

Topology Analysis ^{*}

(v1.6.0)

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November 30, 2018

^{*}This package is implemented with reference to a program called TOPO, which is developed by Prof. Shuxian Du from Zhengzhou University in China and has been widely used by people in BESIII collaboration. Several years ago, when I was a PhD student working on BESIII experiment, I learned the idea of topology analysis and a lot of programming techniques from the TOPO program. So, I really appreciate Prof. Du's original work very much. To meet my own needs and to practice developing analysis tools with C++, ROOT and LaTeX, I wrote the package from scratch. At that time, the package functioned well but was relatively simple. At the end of last year (2017), my co-supervisor, Prof. Chengping Shen reminded me that it could be a useful tool for Belle II experiment as well. So, I revised and extended it, making it more well-rounded and suitable for Belle II experiment. Here, I would like to thank Prof. Du for his original work, Prof. Shen for his suggestion and encouragement, and Wencheng Yan, Sen Jia, Yubo Li, Suxian Li, Longke Li, Guanda Gong, Junhao Yin, Xiaoping Qin, Xiqing Hao, HongPeng Wang, JiaWei Zhang and Yeqi Chen for their efforts in helping me test the program.

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List of Tables

1	Event trees and their respective initial-final states.	3
2	Event initial-final states.	23
3	Exclusive event branches matched with $B^0 \rightarrow J/\psi + \text{anything}$	30
4	Exclusive event branches matched with $B^0 \rightarrow e^+\nu_e + \text{anything}$	31

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
10	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow K^0 D^- D^{*+}, \bar{B}^0 \rightarrow D^{*+} D_s^{*-}, K^0 \rightarrow K_S, D^- \rightarrow \pi^- \pi^- K^+,$ $D^{*+} \rightarrow \pi^0 D^+, D^{*+} \rightarrow \pi^0 D^+, D_s^{*-} \rightarrow D_s^- \gamma, K_S \rightarrow \pi^+ \pi^-, D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^0, D^+ \rightarrow \pi^+ \eta',$ $D_s^- \rightarrow K^* K^{*-}, \bar{K}^0 \rightarrow K_L, \eta' \rightarrow \rho^0 \gamma, K^* \rightarrow \pi^- K^+, K^{*-} \rightarrow \pi^0 K^-, \rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \mu^+ \nu_\mu K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma)$	9	9	1	10
11	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+ \nu_\mu \bar{D}^{*-}, \bar{B}^0 \rightarrow \rho^0 K^0 K^{*-} D^+, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, \rho^0 \rightarrow \pi^+ \pi^-,$ $K^0 \rightarrow K_L, K^{*-} \rightarrow \pi^0 K^-, D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^0, \bar{D}^0 \rightarrow \rho^- K^{*+}, \bar{K}^0 \rightarrow K_L, \rho^- \rightarrow \pi^0 \pi^-,$ $K^{*+} \rightarrow \pi^0 K^+$ $(e^+e^- \rightarrow \mu^+ \mu^+ \nu_\mu \nu_\mu K_L K_L \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma)$	10	10	1	11
12	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^- K^+ J/\psi, \bar{B}^0 \rightarrow D^+ D_s^{*-}, \rho^- \rightarrow \pi^0 \pi^-, J/\psi \rightarrow e^+e^-,$ $D^+ \rightarrow \pi^0 \pi^+ K_S, D_s^{*-} \rightarrow D_s^- \gamma, K_S \rightarrow \pi^0 \pi^0, D_s^- \rightarrow \tau^- \bar{\nu}_\tau, \tau^- \rightarrow \mu^- \bar{\nu}_\mu \nu_\tau$ $(e^+e^- \rightarrow e^+ e^- \mu^- \bar{\nu}_\mu \nu_\tau \bar{\nu}_\tau \pi^+ \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	11	11	1	12
13	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^+ \pi^- K^0 D^0 \bar{D}^0, \bar{B}^0 \rightarrow \pi^0 \pi^+ \rho^- \rho^- D^+, K^0 \rightarrow K_L, D^0 \rightarrow K_S \eta',$ $\bar{D}^0 \rightarrow \rho^- K^{*+}, \rho^- \rightarrow \pi^0 \pi^-, \rho^- \rightarrow \pi^0 \pi^-, D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^0, K_L \rightarrow \pi^0 \pi^0 \pi^0, K_S \rightarrow \pi^+ \pi^-,$ $\eta' \rightarrow \pi^+ \pi^- \eta, \rho^- \rightarrow \pi^0 \pi^-, K^{*+} \rightarrow \pi^0 K^+, \bar{K}^0 \rightarrow K_L, \eta \rightarrow \pi^0 \pi^+ \pi^-$ $(e^+e^- \rightarrow \mu^+ \nu_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	12	12	1	13
14	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^+ \eta \bar{D}^{*-}, \bar{B}^0 \rightarrow K^0 K^{*-} D^{*+}, \eta \rightarrow \pi^0 \pi^0 \pi^0, \bar{D}^{*-} \rightarrow \pi^0 D^-,$ $K^0 \rightarrow K_S, K^{*-} \rightarrow \pi^0 K^-, D^{*+} \rightarrow \pi^+ D^0, D^- \rightarrow \mu^- \bar{\nu}_\mu K^0, K_S \rightarrow \pi^+ \pi^-, D^0 \rightarrow \pi^0 \rho^0,$ $K^0 \rightarrow K_L, \rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	13	13	1	14
15	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^+ D^-, \bar{B}^0 \rightarrow \pi^- K^+ K^- D^{*+}, \rho^+ \rightarrow \pi^0 \pi^+, D^- \rightarrow K_S a_1^-,$ $D^{*+} \rightarrow \pi^+ D^0, K_S \rightarrow \pi^0 \pi^0, a_1^- \rightarrow \pi^0 \rho^-, D^0 \rightarrow \pi^0 \pi^+ K^-, \rho^- \rightarrow \pi^0 \pi^-$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	14	14	1	15
16	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0 \pi^0 \pi^+ \eta \bar{D}^{*-}, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+}, \eta \rightarrow \pi^0 \pi^0 \pi^0, \bar{D}^{*-} \rightarrow \pi^0 D^-,$ $D^{*+} \rightarrow \pi^0 D^+, D^- \rightarrow \pi^+ \pi^- \pi^- \pi^- K^+, D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^*, \bar{K}^* \rightarrow \pi^+ K^-$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	15	15	1	16
17	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow e^+ \nu_e \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^0 \pi^+ K^{*-} D^0 \bar{D}^{*0}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, K^{*-} \rightarrow \pi^- \bar{K}^0,$ $D^0 \rightarrow K_L \pi^+ \pi^-, \bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, \bar{D}^0 \rightarrow \mu^- \bar{\nu}_\mu K^+, \bar{K}^0 \rightarrow K_S, \bar{D}^0 \rightarrow \pi^+ \pi^- K_S K_S, K_S \rightarrow \pi^+ \pi^-,$ $K_S \rightarrow \pi^0 \pi^0, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^+ \nu_e \mu^- \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	16	16	1	17
18	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow K^* D^- D^{*+}, \bar{B}^0 \rightarrow \pi^0 \eta \bar{K}^0 K^- D_s^+, K^* \rightarrow \pi^0 K^0, D^- \rightarrow \pi^- \pi^- K^+,$ $D^{*+} \rightarrow \pi^+ D^0, \eta \rightarrow \gamma \gamma, \bar{K}^0 \rightarrow K_L, D_s^+ \rightarrow \mu^+ \nu_\mu \phi, K^0 \rightarrow K_S, D^0 \rightarrow \pi^0 \pi^+ K^{*-},$ $\phi \rightarrow K^+ K^-, K_S \rightarrow \pi^0 \pi^0, K^{*-} \rightarrow \pi^- \bar{K}^0, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow \mu^+ \nu_\mu K_L K_L \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	17	17	1	18
19	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \bar{D}^{*-} D_s^{*+}, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D_s^{*+} \rightarrow D_s^+ \gamma,$ $D^{*+} \rightarrow \pi^+ D^0, \bar{D}^0 \rightarrow \pi^0 \pi^+ \pi^- K_S, D_s^+ \rightarrow \rho^+ \eta, D^0 \rightarrow \pi^+ \eta K^-, K_S \rightarrow \pi^+ \pi^-, \rho^+ \rightarrow \pi^0 \pi^+,$ $\eta \rightarrow \pi^0 \pi^0 \pi^0, \eta \rightarrow \pi^0 \pi^0 \pi^0$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	18	18	1	19

