

Topology Analysis ^{*}

(v1.5)

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^{*}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 for their efforts in helping me test the program.

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index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
11	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+\nu_\mu\bar{D}^{*-}, \bar{B}^0 \rightarrow \rho^0 K^0 K^{*-} D^+, \bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, \rho^0 \rightarrow \pi^+\pi^-\gamma^{gFSR},$ $K^0 \rightarrow K_L, K^{*-} \rightarrow \pi^0 K^-, D^+ \rightarrow \mu^+\nu_\mu\bar{K}^0, \bar{D}^0 \rightarrow \rho^- K^{*+}, \bar{K}^0 \rightarrow K_L, \rho^- \rightarrow \pi^0\pi^-,$ $K^{*+} \rightarrow \pi^0 K^+$ $(e^+e^- \rightarrow \mu^+\mu^+\nu_\mu\nu_\mu K_L K_L \pi^+\pi^-\pi^-\pi^- K^+ K^- \gamma^{gFSR} \gamma\gamma\gamma\gamma\gamma)$	10	10	1	11
12	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^- K^+ J/\psi \gamma^{gFSR}, \bar{B}^0 \rightarrow D^+ D_s^{*-}, \rho^- \rightarrow \pi^0\pi^-, J/\psi \rightarrow e^+e^- \gamma^{gFSR},$ $D^+ \rightarrow \pi^0\pi^+ K_S, D_s^{*-} \rightarrow D_s^- \gamma, K_S \rightarrow \pi^0\pi^0, D_s^- \rightarrow \tau^-\bar{\nu}_\tau, \tau^- \rightarrow \mu^-\bar{\nu}_\mu\nu_\tau$ $(e^+e^- \rightarrow e^+e^-\mu^-\bar{\nu}_\mu\nu_\tau\pi^+\pi^- K^+ \gamma^{gFSR} \gamma^{gFSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	11	11	1	12
13	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^+\pi^- K^0 D^0 \bar{D}^0, \bar{B}^0 \rightarrow \pi^0\pi^+ \rho^- \rho^- D^+, K^0 \rightarrow K_S \eta',$ $\bar{D}^0 \rightarrow \rho^- K^{*+}, \rho^- \rightarrow \pi^0\pi^-, \rho^- \rightarrow \pi^0\pi^-, D^+ \rightarrow \mu^+\nu_\mu\bar{K}^0, K_L \rightarrow \pi^0\pi^0\pi^0, K_S \rightarrow \pi^+\pi^- \gamma^{gFSR},$ $\eta' \rightarrow \pi^+\pi^-\eta, \rho^- \rightarrow \pi^0\pi^-, K^{*+} \rightarrow \pi^0 K^+, \bar{K}^0 \rightarrow K_L, \eta \rightarrow \pi^0\pi^+\pi^-$ $(e^+e^- \rightarrow \mu^+\nu_\mu K_L \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^- K^+ \gamma^{gFSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	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	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^+ D^-, \bar{B}^0 \rightarrow \pi^- K^+ K^- D^{*+} \gamma^{gFSR}, \rho^+ \rightarrow \pi^0\pi^+, D^- \rightarrow K_S a_1^-,$ $D^{*+} \rightarrow \pi^+ D^0, K_S \rightarrow \pi^0\pi^0, a_1^- \rightarrow \pi^0\rho^-, D^0 \rightarrow \pi^0\pi^+ K^-, \rho^- \rightarrow \pi^0\pi^-$ $(e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^-\pi^- K^+ K^- K^- \gamma^{gFSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	14	14	1	15
16	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0\pi^0\pi^+\eta\bar{D}^{*-} \gamma^{gFSR}, \bar{B}^0 \rightarrow e^-\bar{\nu}_e D^{*+}, \eta \rightarrow \pi^0\pi^0\pi^0, \bar{D}^{*-} \rightarrow \pi^0 D^-,$ $D^{*+} \rightarrow \pi^0 D^+, D^- \rightarrow \pi^+\pi^-\pi^-\pi^- K^+, D^+ \rightarrow \mu^+\nu_\mu\bar{K}^*, \bar{K}^* \rightarrow \pi^+ K^- \gamma^{gFSR}$ $(e^+e^- \rightarrow e^-\bar{\nu}_e \mu^+\nu_\mu \pi^+\pi^+\pi^+\pi^-\pi^-\pi^- K^+ K^- \gamma^{gFSR} \gamma^{gFSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	15	15	1	16
