874 \cdot 10^{-7}$ |
| $Hz \to u\bar{u}$ | $-5.801 \cdot 10^{-15}$ | $-5.801 \cdot 10^{-15}$ | $-7.241 \cdot 10^{-7}$ | $2.432 \cdot 10^{-10}$ | $2.432 \cdot 10^{-10}$ | $-1.439 \cdot 10^{-6}$ |
| $W^+W^- \to Hc\bar{c}$ | $1.771 \cdot 10^{-10}$ | $1.771 \cdot 10^{-10}$ | $1.129 \cdot 10^{-7}$ | $1.077 \cdot 10^{-10}$ | $1.077 \cdot 10^{-10}$ | $2.784 \cdot 10^{-7}$ |
| $W^+W^- \to Hd\bar{d}$ | $8.9 \cdot 10^{-17}$ | $8.9 \cdot 10^{-17}$ | $-7.191 \cdot 10^{-7}$ | $1.378 \cdot 10^{-25}$ | $1.378 \cdot 10^{-25}$ | $-1.452 \cdot 10^{-6}$ |
| $\bar{b}t \to \bar{d}u$ | $-1.463 \cdot 10^{-26}$ | $-1.454 \cdot 10^{-26}$ | $0.006133$ | $1.094 \cdot 10^{-12}$ | $1.094 \cdot 10^{-12}$ | $-1.371 \cdot 10^{-6}$ |
| $b\bar{b} \to u\bar{u}$ | $4.576 \cdot 10^{-29}$ | $-8.017 \cdot 10^{-30}$ | $1.175$ | $9.985 \cdot 10^{-13}$ | $9.985 \cdot 10^{-13}$ | $-1.452 \cdot 10^{-6}$ |
| $c\bar{c} \to \mu^+\mu^-$ | $7.008 \cdot 10^{-24}$ | $7.008 \cdot 10^{-24}$ | $-7.684 \cdot 10^{-5}$ | $6.149 \cdot 10^{-8}$ | $6.149 \cdot 10^{-8}$ | $2.765 \cdot 10^{-7}$ |
| $c\bar{s} \to \tau^+\nu_\tau$ | $5.594 \cdot 10^{-25}$ | $-9.51 \cdot 10^{-25}$ | $2.7$ | $2.307 \cdot 10^{-7}$ | $2.307 \cdot 10^{-7}$ | $3.035 \cdot 10^{-7}$ |
| $d\bar{d} \to c\bar{c}$ | $8.857 \cdot 10^{-24}$ | $1.295 \cdot 10^{-23}$ | $-0.4618$ | $1.225 \cdot 10^{-7}$ | $1.225 \cdot 10^{-7}$ | $2.449 \cdot 10^{-7}$ |
| $t\bar{t} \to c\bar{c}$ | $-6.905 \cdot 10^{-22}$ | $-6.843 \cdot 10^{-22}$ | $0.008954$ | $3.477 \cdot 10^{-7}$ | $3.477 \cdot 10^{-7}$ | $2.876 \cdot 10^{-7}$ |
| $u\bar{d} \to \mu^+\nu_\mu$ | $6.254 \cdot 10^{-28}$ | $6.019 \cdot 10^{-28}$ | $0.03762$ | $6.277 \cdot 10^{-13}$ | $6.277 \cdot 10^{-13}$ | $-1.45 \cdot 10^{-6}$ |
| $u\bar{d} \to c\bar{s}$ | $-1.471 \cdot 10^{-24}$ | $-2.647 \cdot 10^{-23}$ | $-17$ | $1.53 \cdot 10^{-7}$ | $1.53 \cdot 10^{-7}$ | $3.268 \cdot 10^{-7}$ |
| $u\bar{d} \to u\bar{d}$ | $3.113 \cdot 10^{-25}$ | $3.118 \cdot 10^{-25}$ | $-0.001497$ | $6.345 \cdot 10^{-12}$ | $6.345 \cdot 10^{-12}$ | $-1.434 \cdot 10^{-6}$ |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | $1.227 \cdot 10^{-28}$ | $1.227 \cdot 10^{-28}$ | $-2.772 \cdot 10^{-6}$ | $1.336 \cdot 10^{-13}$ | $1.336 \cdot 10^{-13}$ | $-1.497 \cdot 10^{-6}$ |
| $u\bar{u} \to c\bar{c}$ | $-8.195 \cdot 10^{-25}$ | $6.661 \cdot 10^{-25}$ | $1.813$ | $1.716 \cdot 10^{-7}$ | $1.716 \cdot 10^{-7}$ | $2.914 \cdot 10^{-7}$ |
| $u\bar{u} \to u\bar{u}$ | $9.05 \cdot 10^{-26}$ | $9.108 \cdot 10^{-26}$ | $-0.00639$ | $1.648 \cdot 10^{-11}$ | $1.648 \cdot 10^{-11}$ | $-1.456 \cdot 10^{-6}$ |