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
50	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^+\pi^-\rho^+\eta D^-, \bar{B}^0 \rightarrow \mu^-\bar{\nu}_\mu D^{*+}, \rho^+ \rightarrow \pi^0\pi^+, \eta \rightarrow \pi^0\pi^0\pi^0,$ $D^- \rightarrow K_S K^-, D^{*+} \rightarrow \pi^+ D^0, \pi^0 \rightarrow e^+e^-, K_S \rightarrow \pi^+\pi^-, D^0 \rightarrow \pi^0\pi^+\pi^-\bar{K}^*, \bar{K}^* \rightarrow \pi^0\bar{K}^0,$ $\bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow e^+e^-\mu^-\bar{\nu}_\mu K_L \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^- K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	49	49	1	50
51	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 B^0, B^0 \rightarrow e^+\nu_e \eta D^-, B^0 \rightarrow \pi^0\pi^+\pi^+\pi^-\bar{D}^{*-}, \eta \rightarrow \pi^+\pi^-, D^- \rightarrow K_L a_1^-,$ $\bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, a_1^- \rightarrow \pi^- f_0(600), \bar{D}^0 \rightarrow \mu^-\bar{\nu}_\mu K^+$ $(e^+e^- \rightarrow e^+\nu_e \mu^-\bar{\nu}_\mu K_L \pi^+\pi^+\pi^+\pi^-\pi^-\pi^- K^+ f_0(600)\gamma\gamma)$	50	50	1	51
52	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0\pi^+\pi^+\rho^- D^-, \bar{B}^0 \rightarrow e^-\bar{\nu}_e D^+, \rho^- \rightarrow \pi^0\pi^-, D^- \rightarrow \pi^0\pi^+\pi^-\pi^- K^0,$ $D^+ \rightarrow \pi^+\pi^+ K^-, K^0 \rightarrow K_L$ $(e^+e^- \rightarrow e^-\bar{\nu}_e K_L \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^- K^-\gamma\gamma\gamma\gamma\gamma\gamma)$	51	51	1	52
53	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^0\pi^+\pi^+\pi^-\omega D^-, \bar{B}^0 \rightarrow \rho^+\rho^- D^{*0}, \rho^0 \rightarrow \pi^+\pi^-, \omega \rightarrow \pi^0\pi^+\pi^-,$ $D^- \rightarrow \pi^- K_1^0, \rho^+ \rightarrow \pi^0\pi^+, \rho^- \rightarrow \pi^0\pi^-, D^{*0} \rightarrow D^0\gamma, K_1^0 \rightarrow \pi^- K^{*+}, D^0 \rightarrow e^+\nu_e K^{*-},$ $K^{*+} \rightarrow \pi^0 K^+, K^{*-} \rightarrow \pi^- \bar{K}^0, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow e^+\nu_e K_L \pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^- K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	52	52	1	53
54	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^-\bar{D}^0 D_s^+, \bar{B}^0 \rightarrow D^{*+} D_s^{*-}, \bar{D}^0 \rightarrow \rho^- K^{*+}, D_s^+ \rightarrow \rho^+\eta,$ $D^{*+} \rightarrow \pi^+ D^0, D_s^{*-} \rightarrow D_s^- \gamma, \rho^- \rightarrow \pi^0\pi^-, K^{*+} \rightarrow \pi^0 K^+, \rho^+ \rightarrow \pi^0\pi^+, \eta \rightarrow \gamma\gamma,$ $D^0 \rightarrow K_S K^+ K^-, D_s^- \rightarrow \pi^-\eta', K_S \rightarrow \pi^0\pi^0, \eta' \rightarrow \pi^+\pi^-\eta, \eta \rightarrow \pi^0\pi^+\pi^-$ $(e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^- K^+ K^+ K^- \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	53	53	1	54
55	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \bar{D}^{*-} a_1^+, \bar{B}^0 \rightarrow \pi^0\rho^0\rho^0 D^+, \bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, a_1^+ \rightarrow \pi^+ K^0 \bar{K}^0,$ $\rho^0 \rightarrow \pi^+\pi^-, \rho^0 \rightarrow \pi^+\pi^-, \rho^- \rightarrow \pi^0\pi^-, D^+ \rightarrow \pi^0\pi^+ K_S, \bar{D}^0 \rightarrow K^+ a_1^-, K^0 \rightarrow K_S,$ $\bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^0\pi^0, a_1^- \rightarrow \rho^0\pi^-, K_S \rightarrow \pi^+\pi^-, K_S \rightarrow \pi^0\pi^0, \rho^0 \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^- K^+ \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	54	54	1	55
56	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0\Delta^+\bar{\Xi}_c^{*-}, \bar{B}^0 \rightarrow \pi^0\pi^+ D^0 D_s^{*-}, \Delta^+ \rightarrow \pi^+ n, \bar{\Xi}_c^{*-} \rightarrow \bar{\Xi}_c^- \gamma,$ $D^0 \rightarrow \mu^+\nu_\mu K^{*-}, D_s^{*-} \rightarrow D_s^- \gamma, \bar{\Xi}_c^- \rightarrow \pi^0\pi^-\bar{\Xi}^0, K^{*-} \rightarrow \pi^- \bar{K}^0, D_s^- \rightarrow K^0 K^{*-}, \bar{\Xi}^0 \rightarrow \pi^0 \bar{\Lambda},$ $\bar{K}^0 \rightarrow K_L, K^0 \rightarrow K_L, K^{*-} \rightarrow \pi^0 K^-, \bar{\Lambda} \rightarrow \pi^+ \bar{p}, K_L \rightarrow \mu^-\nu_\mu \pi^+$ $(e^+e^- \rightarrow \mu^+\mu^-\nu_\mu \nu_\mu K_L \pi^+\pi^+\pi^+\pi^+\pi^-\pi^- K^- n \bar{p} \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	55	55	1	56
57	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow e^+\nu_e \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^0\bar{\Delta}^+\Sigma_c^+, \bar{D}^{*-} \rightarrow \pi^0 D^-, \bar{\Delta}^+ \rightarrow \pi^-\bar{n},$ $\Sigma_c^+ \rightarrow \pi^0\Lambda_c^+, D^- \rightarrow \pi^0\pi^-\phi, \Lambda_c^+ \rightarrow \pi^+\eta\Lambda, \phi \rightarrow K_L K_S, \eta \rightarrow \pi^0\pi^+\pi^-, \Lambda \rightarrow \pi^-\bar{p},$ $K_S \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow e^+\nu_e K_L \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^- \bar{n} p \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	56	56	1	57
58	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^0\pi^+\pi^-\bar{D}^{*0}, \bar{B}^0 \rightarrow \mu^-\bar{\nu}_\mu D^{*+}, \rho^0 \rightarrow \pi^+\pi^-, \bar{D}^{*0} \rightarrow \bar{D}^0\gamma,$ $D^{*+} \rightarrow D^+\gamma, \bar{D}^0 \rightarrow \rho^- K^{*+}, D^+ \rightarrow \mu^+\nu_\mu \bar{K}^0, \rho^- \rightarrow \pi^0\pi^-, K^{*+} \rightarrow \pi^+ K^0, \bar{K}^0 \rightarrow K_S,$ $K^0 \rightarrow K_S, K_S \rightarrow \pi^0\pi^0, K_S \rightarrow \pi^0\pi^0$ $(e^+e^- \rightarrow \mu^+\mu^-\nu_\mu \bar{\nu}_\mu \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^- \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	57	57	1	58