17	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow e^+\nu_e \bar{D}^{*-} \gamma^{gFSR}, \bar{B}^0 \rightarrow \pi^0\pi^+ K^{*-} D^0 \bar{D}^{*0} \gamma^{gFSR}, \bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, K^{*-} \rightarrow \pi^- \bar{K}^0,$ $D^0 \rightarrow K_L \pi^+\pi^-, \bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, \bar{D}^0 \rightarrow \mu^-\bar{\nu}_\mu K^+, \bar{K}^0 \rightarrow K_S, \bar{D}^0 \rightarrow \pi^+\pi^- K_S K_S, K_S \rightarrow \pi^+\pi^-,$ $K_S \rightarrow \pi^0\pi^0, K_S \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow e^+\nu_e \mu^-\bar{\nu}_\mu K_L \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^- K^+ \gamma^{gFSR} \gamma^{gFSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	16	16	1	17
18	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow K^* D^- D^{*+}, \bar{B}^0 \rightarrow \pi^0 \eta \bar{K}^0 K^- D_s^+, K^* \rightarrow \pi^0 K^0, D^- \rightarrow \pi^-\pi^- K^+,$ $D^{*+} \rightarrow \pi^+ D^0, \eta \rightarrow \gamma\gamma, \bar{K}^0 \rightarrow K_L, D_s^+ \rightarrow \mu^+\nu_\mu\phi, K^0 \rightarrow K_S, D^0 \rightarrow \pi^0\pi^+ K^{*-},$ $\phi \rightarrow K^+ K^-, K_S \rightarrow \pi^0\pi^0, K^{*-} \rightarrow \pi^- \bar{K}^0, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow \mu^+\nu_\mu K_L K_L \pi^+\pi^-\pi^-\pi^- K^+ K^+ K^- K^- \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	17	17	1	18
19	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \bar{D}^{*-} D_s^{*+}, \bar{B}^0 \rightarrow e^-\bar{\nu}_e D^{*+}, \bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, D_s^{*+} \rightarrow D_s^+ \gamma,$ $D^{*+} \rightarrow \pi^+ D^0, \bar{D}^0 \rightarrow \pi^0\pi^+\pi^- K_S, D_s^+ \rightarrow \rho^+ \eta, D^0 \rightarrow \pi^+ \eta K^- \gamma^{gFSR}, K_S \rightarrow \pi^+\pi^-, \rho^+ \rightarrow \pi^0\pi^+,$ $\eta \rightarrow \pi^0\pi^0\pi^0, \eta \rightarrow \pi^0\pi^0\pi^0$ $(e^+e^- \rightarrow e^-\bar{\nu}_e \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^- K^- \gamma^{gFSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	18	18	1	19
20	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+\nu_\mu D_2^-, \bar{B}^0 \rightarrow \pi^0\pi^+\pi^+\pi^-\rho^- \bar{D}^{*0}, D_2^{*-} \rightarrow \pi^- \bar{D}^{*0}, \rho^- \rightarrow \pi^0\pi^-,$ $\bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, \bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, \bar{D}^0 \rightarrow K^+ a_1^-, \bar{D}^0 \rightarrow \pi^0 K_L \pi^+\pi^-, a_1^- \rightarrow \rho^0\pi^-, \rho^0 \rightarrow \pi^+\pi^- \gamma^{gFSR}$ $(e^+e^- \rightarrow \mu^+\nu_\mu K_L \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^- K^+ \gamma^{gFSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	19	19	1	20

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