## 2.225 cud1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1-\texttt{mod2}/\texttt{mod1}$ | mod1 | mod2 | $1-\texttt{mod2}/\texttt{mod1}$ |

| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
|---|---|---|---|---|---|---|
| $d\bar{d} \to c\bar{c}$ | −0.001756 | −0.001756 | 0 | 0.03225 | 0.03225 | 0 |
| $u\bar{d} \to u\bar{d}$ | 0.01543 | 0.01543 | 0 | 0.1681 | 0.1681 | 0 |

## 2.226  cud8

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $d\bar{d} \to c\bar{c}$ | 0.3665 | 0.3665 | 0 | 0.1237 | 0.1237 | 0 |
| $u\bar{d} \to u\bar{d}$ | −0.1674 | −0.1674 | 0 | 0.0343 | 0.0343 | 0 |

## 2.227  cutbd1Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $\bar{b}t \to \bar{d}u$ | $8.818 \cdot 10^{-27}$ | $8.818 \cdot 10^{-27}$ | $-1.338 \cdot 10^{-6}$ | $9.591 \cdot 10^{-21}$ | $9.591 \cdot 10^{-21}$ | $-2.669 \cdot 10^{-6}$ |

## 2.228  cutbd1Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $\bar{b}t \to \bar{d}u$ | $-5.227 \cdot 10^{-23}$ | $-5.227 \cdot 10^{-23}$ | $-1.339 \cdot 10^{-6}$ | $3.218 \cdot 10^{-20}$ | $3.218 \cdot 10^{-20}$ | $-2.673 \cdot 10^{-6}$ |

## 2.229  cutbd8Im

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | 1 − mod2/mod1 | mod1 | mod2 | 1 − mod2/mod1 |
| $\bar{b}t \to \bar{d}u$ | $1.176 \cdot 10^{-26}$ | $1.176 \cdot 10^{-26}$ | $-1.276 \cdot 10^{-6}$ | $2.239 \cdot 10^{-22}$ | $2.239 \cdot 10^{-22}$ | $-2.68 \cdot 10^{-6}$ |

## 2.230 cutbd8Re

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $\bar{b}t \to \bar{d}u$ | $-6.97 \cdot 10^{-23}$ | $-6.97 \cdot 10^{-23}$ | $-1.32 \cdot 10^{-6}$ | $2.911 \cdot 10^{-21}$ | $2.911 \cdot 10^{-21}$ | $-2.646 \cdot 10^{-6}$ |

## 2.231 cuu1

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $u\bar{u} \to c\bar{c}$ | 0.01737 | 0.01737 | 0 | 0.3191 | 0.3191 | 0 |
| $u\bar{u} \to u\bar{u}$ | $-3.347$ | $-3.347$ | 0 | 5.231 | 5.231 | 0 |

## 2.232 cuu8

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $u\bar{u} \to c\bar{c}$ | 0.2547 | 0.2547 | 0 | 0.1719 | 0.1719 | 0 |
| $u\bar{u} \to u\bar{u}$ | $-0.0004959$ | $-0.0004959$ | $-1.008 \cdot 10^{-7}$ | 0.007179 | 0.007179 | $-2.089 \cdot 10^{-7}$ |