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
69	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0 \bar{B}^0, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^+, \bar{B}^0 \rightarrow \rho^0 \rho^- \eta D^{*+}, D^+ \rightarrow \pi^0 \pi^+ K_S, \rho^0 \rightarrow \pi^+ \pi^-,$ $\rho^- \rightarrow \pi^0 \pi^-, \eta \rightarrow \gamma\gamma, D^{*+} \rightarrow \pi^+ D^0, K_S \rightarrow \pi^+ \pi^-, D^0 \rightarrow \omega \bar{K}^*, \omega \rightarrow \pi^+ \pi^-,$ $\bar{K}^* \rightarrow \pi^+ K^-$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- \gamma\gamma\gamma\gamma\gamma)$	68	68	1	69
70	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^+ D^-, \bar{B}^0 \rightarrow \rho^- D^{*+}, \rho^+ \rightarrow \pi^0 \pi^+, D^- \rightarrow \pi^0 \pi^- \phi,$ $\rho^- \rightarrow \pi^0 \pi^-, D^{*+} \rightarrow \pi^+ D^0, \phi \rightarrow K^+ K^-, D^0 \rightarrow e^+ \nu_e \pi^-$ $(e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma\gamma\gamma\gamma\gamma)$	69	69	1	70
71	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^- K^+ D^0 \bar{D}^0, \bar{B}^0 \rightarrow K^{*-} D^+, D^0 \rightarrow \rho^+ K^{*-}, \bar{D}^0 \rightarrow \rho^0 \rho^0,$ $K^{*-} \rightarrow \pi^- \bar{K}^0, D^+ \rightarrow e^+ \nu_e \bar{K}^*, \rho^+ \rightarrow \pi^0 \pi^+, K^{*-} \rightarrow \pi^- \bar{K}^0, \rho^0 \rightarrow \pi^+ \pi^-, \rho^0 \rightarrow \pi^+ \pi^-,$ $\bar{K}^0 \rightarrow K_L, \bar{K}^* \rightarrow \pi^+ K^-, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow e^+ \nu_e K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma\gamma)$	70	70	1	71
72	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \pi^0 \pi^+ \rho^+ \rho^- D^-, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^+, \rho^+ \rightarrow \pi^0 \pi^+, \rho^- \rightarrow \pi^0 \pi^-,$ $D^- \rightarrow e^- \bar{\nu}_e \pi^- K^+, D^+ \rightarrow \pi^0 \pi^+ \pi^+ K^-$ $(e^+e^- \rightarrow e^- e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^+ K^- \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	71	71	1	72
73	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow K^* n \bar{\Sigma}_c^{*0}, \bar{B}^0 \rightarrow \pi^- D^+, K^* \rightarrow \pi^- K^+, \bar{\Sigma}_c^{*0} \rightarrow \pi^+ \bar{\Lambda}_c^-,$ $D^+ \rightarrow \pi^0 \pi^+ \bar{K}^*, \bar{\Lambda}_c^- \rightarrow \pi^0 \pi^- K^+ \bar{p}, \bar{K}^* \rightarrow \pi^+ K^-$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^+ K^- n \bar{p} \gamma\gamma\gamma)$	72	72	1	73
74	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow e^+ \nu_e \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^- \pi^- D^{*+} \bar{n} \Delta^+, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D^{*+} \rightarrow \pi^+ D^0,$ $\Delta^+ \rightarrow \pi^0 p, \bar{D}^0 \rightarrow e^- \bar{\nu}_e \pi^+ K^0, D^0 \rightarrow K^- a_1^+, K^0 \rightarrow K_L, a_1^+ \rightarrow \pi^+ f_0(600)$ $(e^+e^- \rightarrow e^+ e^- \nu_e \bar{\nu}_e K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- \bar{n} p f_0(600) \gamma\gamma)$	73	73	1	74
75	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow K^{*+} \bar{D}^{*-} D^0, \bar{B}^0 \rightarrow D^{*+} D_{s0}^{*-}, K^{*+} \rightarrow \pi^+ K^0, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0,$ $D^0 \rightarrow \pi^0 \pi^+ K^-, D^{*+} \rightarrow \pi^0 D^+, D_{s0}^{*-} \rightarrow \pi^0 D_s^-, K^0 \rightarrow K_L, \bar{D}^0 \rightarrow \rho^- K^{*+}, D^+ \rightarrow \mu^+ \nu_\mu \pi^+ K^-,$ $D_s^- \rightarrow K^* K^-, \rho^- \rightarrow \pi^0 \pi^-, K^{*+} \rightarrow \pi^0 K^+, K^* \rightarrow \pi^0 K^0, K^0 \rightarrow K_L$ $(e^+e^- \rightarrow \mu^+ \nu_\mu K_L K_L \pi^+ \pi^+ \pi^- \pi^- K^+ K^- K^- K^- \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	74	74	1	75
76	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \mu^+ \nu_\mu \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^0 \pi^+ \pi^- \rho^+ \bar{D}^{*-} D^{*0}, \bar{D}^{*-} \rightarrow \pi^0 D^-, \rho^+ \rightarrow \pi^0 \pi^+,$ $\bar{D}^{*0} \rightarrow \pi^0 D^-, D^{*0} \rightarrow \pi^0 D^0, D^- \rightarrow K_L \pi^- K^+ K^-, D^- \rightarrow \pi^0 \pi^- \pi^- K^+, D^0 \rightarrow \pi^0 \pi^+ K^-$ $(e^+e^- \rightarrow \mu^+ \nu_\mu K_L \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- K^- \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	75	75	1	76
77	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \rho^+ \omega D^-, \bar{B}^0 \rightarrow K^- D^{*+} \bar{D}^{*0}, \rho^+ \rightarrow \pi^0 \pi^+, \omega \rightarrow \pi^+ \pi^-,$ $\omega \rightarrow \pi^0 \pi^+ \pi^-, D^- \rightarrow \pi^0 K_L \pi^-, D^{*+} \rightarrow \pi^0 D^+, \bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, D^+ \rightarrow \pi^+ \bar{K}_1^{*0}, \bar{D}^0 \rightarrow \rho^- K^{*+},$ $\bar{K}_1^{*0} \rightarrow \pi^+ K^{*-}, \rho^- \rightarrow \pi^0 \pi^-, K^{*+} \rightarrow \pi^+ K^0, K^{*-} \rightarrow \pi^- \bar{K}^0, K^0 \rightarrow K_L, \bar{K}^0 \rightarrow K_S,$ $K_S \rightarrow \pi^0 \pi^0$ $(e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	76	76	1	77
78	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0 \bar{B}^0, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+}, \bar{B}^0 \rightarrow \pi^0 \pi^+ \pi^- \rho^- \omega \bar{K}^0 D^{*+}, D^{*+} \rightarrow \pi^+ D^0, \rho^- \rightarrow \pi^0 \pi^-,$ $\omega \rightarrow \pi^0 \pi^+ \pi^-, \bar{K}^0 \rightarrow K_S, D^{*+} \rightarrow \pi^+ D^0, D^0 \rightarrow \pi^0 \eta K_S, D^0 \rightarrow \mu^+ \nu_\mu K^{*-}, \eta \rightarrow \gamma\gamma,$ $K_S \rightarrow \pi^+ \pi^-, K^{*-} \rightarrow \pi^- \bar{K}^0, \bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K_S \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	77	77	1	78