81	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \tau^+\nu_\tau D_0^{*-}, \bar{B}^0 \rightarrow \pi^0\pi^-\omega K^0\bar{K}^0 K^* D^{*+}, \tau^+ \rightarrow \mu^+\nu_\mu\bar{\nu}_\tau, D_0^{*-} \rightarrow \pi^-\bar{D}^0,$ $\omega \rightarrow \pi^0\pi^+\pi^-, K^0 \rightarrow K_S, \bar{K}^0 \rightarrow K_L, K^* \rightarrow \pi^+K^-, D^{*+} \rightarrow \pi^0 D^+, \bar{D}^0 \rightarrow \pi^+\pi^-\pi^-K^+,$ $K_S \rightarrow \pi^+\pi^-, D^+ \rightarrow \pi^0\pi^+K_S, K_S \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow \mu^+\nu_\mu\bar{\nu}_\tau K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	80	80	1	81
82	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow D^-a_1^+, \bar{B}^0 \rightarrow \pi^+\pi^-D^+D_s^{*-}, D^- \rightarrow \mu^-\bar{\nu}_\mu\omega, a_1^+ \rightarrow \rho^0\pi^+,$ $D^+ \rightarrow \pi^+\pi^+K^-, D_s^{*-} \rightarrow D_s^-\gamma, \omega \rightarrow \pi^0\pi^+\pi^-, \rho^0 \rightarrow \pi^+\pi^-, D_s^- \rightarrow \rho^-\phi, \rho^- \rightarrow \pi^0\pi^-,$ $\phi \rightarrow K^+K^-$ $(e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+K^-K^-\gamma\gamma\gamma\gamma\gamma)$	81	81	1	82
83	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^+\eta\omega D^-, \bar{B}^0 \rightarrow \pi^+D^0D_s^-, \rho^+ \rightarrow \pi^0\pi^+, \eta \rightarrow \pi^+\pi^-\gamma^{FSR},$ $\omega \rightarrow \pi^0\gamma, D^- \rightarrow \mu^-\bar{\nu}_\mu K^*, D^0 \rightarrow K_S K^+K^-, D_s^- \rightarrow \rho^-\phi, K^* \rightarrow \pi^-K^+, K_S \rightarrow \pi^+\pi^-,$ $\rho^- \rightarrow \pi^0\pi^-, \phi \rightarrow \pi^-\rho^+, \rho^+ \rightarrow \pi^0\pi^+$ $(e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+K^+K^-\gamma^{FSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	82	82	1	83
84	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^+K^0D^-, \bar{B}^0 \rightarrow \pi^+\pi^+\pi^-\pi^-\pi^-\pi^+D^{*-}, K^0 \rightarrow K_S, D^- \rightarrow \pi^-K^+K^-,$ $D^{*-} \rightarrow \pi^+D^0, K_S \rightarrow \pi^0\pi^0, D^0 \rightarrow \rho^+K^{*-}, \rho^+ \rightarrow \pi^0\pi^+, K^{*-} \rightarrow \pi^0K^-$ $(e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	83	83	1	84
85	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0\pi^+\rho^-\bar{D}^{*0}, \bar{B}^0 \rightarrow e^-\bar{\nu}_e\eta D^+, \rho^- \rightarrow \pi^0\pi^-, \bar{D}^{*0} \rightarrow \pi^0\bar{D}^0,$ $\eta \rightarrow \pi^0\pi^+\pi^-, D^+ \rightarrow \mu^+\nu_\mu\bar{K}^0, \bar{D}^0 \rightarrow K_S\eta', \bar{K}^0 \rightarrow K_L, K_S \rightarrow \pi^0\pi^0, \eta' \rightarrow \pi^+\pi^-\eta,$ $\eta \rightarrow \pi^0\pi^0\pi^0$ $(e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\nu_\mu K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	84	84	1	85
86	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \eta' D^+\bar{D}^{*-}, \bar{B}^0 \rightarrow \omega\bar{D}^{*-}\bar{n}p, \eta' \rightarrow \pi^0\pi^0\eta, D^+ \rightarrow \pi^+\phi,$ $\bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, \omega \rightarrow \pi^0\pi^+\pi^-, \bar{D}^{*-} \rightarrow \pi^-\bar{D}^0, \eta \rightarrow \pi^0\pi^+\pi^-, \phi \rightarrow K^+K^-, \bar{D}^0 \rightarrow e^-\bar{\nu}_e\rho^+,$ $\bar{D}^0 \rightarrow e^-\bar{\nu}_e K^+\gamma^{FSR}\gamma^{FSR}, \rho^+ \rightarrow \pi^0\pi^+\gamma^{FSR}$ $(e^+e^- \rightarrow e^-\bar{\nu}_e\bar{\nu}_e\bar{\nu}_e\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+K^+K^-\bar{n}p\gamma^{FSR}\gamma^{FSR}\gamma^{FSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	85	85	1	86