## 2.233 sm

| | interference | | | square | | |
|---|---|---|---|---|---|---|
| | mod1 | mod2 | $1 - \text{mod2/mod1}$ | mod1 | mod2 | $1 - \text{mod2/mod1}$ |
| $HH \to HH$ | 0 | 0 | 0 | 0.1767 | 0.1767 | 0 |
| $HH \to HHH$ | 0 | 0 | 0 | $1.321 \cdot 10^{-8}$ | $1.321 \cdot 10^{-8}$ | 0 |
| $HH \to H\tau^+\tau^-$ | 0 | 0 | 0 | $1.661 \cdot 10^{-10}$ | $1.661 \cdot 10^{-10}$ | 0 |
| $HH \to Hb\bar{b}$ | 0 | 0 | 0 | $6.829 \cdot 10^{-9}$ | $6.829 \cdot 10^{-9}$ | 0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| $HH \to Hs\bar{s}$ | 0 | 0 | 0 | $3.778 \cdot 10^{-12}$ | $3.778 \cdot 10^{-12}$ | 0 |
| $HH \to Ht\bar{t}$ | 0 | 0 | 0 | $1.632 \cdot 10^{-5}$ | $1.632 \cdot 10^{-5}$ | 0 |
| $HH \to Hu\bar{u}$ | 0 | 0 | 0 | $3.264 \cdot 10^{-16}$ | $3.264 \cdot 10^{-16}$ | 0 |
| $HH \to Hzz$ | 0 | 0 | 0 | $6.828 \cdot 10^{-6}$ | $6.828 \cdot 10^{-6}$ | 0 |
| $HH \to W^+W^-$ | 0 | 0 | 0 | $0.3367$ | $0.3367$ | 0 |
| $HH \to W^+W^-\gamma$ | 0 | 0 | 0 | $3.364 \cdot 10^{-6}$ | $3.364 \cdot 10^{-6}$ | 0 |
| $HH \to W^+\bar{t}b$ | 0 | 0 | 0 | $2.681 \cdot 10^{-5}$ | $2.681 \cdot 10^{-5}$ | 0 |
| $HH \to W^+e^-\bar{\nu}_e$ | 0 | 0 | 0 | $2.377 \cdot 10^{-7}$ | $2.377 \cdot 10^{-7}$ | 0 |
| $HH \to W^-u\bar{d}$ | 0 | 0 | 0 | $1.164 \cdot 10^{-6}$ | $1.164 \cdot 10^{-6}$ | 0 |
| $HH \to z\bar{b}b$ | 0 | 0 | 0 | $3.492 \cdot 10^{-7}$ | $3.492 \cdot 10^{-7}$ | 0 |
| $HH \to z\nu_e\bar{\nu}_e$ | 0 | 0 | 0 | $1.6 \cdot 10^{-7}$ | $1.6 \cdot 10^{-7}$ | 0 |
| $HH \to zc\bar{c}$ | 0 | 0 | 0 | $2.494 \cdot 10^{-6}$ | $2.494 \cdot 10^{-6}$ | 0 |
| $HH \to zd\bar{d}$ | 0 | 0 | 0 | $4.467 \cdot 10^{-7}$ | $4.467 \cdot 10^{-7}$ | 0 |
| $HH \to ze^+e^-$ | 0 | 0 | 0 | $7.443 \cdot 10^{-8}$ | $7.443 \cdot 10^{-8}$ | 0 |
| $HH \to zt\bar{t}$ | 0 | 0 | 0 | $0.0001099$ | $0.0001099$ | 0 |
| $HH \to zz$ | 0 | 0 | 0 | $5.263$ | $5.263$ | 0 |
| $HW^+ \to \gamma t\bar{b}$ | 0 | 0 | 0 | $6.994 \cdot 10^{-6}$ | $6.994 \cdot 10^{-6}$ | 0 |
| $HW^+ \to \gamma u\bar{d}$ | 0 | 0 | 0 | $2.123 \cdot 10^{-7}$ | $2.123 \cdot 10^{-7}$ | 0 |
| $HW^+ \to u\bar{d}$ | 0 | 0 | 0 | $0.01857$ | $0.01857$ | 0 |
| $HW^- \to \bar{t}b$ | 0 | 0 | 0 | $0.4306$ | $0.4306$ | 0 |
| $HW^- \to \gamma e^-\bar{\nu}_e$ | 0 | 0 | 0 | $2.948 \cdot 10^{-10}$ | $2.948 \cdot 10^{-10}$ | 0 |
| $HW^- \to \mu^-\bar{\nu}_\mu$ | 0 | 0 | 0 | $0.007452$ | $0.007452$ | 0 |
| $H\gamma \to b\bar{b}$ | 0 | 0 | 0 | $8.495 \cdot 10^{-5}$ | $8.495 \cdot 10^{-5}$ | 0 |
| $H\gamma \to c\bar{c}$ | 0 | 0 | 0 | $5.205 \cdot 10^{-5}$ | $5.205 \cdot 10^{-5}$ | 0 |
| $H\gamma \to d\bar{d}$ | 0 | 0 | 0 | $1.69 \cdot 10^{-10}$ | $1.69 \cdot 10^{-10}$ | 0 |
| $H\gamma \to e^+e^-$ | 0 | 0 | 0 | $8.928 \cdot 10^{-12}$ | $8.928 \cdot 10^{-12}$ | 0 |
| $H\gamma \to t\bar{t}$ | 0 | 0 | 0 | $2.341$ | $2.341$ | 0 |
| $Hz \to \mu^+\mu^-$ | 0 | 0 | 0 | $0.001223$ | $0.001223$ | 0 |
| $Hz \to \nu_\tau\bar{\nu}_\tau$ | 0 | 0 | 0 | $0.005414$ | $0.005414$ | 0 |