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
89	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^0 p \bar{\Sigma}_c^{*-}, \bar{B}^0 \rightarrow \mu^- \bar{\nu}_\mu D_0^{*+}, \rho^0 \rightarrow \pi^+\pi^-, \bar{\Sigma}_c^{*-} \rightarrow \pi^0 \bar{\Lambda}_c^-,$ $D_0^{*+} \rightarrow \pi^+ D^0, \bar{\Lambda}_c^- \rightarrow K^+ \bar{\Delta}^{++}, D^0 \rightarrow \pi^+ \pi^- \bar{K}^*, \bar{\Delta}^{++} \rightarrow \pi^- \bar{p}, \bar{K}^* \rightarrow \pi^+ K^-$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- p \bar{p} \gamma \gamma)$	88	88	1	89
90	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+ \nu_\mu \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^- \pi^- D^+ \bar{n} p, \bar{D}^{*-} \rightarrow \pi^0 D^-, D^+ \rightarrow K_S a_1^+,$ $D^- \rightarrow \pi^0 \pi^0 \pi^- \pi^- K^+, K_S \rightarrow \pi^0 \pi^0, a_1^+ \rightarrow \pi^+ f_0(600)$ $(e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ \bar{n} p f_0(600) \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	89	89	1	90
91	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0 \pi^+ \pi^- \rho^+ D^-, \bar{B}^0 \rightarrow \mu^- \bar{\nu}_\mu D^{*+}, \rho^+ \rightarrow \pi^0 \pi^+, D^- \rightarrow \mu^- \bar{\nu}_\mu \pi^- K^+,$ $D^{*+} \rightarrow \pi^0 D^+, D^+ \rightarrow \pi^+ \pi^+ K^-$ $(e^+e^- \rightarrow \mu^- \mu^- \bar{\nu}_\mu \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma)$	90	90	1	91
92	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^- K^{*+} J/\psi, \bar{B}^0 \rightarrow \pi^0 \pi^+ K^- \eta_c(2S), K^{*+} \rightarrow \pi^0 K^+, J/\psi \rightarrow e^+e^-,$ $\pi^0 \rightarrow e^+e^-, \eta_c(2S) \rightarrow \eta \Sigma^+ \bar{\Sigma}^-, \eta \rightarrow \pi^0 \pi^0 \pi^0, \Sigma^+ \rightarrow \pi^+ n, \bar{\Sigma}^- \rightarrow \pi^0 \bar{p}$ $(e^+e^- \rightarrow e^+e^+e^-e^- \pi^+ \pi^+ \pi^- K^+ K^- n \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	91	91	1	92
93	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0\bar{B}^0, \bar{B}^0 \rightarrow \bar{K}^0 \psi', \bar{B}^0 \rightarrow \pi^- \rho^+ \rho^- D^+, \bar{K}^0 \rightarrow K_S, \psi' \rightarrow \pi^0 \pi^0 J/\psi,$ $\rho^+ \rightarrow \pi^0 \pi^+, \rho^- \rightarrow \pi^0 \pi^-, D^+ \rightarrow \bar{K}^* a_1^+, K_S \rightarrow \pi^+ \pi^-, J/\psi \rightarrow \mu^+ \mu^-, \bar{K}^* \rightarrow \pi^+ K^-,$ $a_1^+ \rightarrow \pi^+ f_0(600)$ $(e^+e^- \rightarrow \mu^+ \mu^- \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- f_0(600) \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	92	92	1	93
94	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^0 \rho^+ \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^- K^0 D^+, \rho^0 \rightarrow \pi^+ \pi^-, \rho^+ \rightarrow \pi^0 \pi^+,$ $\bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, K^0 \rightarrow K_L, D^+ \rightarrow K_L a_1^+, \bar{D}^0 \rightarrow \pi^- K^+, a_1^+ \rightarrow \pi^+ f_0(600)$ $(e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ f_0(600) \gamma \gamma)$	93	93	1	94
95	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^+ \omega D^-, \bar{B}^0 \rightarrow \pi^0 \omega K^0 K^- D^+, \rho^+ \rightarrow \pi^0 \pi^+, \omega \rightarrow \pi^0 \pi^+ \pi^-,$ $D^- \rightarrow \pi^- \pi^- K^+, \pi^0 \rightarrow e^+e^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, K^0 \rightarrow K_S, D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^*, K_S \rightarrow \pi^+ \pi^-,$ $\bar{K}^* \rightarrow \pi^+ K^-$ $(e^+e^- \rightarrow e^+e^- \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma)$	94	94	1	95
96	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow e^+ \nu_e \bar{D}^{*-}, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D^{*+} \rightarrow \pi^+ D^0,$ $\bar{D}^0 \rightarrow K^+ a_1^-, D^0 \rightarrow \pi^0 \pi^+ K^-, a_1^- \rightarrow \pi^- f_0(600)$ $(e^+e^- \rightarrow e^+e^- \nu_e \bar{\nu}_e \pi^+ \pi^+ \pi^- \pi^- K^+ K^- f_0(600) \gamma \gamma)$	95	95	1	96
97	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow K^{*+} \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^0 \pi^- D^{*+} \Delta^+ \bar{\Delta}^+, K^{*+} \rightarrow \pi^+ K^0, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0,$ $D^{*+} \rightarrow \pi^+ D^0, \Delta^+ \rightarrow \pi^+ n, \bar{\Delta}^+ \rightarrow \pi^0 \bar{p}, K^0 \rightarrow K_L, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+, D^0 \rightarrow \pi^+ \pi^- K_S,$ $K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ n \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	96	96	1	97
98	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow D_2^{*-} D_s^{*+}, \bar{B}^0 \rightarrow \pi^+ \pi^- D^+ D_s^-, D_2^{*-} \rightarrow \pi^0 \bar{D}^{*-}, D_s^{*+} \rightarrow D_s^+ \gamma,$ $D^+ \rightarrow \pi^+ \bar{K}_1'^0, D_s^- \rightarrow e^- \bar{\nu}_e \eta', \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D_s^+ \rightarrow \pi^+ \phi, \bar{K}_1'^0 \rightarrow \pi^+ K^{*-}, \eta' \rightarrow \pi^0 \pi^0 \eta,$ $\bar{D}^0 \rightarrow \pi^- \omega K^+, \phi \rightarrow \pi^- \rho^+, K^{*-} \rightarrow \pi^- \bar{K}^0, \eta \rightarrow \pi^0 \pi^+ \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, \rho^+ \rightarrow \pi^0 \pi^+,$ $\bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^0 \pi^0$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	97	97	1	98