87	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^+\pi^-\rho^+D^-, \bar{B}^0 \rightarrow e^-\bar{\nu}_e D_2^{*+}, \rho^+ \rightarrow \pi^0\pi^+, D^- \rightarrow \mu^-\bar{\nu}_\mu K^*,$ $D_2^{*+} \rightarrow \pi^+D^0, K^* \rightarrow \pi^-K^+, D^0 \rightarrow K_L\omega, \omega \rightarrow \pi^0\pi^+\pi^-$ $(e^+e^- \rightarrow e^-\bar{\nu}_e\mu^-\bar{\nu}_\mu K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+\gamma\gamma\gamma)$	86	86	1	87
88	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^0\pi^+\eta D^-, \bar{B}^0 \rightarrow \pi^-\rho^+K^0K^{*-}D^+, \rho^0 \rightarrow \pi^+\pi^-, \eta \rightarrow \gamma\gamma,$ $D^- \rightarrow \pi^-\pi^-K^+, \rho^+ \rightarrow \pi^0\pi^+, K^0 \rightarrow K_L, K^{*-} \rightarrow \pi^0K^-, D^+ \rightarrow \rho^0\pi^+, K_L \rightarrow \mu^+\nu_\mu\pi^-,$ $\rho^0 \rightarrow \pi^+\pi^-$ $(e^+e^- \rightarrow \mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+K^-\gamma\gamma\gamma\gamma\gamma)$	87	87	1	88
89	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^0 p \Sigma_c^-, \bar{B}^0 \rightarrow \mu^-\bar{\nu}_\mu D_0^{*+}, \rho^0 \rightarrow \pi^+\pi^-, \Sigma_c^- \rightarrow \pi^0\Lambda_c^-,$ $D_0^{*+} \rightarrow \pi^+D^0, \bar{\Lambda}_c^- \rightarrow K^+\bar{\Delta}^{++}, D^0 \rightarrow \pi^+\pi^-\bar{K}^*, \bar{\Delta}^{++} \rightarrow \pi^-\bar{p}, \bar{K}^* \rightarrow \pi^+K^-$ $(e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+K^-p\bar{p}\gamma\gamma)$	88	88	1	89
90	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+\nu_\mu\bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^-\pi^-D^+\bar{n}p\gamma^{FSR}, \bar{D}^{*-} \rightarrow \pi^0D^-, D^+ \rightarrow K_S a_1^+,$ $D^- \rightarrow \pi^0\pi^0\pi^-\pi^-K^+, K_S \rightarrow \pi^0\pi^0, a_1^+ \rightarrow \pi^+f_0(600)$ $(e^+e^- \rightarrow \mu^+\nu_\mu\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^+K^+\bar{n}pf_0(600)\gamma^{FSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	89	89	1	90

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
91	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \pi^+ \pi^- \rho^+ D^-, \bar{B}^0 \rightarrow \mu^- \bar{\nu}_\mu D^{*+}, \rho^+ \rightarrow \pi^0 \pi^+, D^- \rightarrow \mu^- \bar{\nu}_\mu \pi^- K^+,$ $D^{*+} \rightarrow \pi^0 D^+, D^+ \rightarrow \pi^+ \pi^+ K^-$ $(e^+e^- \rightarrow \mu^- \mu^- \bar{\nu}_\mu \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma)$	90	90	1	91
92	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^- K^{*+} J/\psi, \bar{B}^0 \rightarrow \pi^0 \pi^+ K^- \eta_c(2S), K^{*+} \rightarrow \pi^0 K^+, J/\psi \rightarrow e^+e^- \gamma^{FSR},$ $\pi^0 \rightarrow e^+e^- \gamma^{FSR}, \eta_c(2S) \rightarrow \eta \Sigma^+ \bar{\Sigma}^-, \eta \rightarrow \pi^0 \pi^0 \pi^0, \Sigma^+ \rightarrow \pi^+ n, \bar{\Sigma}^- \rightarrow \pi^0 \bar{p}$ $(e^+e^- \rightarrow e^+e^- e^- e^- \pi^+ \pi^+ \pi^- K^+ K^- n \bar{p} \gamma^{FSR} \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	91	91	1	92