| Process | | | | | | |
|---|---|---|---|---|---|---|
| $Hz \to b\bar{b}$ | 0 | 0 | 0 | 0.01079 | 0.01079 | 0 |
| $Hz \to s\bar{s}$ | 0 | 0 | 0 | 0.002803 | 0.002803 | 0 |
| $Hz \to t\bar{t}$ | 0 | 0 | 0 | 6.452 | 6.452 | 0 |
| $Hz \to u\bar{u}$ | 0 | 0 | 0 | 0.01151 | 0.01151 | 0 |
| $W^+W^- \to Hb\bar{b}$ | 0 | 0 | 0 | $1.453 \cdot 10^{-5}$ | $1.453 \cdot 10^{-5}$ | 0 |
| $W^+W^- \to Hc\bar{c}$ | 0 | 0 | 0 | $3.795 \cdot 10^{-7}$ | $3.795 \cdot 10^{-7}$ | 0 |
| $W^+W^- \to Hd\bar{d}$ | 0 | 0 | 0 | $2.204 \cdot 10^{-6}$ | $2.204 \cdot 10^{-6}$ | 0 |
| $W^+W^- \to Ht\bar{t}$ | 0 | 0 | 0 | $7.602 \cdot 10^{-6}$ | $7.602 \cdot 10^{-6}$ | 0 |
| $W^+W^- \to W^+W^-$ | 0 | 0 | 0 | 26.54 | 26.54 | 0 |
| $W^+W^- \to \gamma\gamma$ | 0 | 0 | 0 | 0.09284 | 0.09284 | 0 |
| $W^+W^- \to \gamma\gamma\gamma$ | 0 | 0 | 0 | $6.386 \cdot 10^{-6}$ | $6.386 \cdot 10^{-6}$ | 0 |
| $\bar{b}t \to \bar{d}u$ | 0 | 0 | 0 | 0.01576 | 0.01576 | 0 |
| $\gamma W^+ \to zW^+$ | 0 | 0 | 0 | 0.1973 | 0.1973 | 0 |
| $\mu^+\mu^- \to \tau^+\tau^-$ | 0 | 0 | 0 | 0.02493 | 0.02493 | 0 |
| $\nu_\tau \bar{\nu}_\tau \to \nu_\tau \bar{\nu}_\tau$ | 0 | 0 | 0 | 0.04074 | 0.04074 | 0 |
| $\nu_e \bar{\nu}_e \to \nu_\mu \bar{\nu}_\mu$ | 0 | 0 | 0 | 0.01193 | 0.01193 | 0 |
| $b\bar{b} \to \gamma\gamma$ | 0 | 0 | 0 | $7.482 \cdot 10^{-5}$ | $7.482 \cdot 10^{-5}$ | 0 |
| $b\bar{b} \to \mu^+\mu^-$ | 0 | 0 | 0 | 0.001016 | 0.001016 | 0 |
| $b\bar{b} \to \nu_e \bar{\nu}_e$ | 0 | 0 | 0 | 0.001775 | 0.001775 | 0 |
| $b\bar{b} \to b\bar{b}$ | 0 | 0 | 0 | 10.94 | 10.94 | 0 |
| $b\bar{b} \to d\bar{d}$ | 0 | 0 | 0 | 0.6204 | 0.6204 | 0 |
| $b\bar{b} \to t\bar{t}$ | 0 | 0 | 0 | 0.4167 | 0.4167 | 0 |
| $b\bar{b} \to u\bar{u}$ | 0 | 0 | 0 | 0.5634 | 0.5634 | 0 |
| $b\bar{t} \to e^- \bar{\nu}_e$ | 0 | 0 | 0 | $2.783 \cdot 10^{-7}$ | $2.783 \cdot 10^{-7}$ | 0 |
| $c\bar{c} \to \mu^+\mu^-$ | 0 | 0 | 0 | 0.00523 | 0.00523 | 0 |
| $c\bar{s} \to \tau^+\nu_\tau$ | 0 | 0 | 0 | 0.001074 | 0.001074 | 0 |
| $d\bar{d} \to c\bar{c}$ | 0 | 0 | 0 | 0.8997 | 0.8997 | 0 |
| $d\bar{d} \to e^+e^-$ | 0 | 0 | 0 | 0.002598 | 0.002598 | 0 |
| $d\bar{d} \to s\bar{s}$ | 0 | 0 | 0 | 0.7932 | 0.7932 | 0 |