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
119	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0\pi^0\bar{D}^0, B^0 \rightarrow \pi^0\rho^0\omega D^-, \bar{D}^0 \rightarrow \rho^0\pi^-K^+, \rho^0 \rightarrow \pi^+\pi^-,$ $\rho^+ \rightarrow \pi^0\pi^+, \omega \rightarrow \pi^0\pi^+\pi^-, D^- \rightarrow e^-\bar{\nu}_e\pi^-K^+, \rho^0 \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow e^-\bar{\nu}_e\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	118	118	1	119
120	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow K^0D^{*+}\bar{D}^{*-}, \bar{B}^0 \rightarrow \mu^-\bar{\nu}_\mu D^{*+}, K^0 \rightarrow K_S, D^{*+} \rightarrow \pi^0D^+,$ $\bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, D^{*+} \rightarrow \pi^+D^0, K_S \rightarrow \pi^+\pi^-, D^+ \rightarrow \pi^+\pi^+K^-, \bar{D}^0 \rightarrow \pi^-K_SK^+, D^0 \rightarrow K_L\pi^-K^+,$ $K_S \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow \mu^-\bar{\nu}_\mu K_L\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^+K^-\gamma\gamma)$	119	119	1	120
121	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0\bar{B}^0, \bar{B}^0 \rightarrow e^-\bar{\nu}_e D^{*+}, \bar{B}^0 \rightarrow \mu^-\bar{\nu}_\mu D^{*+}, D^{*+} \rightarrow \pi^+D^0, D^{*+} \rightarrow \pi^+D^0,$ $D^0 \rightarrow \pi^0\pi^+K^-, D^0 \rightarrow \rho^+K^{*-}, \rho^+ \rightarrow \pi^0\pi^+, K^{*-} \rightarrow \pi^-\bar{K}^0, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow e^-\bar{\nu}_e\mu^-\bar{\nu}_\mu K_L\pi^+\pi^+\pi^+\pi^-\pi^-K^-\gamma\gamma\gamma\gamma)$	120	120	1	121
122	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0\pi^+\bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^+\pi^-\omega D^{*0}, \bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, \omega \rightarrow \pi^0\pi^+\pi^-,$ $D^{*0} \rightarrow \pi^0D^0, \bar{D}^0 \rightarrow \pi^-K_SK^+, D^0 \rightarrow \mu^+\nu_\mu\pi^-\bar{K}^0, K_S \rightarrow \pi^+\pi^-, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow \mu^+\nu_\mu K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma)$	121	121	1	122
123	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+\nu_\mu\bar{D}^{*-}, \bar{B}^0 \rightarrow e^-\bar{\nu}_e D^{*+}, \bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, D^{*+} \rightarrow \pi^+D^0,$ $\bar{D}^0 \rightarrow e^-\bar{\nu}_e K^+, D^0 \rightarrow \rho^+K^{*-}, \rho^+ \rightarrow \pi^0\pi^+, K^{*-} \rightarrow \pi^0K^-$ $(e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^-\pi^-K^+K^-\gamma\gamma\gamma\gamma)$	122	122	1	123
124	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \tau^+\nu_\tau\bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^0\omega K^{*-}D_s^+, \tau^+ \rightarrow \bar{\nu}_\tau\pi^0\pi^+, \bar{D}^{*-} \rightarrow \pi^0D^-,$ $\omega \rightarrow \pi^0\pi^+\pi^-, K^{*-} \rightarrow \pi^-\bar{K}^0, D_s^+ \rightarrow \pi^+f_0(980), D^- \rightarrow e^-\bar{\nu}_e K^0, \bar{K}^0 \rightarrow K_L, f_0(980) \rightarrow \pi^+\pi^-,$ $K^0 \rightarrow K_S, K_S \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow e^-\bar{\nu}_e\nu_\tau\bar{\nu}_\tau K_L\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	123	123	1	124
125	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^-\bar{K}^0K^+\bar{D}^{*0}, \bar{B}^0 \rightarrow \mu^-\bar{\nu}_\mu D^+, \bar{K}^0 \rightarrow K_L, \bar{D}^{*0} \rightarrow \pi^0\bar{D}^0,$ $D^+ \rightarrow K_LK^{*+}, \bar{D}^0 \rightarrow \omega K_S, K^{*+} \rightarrow \pi^+K^0, \omega \rightarrow \pi^0\pi^+\pi^-, K_S \rightarrow \pi^0\pi^0, K^0 \rightarrow K_S,$ $\pi^0 \rightarrow e^+e^-, K_S \rightarrow \pi^0\pi^0$ $(e^+e^- \rightarrow e^+e^-\mu^-\bar{\nu}_\mu K_LK_L\pi^+\pi^+\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	124	124	1	125
126	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+\nu_\mu D_1'^-, \bar{B}^0 \rightarrow \mu^-\bar{\nu}_\mu D^{*+}, D_1'^- \rightarrow \pi^-\bar{D}^{*0}, D^{*+} \rightarrow \pi^0D^+,$ $\bar{D}^{*0} \rightarrow \pi^0\bar{D}^0, D^+ \rightarrow e^+\nu_e\bar{K}^*, \bar{D}^0 \rightarrow \rho^-K^{*+}, \bar{K}^* \rightarrow \pi^+K^-, \rho^- \rightarrow \pi^0\pi^-, K^{*+} \rightarrow \pi^+K^0,$ $K^0 \rightarrow K_S, K_S \rightarrow \pi^0\pi^0$ $(e^+e^- \rightarrow e^+\nu_e\mu^+\mu^-\nu_\mu\bar{\nu}_\mu\pi^+\pi^+\pi^-\pi^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	125	125	1	126
127	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0\pi^+\pi^+\pi^-\bar{D}^{*-}, \bar{B}^0 \rightarrow D_2^{*+}D_s^-, \pi^0 \rightarrow e^+e^-, \bar{D}^{*-} \rightarrow \pi^-\bar{D}^0,$ $D_2^{*+} \rightarrow \pi^+D^0, D_s^- \rightarrow \pi^0\pi^0\pi^-, \bar{D}^0 \rightarrow \pi^0\pi^-K^+, D^0 \rightarrow \rho^+K^{*-}, \rho^+ \rightarrow \pi^0\pi^+, K^{*-} \rightarrow \pi^-\bar{K}^0,$ $\bar{K}^0 \rightarrow K_L, K_L \rightarrow \pi^0\pi^+\pi^-$ $(e^+e^- \rightarrow e^+e^-\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	126	126	1	127
128	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0\bar{B}^0, \bar{B}^0 \rightarrow e^-\bar{\nu}_e D^{*+}, \bar{B}^0 \rightarrow \bar{K}^*D^+D^-, D^{*+} \rightarrow \pi^+D^0, \bar{K}^* \rightarrow \pi^+K^-,$ $D^+ \rightarrow e^+\nu_e\bar{K}^0, D^- \rightarrow e^-\bar{\nu}_e K^*, D^0 \rightarrow \pi^0\pi^+K^-, \bar{K}^0 \rightarrow K_S, K^* \rightarrow \pi^0K^0, K_S \rightarrow \pi^+\pi^-,$ $K^0 \rightarrow K_L$ $(e^+e^- \rightarrow e^+e^-e^-\bar{\nu}_e\bar{\nu}_e K_L\pi^+\pi^+\pi^+\pi^-\pi^-K^-K^-\gamma\gamma\gamma\gamma)$	127	127	1	128

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
129	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow e^+ \nu_e D_1'^-, \bar{B}^0 \rightarrow \pi^+ D^0 D_s^-, D_1'^- \rightarrow \pi^- \bar{D}^{*0}, D^0 \rightarrow \pi^0 \pi^+ \pi^- K_S,$ $D_s^- \rightarrow \tau^- \bar{\nu}_\tau, \bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, K_S \rightarrow \pi^+ \pi^-, \tau^- \rightarrow e^- \bar{\nu}_e \nu_\tau, \bar{D}^0 \rightarrow \pi^+ \pi^- K_S, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^+e^- \nu_e \bar{\nu}_e \nu_\tau \bar{\nu}_\tau \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \gamma \gamma \gamma \gamma)$	128	128	1	129
130	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \bar{D}^{*-} a_1^+, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+}, \bar{D}^{*-} \rightarrow \pi^0 D^-, a_1^+ \rightarrow \pi^0 \rho^+,$ $D^{*+} \rightarrow \pi^0 D^+, D^- \rightarrow \pi^- \pi^- K^+, \rho^+ \rightarrow \pi^0 \pi^+, D^+ \rightarrow e^+ \nu_e \bar{K}^0, \bar{K}^0 \rightarrow K_L, K_L \rightarrow e^- \nu_e \pi^+$ $(e^+e^- \rightarrow e^+e^- e^- \nu_e \bar{\nu}_e \pi^+ \pi^+ \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	129	129	1	130
131	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \eta \bar{K}^0 K^+ \bar{D}^{*-}, \bar{B}^0 \rightarrow \rho^- \eta D^+, \eta \rightarrow \pi^0 \pi^+ \pi^-, \bar{K}^0 \rightarrow K_S,$ $\bar{D}^{*-} \rightarrow \pi^0 D^-, \rho^- \rightarrow \pi^0 \pi^-, \eta \rightarrow \gamma \gamma, D^+ \rightarrow \pi^0 \pi^0 \pi^+, K_S \rightarrow \pi^0 \pi^0, D^- \rightarrow K_L a_1^-,$ $a_1^- \rightarrow \rho^0 \pi^-, \rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	130	130	1	131
132	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0 \bar{B}^0, \bar{B}^0 \rightarrow \rho^- D^+, \bar{B}^0 \rightarrow \rho^0 \pi^- \omega D^+, \rho^- \rightarrow \pi^0 \pi^-, D^+ \rightarrow e^+ \nu_e \pi^+ K^-,$ $\rho^0 \rightarrow \pi^+ \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, D^+ \rightarrow \pi^+ \pi^+ K^-$ $(e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- K^- \gamma \gamma \gamma \gamma)$	131	131	1	132
133	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \bar{D}^{*-} D_s^+, B^0 \rightarrow e^+ \nu_e D_2^{*-}, \bar{D}^{*-} \rightarrow \pi^0 D^-, D_s^+ \rightarrow \mu^+ \nu_\mu \phi,$ $D_2^{*-} \rightarrow \pi^- \bar{D}^{*0}, D^- \rightarrow e^- \bar{\nu}_e \pi^- K^+, \phi \rightarrow K^+ K^-, \bar{D}^{*0} \rightarrow \bar{D}^0 \gamma, \bar{D}^0 \rightarrow K^+ a_1^-, a_1^- \rightarrow \rho^0 \pi^-,$ $\rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^+e^- \nu_e \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^+ K^- \gamma \gamma \gamma)$	132	132	1	133
134	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^+ \pi^- \rho^+ \bar{D}^{*-}, \bar{B}^0 \rightarrow D_2^{*+} D_s^-, \rho^+ \rightarrow \pi^0 \pi^+, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0,$ $D_2^{*+} \rightarrow \pi^+ D^0, D_s^- \rightarrow \tau^- \bar{\nu}_\tau, \bar{D}^0 \rightarrow \pi^0 K_L \pi^+ \pi^-, D^0 \rightarrow \rho^+ K^{*-}, \tau^- \rightarrow \nu_\tau \pi^0 \pi^-, \rho^+ \rightarrow \pi^0 \pi^+,$ $K^{*-} \rightarrow \pi^- \bar{K}^0, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow \nu_\tau \bar{\nu}_\tau K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	133	133	1	134
135	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \omega K^+ D_s^{*-}, \bar{B}^0 \rightarrow \mu^- \bar{\nu}_\mu D^{*+}, \omega \rightarrow \pi^0 \pi^+ \pi^-, D_s^{*-} \rightarrow D_s^- \gamma,$ $D^{*+} \rightarrow \pi^+ D^0, D_s^- \rightarrow \rho^- \eta', D^0 \rightarrow \pi^+ \pi^+ \pi^- K^-, \rho^- \rightarrow \pi^0 \pi^-, \eta' \rightarrow \rho^0 \gamma, \rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	134	134	1	135
136	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow D_s^{*+} D_1'^-, \bar{B}^0 \rightarrow \rho^0 \pi^- D^{*+}, D_s^{*+} \rightarrow D_s^+ \gamma, D_1'^- \rightarrow \pi^- \bar{D}^{*0},$ $\rho^0 \rightarrow \pi^+ \pi^-, D^{*+} \rightarrow \pi^+ D^0, D_s^+ \rightarrow K_L \pi^+ \pi^- K^+, \bar{D}^{*0} \rightarrow \bar{D}^0 \gamma, D^0 \rightarrow K^- a_1^+, \bar{D}^0 \rightarrow \pi^0 \pi^+ \pi^- K^*,$ $a_1^+ \rightarrow \pi^+ f_0(600), K^* \rightarrow \pi^- K^+$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- f_0(600) \gamma \gamma \gamma \gamma)$	135	135	1	136
137	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^0 \pi^- \rho^+ K^0 D^-, \bar{B}^0 \rightarrow \pi^0 \rho^0 \pi^- \eta \omega D^+, \rho^0 \rightarrow \pi^+ \pi^-, \rho^+ \rightarrow \pi^0 \pi^+,$ $\rho^- \rightarrow \pi^0 \pi^+, K^0 \rightarrow K_S, D^- \rightarrow K_L \pi^+ \pi^- K^-, \pi^0 \rightarrow e^+ e^-, \rho^0 \rightarrow \pi^+ \pi^-, \eta \rightarrow \pi^+ \pi^-,$ $\omega \rightarrow \pi^0 \pi^+ \pi^-, D^+ \rightarrow K_L a_1^+, K_S \rightarrow \pi^+ \pi^-, a_1^+ \rightarrow \pi^0 \rho^+, \rho^+ \rightarrow \pi^0 \pi^+$ $(e^+e^- \rightarrow e^+e^- K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	136	136	1	137
138	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \pi^0 K^+ D_s^{*-}, \bar{B}^0 \rightarrow D^{*0} n \bar{n}, D_s^{*-} \rightarrow D_s^- \gamma, D^{*0} \rightarrow \pi^0 D^0,$ $D_s^- \rightarrow \rho^- \eta', D^0 \rightarrow \pi^+ K^-, \rho^- \rightarrow \pi^0 \pi^-, \eta' \rightarrow \rho^0 \gamma, \rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^- \pi^- K^+ K^- n \bar{n} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	137	137	1	138