93	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, \bar{B}^0 \rightarrow \bar{K}^0 \psi', B^0 \rightarrow \pi^- \rho^+ \rho^- D^+, \bar{K}^0 \rightarrow K_S, \psi' \rightarrow \pi^0 \pi^0 J/\psi,$ $\rho^+ \rightarrow \pi^0 \pi^+, \rho^- \rightarrow \pi^0 \pi^-, D^+ \rightarrow \bar{K}^* a_1^+, K_S \rightarrow \pi^+ \pi^-, J/\psi \rightarrow \mu^+ \mu^-, \bar{K}^* \rightarrow \pi^+ K^-,$ $a_1^+ \rightarrow \pi^+ f_0(600)$ $(e^+e^- \rightarrow \mu^+ \mu^- \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- f_0(600) \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	92	92	1	93
94	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^0 \rho^+ \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^- K^0 D^+, \rho^0 \rightarrow \pi^+ \pi^-, \rho^+ \rightarrow \pi^0 \pi^+ \gamma^{FSR},$ $\bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, K^0 \rightarrow K_L, D^+ \rightarrow K_L a_1^+, \bar{D}^0 \rightarrow \pi^- K^+, a_1^+ \rightarrow \pi^+ f_0(600)$ $(e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ f_0(600) \gamma^{FSR} \gamma \gamma)$	93	93	1	94
95	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^+ \omega D^-, \bar{B}^0 \rightarrow \pi^0 \omega K^0 K^- D^+, \rho^+ \rightarrow \pi^0 \pi^+, \omega \rightarrow \pi^0 \pi^+ \pi^-,$ $D^- \rightarrow \pi^- \pi^- K^+, \pi^0 \rightarrow e^+e^- \gamma^{FSR}, \omega \rightarrow \pi^0 \pi^+ \pi^-, K^0 \rightarrow K_S, D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^*, K_S \rightarrow \pi^+ \pi^-,$ $\bar{K}^* \rightarrow \pi^+ K^-$ $(e^+e^- \rightarrow e^+e^- \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- K^- \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma)$	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	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow K^{*+} \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^0 \pi^- D^{*+} \Delta^+ \Delta^+, K^{*+} \rightarrow \pi^+ K^0, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0,$ $D^{*+} \rightarrow \pi^+ D^0, \Delta^+ \rightarrow \pi^+ n, \bar{\Delta}^+ \rightarrow \pi^0 \bar{p}, K^0 \rightarrow K_L, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+, D^0 \rightarrow \pi^+ \pi^- K_S,$ $K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ n \bar{p} \gamma \gamma \gamma \gamma \gamma)$	96	96	1	97
98	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow D_2^{*-} D_s^{*+}, \bar{B}^0 \rightarrow \pi^+ \pi^- D^+ D_s^-, D_2^{*-} \rightarrow \pi^0 \bar{D}^{*-}, D_s^{*+} \rightarrow D_s^+ \gamma,$ $D^+ \rightarrow \pi^+ \bar{K}_1'^0, D_s^- \rightarrow e^- \bar{\nu}_e \eta', \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D_s^+ \rightarrow \pi^+ \phi, \bar{K}_1'^0 \rightarrow \pi^+ K^{*-}, \eta' \rightarrow \pi^0 \pi^0 \eta,$ $\bar{D}^0 \rightarrow \pi^- \omega K^+, \phi \rightarrow \pi^- \rho^+, K^{*-} \rightarrow \pi^- \bar{K}^0, \eta \rightarrow \pi^0 \pi^+ \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, \rho^+ \rightarrow \pi^0 \pi^+,$ $\bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^0 \pi^0$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	97	97	1	98