| Process | | | | | | |
|---|---|---|---|---|---|---|
| $e^+\nu_\mu \to e^+\nu_\mu$ | 0 | 0 | 0 | 2.964 | 2.964 | 0 |
| $e^+\nu_e \to \mu^+\nu_\mu$ | 0 | 0 | 0 | 0.04079 | 0.04079 | 0 |
| $e^+\nu_e \to e^+\nu_e$ | 0 | 0 | 0 | 0.1062 | 0.1062 | 0 |
| $e^+\tau^- \to e^+\tau^-$ | 0 | 0 | 0 | 0.0167 | 0.0167 | 0 |
| $e^+e^- \to \mu^+\mu^-$ | 0 | 0 | 0 | 0.006772 | 0.006772 | 0 |
| $e^+e^- \to e^+e^-$ | 0 | 0 | 0 | 0.02126 | 0.02126 | 0 |
| $gg \to gg$ | 0 | 0 | 0 | 60.52 | 60.52 | 0 |
| $gg \to ggg$ | 0 | 0 | 0 | 0.01209 | 0.01209 | 0 |
| $gg \to t\bar{t}$ | 0 | 0 | 0 | 0.3876 | 0.3876 | 0 |
| $gg \to u\bar{u}$ | 0 | 0 | 0 | 0.9803 | 0.9803 | 0 |
| $s\bar{s} \to \nu_\tau\bar{\nu}_\tau$ | 0 | 0 | 0 | 0.0001925 | 0.0001925 | 0 |
| $s\bar{s} \to s\bar{s}$ | 0 | 0 | 0 | 6.847 | 6.847 | 0 |
| $t\bar{t} \to \nu_\mu\bar{\nu}_\mu$ | 0 | 0 | 0 | 0.001327 | 0.001327 | 0 |
| $t\bar{t} \to \tau^+\tau^-$ | 0 | 0 | 0 | 0.001185 | 0.001185 | 0 |
| $t\bar{t} \to c\bar{c}$ | 0 | 0 | 0 | 0.6012 | 0.6012 | 0 |
| $t\bar{t} \to d\bar{d}$ | 0 | 0 | 0 | 0.5803 | 0.5803 | 0 |
| $t\bar{t} \to s\bar{s}$ | 0 | 0 | 0 | 0.6182 | 0.6182 | 0 |
| $t\bar{t} \to t\bar{t}$ | 0 | 0 | 0 | 1.555 | 1.555 | 0 |
| $u\bar{d} \to \mu^+\nu_\mu$ | 0 | 0 | 0 | 0.01322 | 0.01322 | 0 |
| $u\bar{d} \to c\bar{s}$ | 0 | 0 | 0 | 0.02478 | 0.02478 | 0 |
| $u\bar{d} \to u\bar{d}$ | 0 | 0 | 0 | 10.41 | 10.41 | 0 |
| $u\bar{u} \to \nu_e\bar{\nu}_e$ | 0 | 0 | 0 | 0.0007744 | 0.0007744 | 0 |
| $u\bar{u} \to c\bar{c}$ | 0 | 0 | 0 | 0.4948 | 0.4948 | 0 |
| $u\bar{u} \to u\bar{u}$ | 0 | 0 | 0 | 3.817 | 3.817 | 0 |
| $zz \to W^+W^-$ | 0 | 0 | 0 | 37.84 | 37.84 | 0 |
| $zz \to zz$ | 0 | 0 | 0 | 0.0804 | 0.0804 | 0 |