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
149	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \rho^0 \pi^+ D^-, \bar{B}^0 \rightarrow \pi^+ \pi^- \pi^- D^+, \rho^0 \rightarrow \pi^+ \pi^-, D^- \rightarrow \pi^- K_1^{'0},$ $D^+ \rightarrow K_S a_1^+, K_1^{'0} \rightarrow \pi^- K^{*+}, K_S \rightarrow \pi^+ \pi^-, a_1^+ \rightarrow \pi^0 \rho^+, K^{*+} \rightarrow \pi^0 K^+, \rho^+ \rightarrow \pi^0 \pi^+$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma)$	148	148	1	149
150	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \tau^+ \nu_\tau D_0^{*-}, \bar{B}^0 \rightarrow \pi^0 \omega K^* K^- D^+, \tau^+ \rightarrow \mu^+ \nu_\mu \bar{\nu}_\tau, D_0^{*-} \rightarrow \pi^- \bar{D}^0,$ $\omega \rightarrow \pi^0 \pi^+ \pi^-, K^* \rightarrow \pi^0 K^0, D^+ \rightarrow \pi^+ \pi^+ K^-, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+, K^0 \rightarrow K_L$ $(e^+e^- \rightarrow \mu^+ \nu_\mu \nu_\tau \bar{\nu}_\tau K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma)$	149	149	1	150
151	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow e^+ \nu_e \pi^+ \pi^- \bar{D}^{*-}, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D^{*+} \rightarrow \pi^0 D^+,$ $\bar{D}^0 \rightarrow \pi^- K^+, D^+ \rightarrow \mu^+ \nu_\mu \pi^+ K^-$ $(e^+e^- \rightarrow e^+ e^- \nu_e \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma)$	150	150	1	151
152	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^0 \bar{D}^{*-} \bar{\Sigma}^0 \Sigma^+, \bar{B}^0 \rightarrow \eta \bar{K}^0 J/\psi, \rho^0 \rightarrow \pi^+ \pi^-, \bar{D}^{*-} \rightarrow \pi^0 D^-,$ $\bar{\Sigma}^0 \rightarrow \bar{\Lambda} \gamma, \Sigma^+ \rightarrow \pi^+ n, \eta \rightarrow \pi^0 \pi^0 \pi^0, \bar{K}^0 \rightarrow K_L, J/\psi \rightarrow \pi^- \eta K_S K^+, D^- \rightarrow \mu^- \bar{\nu}_\mu K^0,$ $\bar{\Lambda} \rightarrow \pi^+ \bar{p}, K_L \rightarrow e^- \nu_e \pi^+, \eta \rightarrow \pi^0 \pi^+ \pi^-, K_S \rightarrow \pi^+ \pi^-, K^0 \rightarrow K_S, K_S \rightarrow \pi^0 \pi^0$ $(e^+e^- \rightarrow e^- \nu_e \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ n \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	151	151	1	152
153	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^0 \rho^0 \rho^+ \bar{D}^{*-}, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+}, \rho^0 \rightarrow \pi^+ \pi^-, \rho^+ \rightarrow \pi^+ \pi^-,$ $\rho^0 \rightarrow \pi^+ \pi^-, \rho^+ \rightarrow \pi^0 \pi^+, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D^{*+} \rightarrow D^+ \gamma, \bar{D}^0 \rightarrow \rho^- K^{*+}, D^+ \rightarrow K_S K^{*+},$ $\rho^- \rightarrow \pi^0 \pi^-, K^{*+} \rightarrow \pi^0 K^+, K_S \rightarrow \pi^+ \pi^-, K^{*+} \rightarrow \pi^+ K^0, K^0 \rightarrow K_L, K_L \rightarrow \mu^- \nu_\mu \pi^+$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \mu^- \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma)$	152	152	1	153
154	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow K^{*+} D^-, \bar{B}^0 \rightarrow \pi^+ K^- \chi_{c1}, K^{*+} \rightarrow \pi^0 K^+, D^- \rightarrow \pi^- K_1^{'0},$ $\chi_{c1} \rightarrow \pi^- \eta \eta \bar{K}^0 K^+, K_1^{'0} \rightarrow \pi^- K^{*+}, \eta \rightarrow \gamma \gamma, \eta \rightarrow \pi^0 \pi^0 \pi^0, \bar{K}^0 \rightarrow K_S, K^{*+} \rightarrow \pi^0 K^+,$ $K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	153	153	1	154
155	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow K^{*+} D^- D^0, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D_2^{*+}, K^{*+} \rightarrow \pi^0 K^+, D^- \rightarrow \pi^0 \pi^- K_S,$ $D^0 \rightarrow \pi^0 \pi^0 \pi^+ \pi^-, D_2^{*+} \rightarrow \pi^+ D^0, K_S \rightarrow \pi^+ \pi^-, D^0 \rightarrow \pi^0 \pi^+ K^{*-}, K^{*-} \rightarrow \pi^0 K^-$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	154	154	1	155
156	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^+ D^-, \bar{B}^0 \rightarrow \pi^- \pi^- \rho^+ D^{*+}, \rho^+ \rightarrow \pi^0 \pi^+, D^- \rightarrow \rho^- K^*,$ $\rho^+ \rightarrow \pi^0 \pi^+, D^{*+} \rightarrow \pi^+ D^0, \rho^- \rightarrow \pi^0 \pi^-, K^* \rightarrow \pi^- K^+, D^0 \rightarrow \pi^0 \pi^0 \bar{K}^*, \bar{K}^* \rightarrow \pi^+ K^-$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	155	155	1	156
157	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow e^+ \nu_e \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^0 \rho^0 \rho^- D^{*+} \gamma, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, \rho^0 \rightarrow \pi^+ \pi^-,$ $\rho^- \rightarrow \pi^0 \pi^-, D^{*+} \rightarrow \pi^+ D^0, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+, D^0 \rightarrow e^+ \nu_e \rho^-, \rho^- \rightarrow \pi^0 \pi^-$ $(e^+e^- \rightarrow e^+ e^- \nu_e \nu_e \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	156	156	1	157
158	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^+ \bar{D}^{*-}, B^0 \rightarrow \pi^0 \rho^0 \pi^+ \pi^+ \pi^- \pi^- \pi^- \eta \omega D^-, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, \rho^0 \rightarrow \pi^+ \pi^-,$ $\eta \rightarrow \pi^0 \pi^+ \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, D^- \rightarrow \mu^- \bar{\nu}_\mu \pi^- K^+, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	157	157	1	158
159	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^- K^0 D^+ \bar{D}^{*0}, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^+, K^0 \rightarrow K_S, D^+ \rightarrow K_S a_1^+,$ $\bar{D}^{*0} \rightarrow \bar{D}^0 \gamma, D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^*, K_S \rightarrow \pi^+ \pi^-, K_S \rightarrow \pi^+ \pi^-, a_1^+ \rightarrow \pi^+ f_0(600), \bar{D}^0 \rightarrow \pi^0 \pi^- K^+,$ $\bar{K}^* \rightarrow \pi^0 \bar{K}^0, \bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ f_0(600) \gamma \gamma \gamma \gamma \gamma \gamma)$	158	158	1	159