99	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow K_L \eta_c, \bar{B}^0 \rightarrow \pi^- \pi^- \rho^+ D^{*+}, \eta_c \rightarrow \pi^0 K^0 \bar{K}^0 K^*, \rho^+ \rightarrow \pi^0 \pi^+,$ $D^{*+} \rightarrow \pi^0 D^+, K^0 \rightarrow K_S, \bar{K}^0 \rightarrow K_L, \bar{K}^0 \rightarrow K_S, K^* \rightarrow \pi^- K^+, D^+ \rightarrow \pi^0 \pi^+ K_S,$ $K_S \rightarrow \pi^0 \pi^0, K_S \rightarrow \pi^+ \pi^-, K_S \rightarrow \pi^+ \pi^- \gamma^{FSR}$ $(e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	98	98	1	99
100	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \pi^0 \rho^0 \pi^+ \bar{D}^{*-}, \bar{B}^0 \rightarrow K^* K^- D^+, \rho^0 \rightarrow \pi^+ \pi^- \gamma^{FSR}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0,$ $K^* \rightarrow \pi^0 K^0, D^+ \rightarrow \pi^+ \pi^+ K^-, \bar{D}^0 \rightarrow \pi^- \rho^+, K^0 \rightarrow K_S, \rho^+ \rightarrow \pi^0 \pi^+, K_S \rightarrow \pi^0 \pi^0$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- K^- \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	99	99	1	100

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
112	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow e^+\nu_e D_2^{*-}, \bar{B}^0 \rightarrow \rho^- D^{*+}, D_2^{*-} \rightarrow \pi^- \bar{D}^0, \rho^- \rightarrow \pi^0 \pi^-,$ $D^{*+} \rightarrow \pi^+ D^0, \bar{D}^0 \rightarrow \pi^0 K_1^0, D^0 \rightarrow K^- a_1^+, K_1^0 \rightarrow \omega K^0, a_1^+ \rightarrow \pi^0 \rho^+, \omega \rightarrow \pi^0 \pi^+ \pi^-,$ $K^0 \rightarrow K_S, \rho^+ \rightarrow \pi^0 \pi^+, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^+\nu_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	111	111	1	112
113	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow e^+\nu_e D^- \gamma^{FSR}, \bar{B}^0 \rightarrow D_s^{*+} \Delta^+ \Lambda, D^- \rightarrow \pi^- \pi^- K^+, D_s^{*+} \rightarrow D_s^+ \gamma,$ $\Delta^+ \rightarrow \pi^- \bar{n}, \Lambda \rightarrow \pi^0 n, D_s^+ \rightarrow \pi^+ \eta, \eta \rightarrow \pi^0 \pi^+ \pi^-$ $(e^+e^- \rightarrow e^+\nu_e \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ n \bar{n} \gamma^{FSR} \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma)$	112	112	1	113
114	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0 \pi^+ \pi^+ \pi^- \bar{D}^{*-} \gamma^{FSR}, \bar{B}^0 \rightarrow K^- D^{*+} \bar{D}^{*0}, \bar{D}^{*-} \rightarrow \pi^0 D^-, D^{*+} \rightarrow \pi^+ D^0,$ $\bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, D^- \rightarrow K_L \pi^+ \pi^- K^- \gamma^{FSR}, D^0 \rightarrow \pi^- \rho^+, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+, \rho^+ \rightarrow \pi^0 \pi^+$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- K^- \gamma^{FSR} \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	113	113	1	114
115	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \bar{D}^{*-} D_s^{*+}, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+} \gamma^{FSR}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D_s^{*+} \rightarrow \pi^0 D_s^{*+},$ $D^{*+} \rightarrow \pi^+ D^0, \bar{D}^0 \rightarrow \pi^- \eta K^+, D_s^{*+} \rightarrow D_s^+ \gamma, D^0 \rightarrow K_L K^+ K^-, \eta \rightarrow \pi^0 \pi^+ \pi^- \gamma^{FSR}, D_s^+ \rightarrow \pi^0 \pi^+ \pi^+ \pi^- \pi^-$ $(e^+e^- \rightarrow e^- \bar{\nu}_e K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- \gamma^{FSR} \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma)$	114	114	1	115
116	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow D^{*+} D_s^{*-}, \bar{B}^0 \rightarrow \mu^- \bar{\nu}_\mu D_1^{*+}, D^{*+} \rightarrow \pi^+ D^0, D_s^{*-} \rightarrow D_s^- \gamma,$ $D_1^{*+} \rightarrow \pi^0 D^{*+}, D^0 \rightarrow \pi^0 \pi^+ K^-, D_s^- \rightarrow \rho^- \eta, D^{*+} \rightarrow \pi^+ D^0, \rho^- \rightarrow \pi^0 \pi^-, \eta \rightarrow \pi^0 \pi^+ \pi^-,$ $D^0 \rightarrow \pi^0 \pi^+ \pi^- K_S, K_S \rightarrow \pi^+ \pi^- \gamma^{FSR}$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	115	115	1	116
117	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0 \pi^+ \eta \bar{K}^0 K^* D^-, \bar{B}^0 \rightarrow D^{*+} D_s^{*-}, \eta \rightarrow \pi^+ \pi^- \gamma^{FSR}, \bar{K}^0 \rightarrow K_L,$ $K^* \rightarrow \pi^- K^+, D^- \rightarrow \pi^0 \pi^- K^* \gamma^{FSR}, D^{*+} \rightarrow \pi^+ D^0, D_s^{*-} \rightarrow D_s^- \gamma, K^* \rightarrow \pi^- K^+, D^0 \rightarrow e^+ \nu_e K^{*-},$ $D_s^- \rightarrow \rho^- \eta', K^{*-} \rightarrow \pi^0 K^-, \rho^- \rightarrow \pi^0 \pi^-, \eta' \rightarrow \pi^+ \pi^- \eta, \eta \rightarrow \gamma \gamma$ $(e^+e^- \rightarrow e^+\nu_e K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- \gamma^{FSR} \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	116	116	1	117
118	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^- \eta \bar{K}^0 K^+ \bar{D}^{*0}, \bar{B}^0 \rightarrow \pi^- \eta D^{*+} \gamma^{FSR}, \rho^- \rightarrow \pi^0 \pi^-, \eta \rightarrow \pi^0 \pi^0 \pi^0,$ $\bar{K}^0 \rightarrow K_S, \bar{D}^{*0} \rightarrow \bar{D}^0 \gamma, \eta \rightarrow \pi^0 \pi^0 \pi^0, D^{*+} \rightarrow \pi^+ D^0, K_S \rightarrow \pi^0 \pi^0, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+,$ $D^0 \rightarrow e^+ \nu_e K^- \gamma^{FSR}$ $(e^+e^- \rightarrow e^+\nu_e \pi^+ \pi^- \pi^- \pi^- K^+ K^+ K^- \gamma^{FSR} \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	117	117	1	118
119	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0 \pi^0 \bar{D}^0, \bar{B}^0 \rightarrow \pi^0 \rho^+ \omega D^-, \bar{D}^0 \rightarrow \rho^0 \pi^- K^+, \rho^0 \rightarrow \pi^+ \pi^-,$ $\rho^+ \rightarrow \pi^0 \pi^+, \omega \rightarrow \pi^0 \pi^+ \pi^-, D^- \rightarrow e^- \bar{\nu}_e \pi^- K^+ \gamma^{FSR}, \rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ \gamma^{FSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	118	118	1	119
120	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow K^0 D^{*+} \bar{D}^{*-}, \bar{B}^0 \rightarrow \mu^- \bar{\nu}_\mu D^{*+}, K^0 \rightarrow K_S, D^{*+} \rightarrow \pi^0 D^+,$ $\bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D^{*+} \rightarrow \pi^+ D^0, K_S \rightarrow \pi^+ \pi^-, D^+ \rightarrow \pi^+ \pi^+ K^-, \bar{D}^0 \rightarrow \pi^- K_S K^+, D^0 \rightarrow K_L \pi^- K^+,$ $K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- \gamma \gamma)$	119	119	1	120