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
160	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+\nu_\mu D_1^-, \bar{B}^0 \rightarrow e^-\bar{\nu}_e D^{*+}, D_1^- \rightarrow \pi^-\bar{D}^{*0}, D^{*+} \rightarrow \pi^0 D^+,$ $\bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, D^+ \rightarrow e^+\nu_e \pi^0, \bar{D}^0 \rightarrow \pi^0 K_S, K_S \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^-\pi^-\gamma\gamma\gamma\gamma\gamma\gamma)$	159	159	1	160
161	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \bar{K}^0 K^+ D^-, \bar{B}^0 \rightarrow \rho^0 \pi^- D^{*+}, \bar{K}^0 \rightarrow K_L, D^- \rightarrow K^* a_1^-,$ $\rho^0 \rightarrow \pi^+\pi^-, D^{*+} \rightarrow \pi^+ D^0, K^* \rightarrow \pi^- K^+, a_1^- \rightarrow \pi^- f_0(600), D^0 \rightarrow \pi^+ \omega K^-, \omega \rightarrow \pi^0 \pi^+ \pi^-$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- f_0(600) \gamma \gamma)$	160	160	1	161
162	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0 \bar{B}^0, \bar{B}^0 \rightarrow D^{*+} D_s^-, \bar{B}^0 \rightarrow \pi^0 \pi^0 \pi^- \omega D^+, D^{*+} \rightarrow \pi^+ D^0, D_s^- \rightarrow \mu^- \bar{\nu}_\mu \eta,$ $\omega \rightarrow \pi^+ \pi^-, D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^*, D^0 \rightarrow \pi^0 \pi^+ K^-, \eta \rightarrow \pi^0 \pi^0 \pi^0, \bar{K}^* \rightarrow \pi^+ K^-$ $(e^+e^- \rightarrow \mu^+ \mu^- \nu_\mu \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	161	161	1	162
163	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^+ \omega \bar{D}^{*-}, \bar{B}^0 \rightarrow D^{*+} D_s^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0,$ $D^{*+} \rightarrow \pi^0 D^+, D_s^- \rightarrow \mu^- \bar{\nu}_\mu \eta', \bar{D}^0 \rightarrow \pi^0 \pi^+ \pi^- K_S, D^+ \rightarrow \pi^+ \pi^+ K^-, \eta' \rightarrow \rho^0 \gamma, K_S \rightarrow \pi^+ \pi^-,$ $\rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma)$	162	162	1	163
164	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \Sigma^0 \Xi_c^0, \bar{B}^0 \rightarrow D^+ D_{s1}^-, \Sigma^0 \rightarrow \Lambda \gamma, \Xi_c^0 \rightarrow \pi^- K^+ \bar{\Sigma}^0,$ $D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^*, D_{s1}^- \rightarrow \pi^0 D_s^{*-}, \Lambda \rightarrow \pi^- p, \bar{\Sigma}^0 \rightarrow \bar{\Lambda} \gamma, \bar{K}^* \rightarrow \pi^+ K^-, D_s^{*-} \rightarrow D_s^- \gamma,$ $\bar{\Lambda} \rightarrow \pi^+ \bar{p}, D_s^- \rightarrow \rho^- \eta', \rho^- \rightarrow \pi^0 \pi^-, \eta' \rightarrow \pi^+ \pi^- \eta, \eta \rightarrow \gamma \gamma$ $(e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- p \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	163	163	1	164
165	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^0 \eta \omega \bar{D}^{*0}, \bar{B}^0 \rightarrow \pi^0 \rho^- \omega D^{*+}, \rho^0 \rightarrow \pi^+ \pi^-, \eta \rightarrow \pi^0 \pi^+ \pi^-,$ $\omega \rightarrow \pi^0 \pi^+ \pi^-, \bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, \rho^- \rightarrow \pi^0 \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, D^{*+} \rightarrow \pi^+ D^0, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+,$ $D^0 \rightarrow e^+ \nu_e K^{*-}, K^{*-} \rightarrow \pi^- \bar{K}^0, \bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	164	164	1	165
166	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \bar{D}^{*-} \bar{\Delta}^- \Delta^0, \bar{B}^0 \rightarrow \rho^- D^+, \bar{D}^{*-} \rightarrow \pi^0 D^-, \bar{\Delta}^- \rightarrow \pi^+ \bar{n},$ $\Delta^0 \rightarrow \pi^0 n, \rho^- \rightarrow \pi^0 \pi^-, D^+ \rightarrow \mu^+ \nu_\mu \pi^+ K^-, D^- \rightarrow \mu^- \bar{\nu}_\mu K^0, K^0 \rightarrow K_L$ $(e^+e^- \rightarrow \mu^+ \mu^- \nu_\mu \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^- K^- n \bar{n} \gamma \gamma \gamma \gamma \gamma)$	165	165	1	166
167	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^- p \bar{\Sigma}_c^0, \bar{B}^0 \rightarrow \tau^- \bar{\nu}_\tau D^{*+}, \rho^- \rightarrow \pi^0 \pi^-, \bar{\Sigma}_c^0 \rightarrow \pi^+ \bar{\Lambda}_c^-,$ $\tau^- \rightarrow \nu_\tau \pi^0 \pi^-, D^{*+} \rightarrow \pi^+ D^0, \bar{\Lambda}_c^- \rightarrow \pi^- \eta \bar{\Lambda}, D^0 \rightarrow K_S \phi, \eta \rightarrow e^+ e^-, \bar{\Lambda} \rightarrow \pi^0 \bar{n},$ $K_S \rightarrow \pi^+ \pi^-, \phi \rightarrow K^+ K^-$ $(e^+e^- \rightarrow e^+ e^- \nu_\tau \bar{\nu}_\tau \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \bar{n} p \gamma \gamma \gamma \gamma \gamma)$	166	166	1	167
168	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0 \bar{B}^0, \bar{B}^0 \rightarrow \pi^+ K^{*-} J/\psi, \bar{B}^0 \rightarrow \bar{K}^0 D^{*0} \bar{D}^{*0}, K^{*-} \rightarrow \pi^- \bar{K}^0, J/\psi \rightarrow K^* \bar{K}^* \gamma,$ $\bar{K}^0 \rightarrow K_L, D^{*0} \rightarrow D^0 \gamma, \bar{D}^{*0} \rightarrow \bar{D}^0 \gamma, \bar{K}^0 \rightarrow K_L, K^* \rightarrow \pi^- K^+, \bar{K}^* \rightarrow \pi^+ K^-,$ $D^0 \rightarrow \pi^0 \pi^+ K^-, \bar{D}^0 \rightarrow \pi^0 \pi^+ \pi^- K^*, K^* \rightarrow \pi^- K^+$ $(e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma)$	167	167	1	168
169	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^- K^{*+} D^0 \bar{D}^{*0}, \bar{B}^0 \rightarrow \pi^0 \pi^+ \pi^- \pi^- D^{*+}, K^{*+} \rightarrow \pi^+ K^0, D^0 \rightarrow K^- a_1^+,$ $\bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, D^{*+} \rightarrow \pi^+ D^0, K^0 \rightarrow K_S, a_1^+ \rightarrow \pi^+ \pi^+ \pi^-, \bar{D}^0 \rightarrow \rho^- K^{*+}, D^0 \rightarrow \pi^+ K^-,$ $K_S \rightarrow \pi^+ \pi^-, \rho^- \rightarrow \pi^0 \pi^-, K^{*+} \rightarrow \pi^0 K^+$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	168	168	1	169

Table 2: Event initial-final states.

[illegible]

index	event initial-final states	iEvtIFSts	nEvts	nCmltEvts
129	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\nu_\tau\bar{\nu}_\tau\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\gamma\gamma\gamma\gamma$	128	1	129
130	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\nu_e\pi^+\pi^+\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	129	1	130
131	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	130	1	131
132	$e^+e^- \rightarrow e^+\nu_e\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^-K^-\gamma\gamma\gamma\gamma$	131	1	132
133	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^+K^+K^-\gamma\gamma\gamma$	132	1	133
134	$e^+e^- \rightarrow \nu_\tau\bar{\nu}_\tau K_L K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	133	1	134
135	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	134	1	135
136	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+K^-f_0(600)\gamma\gamma\gamma\gamma$	135	1	136
137	$e^+e^- \rightarrow e^+e^-K_L K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	136	1	137
138	$e^+e^- \rightarrow \pi^+\pi^+\pi^-\pi^-K^+K^-n\bar{n}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	137	1	138
139	$e^+e^- \rightarrow e^+\nu_e K_L\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-p\bar{p}\gamma\gamma\gamma\gamma$	138	1	139
140	$e^+e^- \rightarrow e^-\bar{\nu}_e\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	139	1	140
141	$e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma$	140	1	141
142	$e^+e^- \rightarrow \mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^+K^-K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	141	1	142
143	$e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-K^+K^-K^-K^-n\bar{n}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	142	1	143
144	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^-K^+K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	143	1	144
145	$e^+e^- \rightarrow e^-\bar{\nu}_e K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	144	1	145
146	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^-K^-\gamma\gamma\gamma\gamma\gamma$	145	1	146
147	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	146	1	147
148	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	147	1	148
149	$e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	148	1	149
150	$e^+e^- \rightarrow \mu^+\nu_\mu\nu_\tau\bar{\nu}_\tau K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	149	1	150
151	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-\gamma\gamma$	150	1	151
152	$e^+e^- \rightarrow e^-\nu_e\mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+n\bar{p}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	151	1	152
153	$e^+e^- \rightarrow e^-\bar{\nu}_e\mu^-\nu_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	152	1	153
154	$e^+e^- \rightarrow \pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^+K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	153	1	154
155	$e^+e^- \rightarrow e^-\bar{\nu}_e\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	154	1	155
156	$e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	155	1	156
157	$e^+e^- \rightarrow e^+e^+\nu_e\bar{\nu}_e\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	156	1	157
158	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	157	1	158
159	$e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+f_0(600)\gamma\gamma\gamma\gamma\gamma$	158	1	159
160	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^-\pi^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	159	1	160

index	event initial-final states	iEvtIFSts	nEvts	nCmltEvts
161	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+K^-f_0(600)\gamma\gamma$	160	1	161
162	$e^+e^- \rightarrow \mu^+\mu^-\nu_\mu\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	161	1	162
163	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^-\gamma\gamma\gamma\gamma\gamma\gamma$	162	1	163
164	$e^+e^- \rightarrow \mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^-p\bar{p}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	163	1	164
165	$e^+e^- \rightarrow e^+\nu_e\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	164	1	165
166	$e^+e^- \rightarrow \mu^+\mu^-\nu_\mu\bar{\nu}_\mu K_L\pi^+\pi^-\pi^-K^-n\bar{n}\gamma\gamma\gamma\gamma\gamma$	165	1	166
167	$e^+e^- \rightarrow e^+e^-\nu_\tau\bar{\nu}_\tau\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^-\bar{n}p\gamma\gamma\gamma\gamma\gamma\gamma$	166	1	167
168	$e^+e^- \rightarrow K_LK_L\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^+K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma$	167	1	168
169	$e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	168	1	169
170	$e^+e^- \rightarrow \mu^+\mu^-\nu_\mu\bar{\nu}_\mu K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+\gamma\gamma\gamma\gamma$	169	1	170
171	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-n\bar{n}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	170	1	171
172	$e^+e^- \rightarrow \mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	171	1	172
173	$e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	172	1	173
174	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	173	1	174
175	$e^+e^- \rightarrow K_LK_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^-K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	174	1	175
176	$e^+e^- \rightarrow \nu_\tau\bar{\nu}_\tau\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-\bar{n}p\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	175	1	176
177	$e^+e^- \rightarrow e^-\bar{\nu}_eK_LK_LK_L\pi^+\pi^-\pi^-K^-\bar{n}p\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	176	1	177
178	$e^+e^- \rightarrow K_L\pi^+\pi^-K^+K^-K^-\bar{n}p\gamma$	177	1	178
179	$e^+e^- \rightarrow e^+\nu_e\mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^-\pi^-K^-K^-n\bar{n}\gamma\gamma$	178	1	179
180	$e^+e^- \rightarrow e^+\nu_e\mu^+\nu_\mu\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	179	1	180
181	$e^+e^- \rightarrow \mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^-p\bar{p}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	180	1	181
182	$e^+e^- \rightarrow \mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	181	1	182
183	$e^+e^- \rightarrow e^+\nu_eK_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	182	1	183
184	$e^+e^- \rightarrow \mu^+\nu_\mu\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	183	1	184
185	$e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^-\pi^-n\bar{n}\gamma$	184	1	185
186	$e^+e^- \rightarrow e^+\nu_eK_LK_L\pi^+\pi^-\pi^-\pi^-K^+K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	185	1	186
187	$e^+e^- \rightarrow \mu^+\mu^+\mu^-\nu_\mu\nu_\mu\bar{\nu}_\mu K_L\pi^+\pi^+\pi^-\pi^-\pi^-\gamma\gamma\gamma\gamma\gamma$	186	1	187
188	$e^+e^- \rightarrow e^+\nu_e\mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	187	1	188
189	$e^+e^- \rightarrow e^-\bar{\nu}_eK_LK_L\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	188	1	189
190	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^-\pi^-K^-\gamma$	189	1	190
191	$e^+e^- \rightarrow e^+\nu_eK_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+p\bar{p}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	190	1	191
192	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_eK_L\pi^+\pi^+\pi^+\pi^-\pi^-K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	191	1	192

[illegible]

Table 3: Exclusive event branches matched with $B^0 \rightarrow J/\psi + \text{anything}$.

index	exclusive event branch matched with $B^0 \rightarrow J/\psi + \text{anything}$	iEvtBrIncEvtBr1	nEtrs	nCmltEtrs
1	$B^0 \rightarrow \pi^- K^{*+} J/\psi$	0	2	2
2	$B^0 \rightarrow \rho^- K^+ J/\psi$	1	1	3
3	$B^0 \rightarrow K^0 J/\psi$	2	1	4
4	$B^0 \rightarrow J/\psi K_1^0$	3	1	5

Table 4: Exclusive event branches matched with $B^0 \rightarrow e^+ \nu_e + \text{anything}$.

index	exclusive event branch matched with $B^0 \rightarrow e^+ \nu_e + \text{anything}$	iEvtBrIncEvtBr2	nEtrs	nCmltEtrs
1	$B^0 \rightarrow e^+ \nu_e \bar{D}^{*-}$	0	9	9
2	$B^0 \rightarrow e^+ \nu_e D^-$	2	5	14
3	$B^0 \rightarrow e^+ \nu_e \eta D^-$	1	2	16
4	$B^0 \rightarrow e^+ \nu_e D_2^{*-}$	3	2	18
5	$B^0 \rightarrow e^+ \nu_e D_1'^{-}$	4	1	19
6	$B^0 \rightarrow e^+ \nu_e \pi^+ \pi^- \bar{D}^{*-}$	5	1	20