121	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, \bar{B}^0 \rightarrow e^- \bar{\nu}_e D^{*+}, B^0 \rightarrow \mu^- \bar{\nu}_\mu D^{*+}, D^{*+} \rightarrow \pi^+ D^0, D^{*+} \rightarrow \pi^+ D^0,$ $D^0 \rightarrow \pi^0 \pi^+ K^-, D^0 \rightarrow \rho^+ K^{*-}, \rho^+ \rightarrow \pi^0 \pi^+, K^{*-} \rightarrow \pi^- \bar{K}^0 \gamma^{FSR}, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \mu^- \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- K^- \gamma^{FSR} \gamma \gamma \gamma)$	120	120	1	121

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
132	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow \bar{B}^0 \bar{B}^0, \bar{B}^0 \rightarrow \rho^- D^+, \bar{B}^0 \rightarrow \rho^0 \pi^- \omega D^+, \rho^- \rightarrow \pi^0 \pi^-, D^+ \rightarrow e^+ \nu_e \pi^+ K^- \gamma^{gFSR},$ $\rho^0 \rightarrow \pi^+ \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, D^+ \rightarrow \pi^+ \pi^+ K^-$ $(e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- K^- \gamma^{gFSR} \gamma \gamma \gamma)$	131	131	1	132
133	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \bar{D}^{*-} D_s^+, B^0 \rightarrow e^+ \nu_e D_2^{*-}, \bar{D}^{*-} \rightarrow \pi^0 D^-, D_s^+ \rightarrow \mu^+ \nu_\mu \phi,$ $D_2^{*-} \rightarrow \pi^- \bar{D}^{*0}, D^- \rightarrow e^- \bar{\nu}_e \pi^- K^+ \gamma^{gFSR}, \phi \rightarrow K^+ K^-, \bar{D}^{*0} \rightarrow \bar{D}^0 \gamma, \bar{D}^0 \rightarrow K^+ a_1^-, a_1^- \rightarrow \rho^0 \pi^-,$ $\rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^+ \nu_e \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^+ K^- \gamma^{gFSR} \gamma \gamma \gamma)$	132	132	1	133
134	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^+ \pi^- \rho^+ \bar{D}^{*-}, \bar{B}^0 \rightarrow D_2^{*+} D_s^-, \rho^+ \rightarrow \pi^0 \pi^+ \gamma^{gFSR}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0,$ $D_2^{*+} \rightarrow \pi^+ D^0, D_s^- \rightarrow \tau^- \bar{\nu}_\tau, \bar{D}^0 \rightarrow \pi^0 K_L \pi^+ \pi^-, D^0 \rightarrow \rho^+ K^{*-}, \tau^- \rightarrow \nu_\tau \pi^0 \pi^- \gamma^{gFSR}, \rho^+ \rightarrow \pi^0 \pi^+,$ $K^{*-} \rightarrow \pi^- \bar{K}^0 \gamma^{gFSR}, \bar{K}^0 \rightarrow K_L$ $(e^+e^- \rightarrow \nu_\tau \bar{\nu}_\tau K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma)$	133	133	1	134
135	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \omega K^+ D_s^{*-}, \bar{B}^0 \rightarrow \mu^- \bar{\nu}_\mu D^{*+}, \omega \rightarrow \pi^0 \pi^+ \pi^-, D_s^{*-} \rightarrow D_s^- \gamma,$ $D^{*+} \rightarrow \pi^+ D^0, D_s^- \rightarrow \rho^- \eta', D^0 \rightarrow \pi^+ \pi^+ \pi^- K^-, \rho^- \rightarrow \pi^0 \pi^-, \eta' \rightarrow \rho^0 \gamma, \rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma)$	134	134	1	135
136	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow D_s^{*+} D_1^-, \bar{B}^0 \rightarrow \rho^0 \pi^- D^{*+}, D_s^{*+} \rightarrow D_s^+ \gamma, D_1^- \rightarrow \pi^- \bar{D}^{*0},$ $\rho^0 \rightarrow \pi^+ \pi^-, D^{*+} \rightarrow \pi^+ D^0, D_s^+ \rightarrow K_L \pi^+ \pi^- K^+, \bar{D}^{*0} \rightarrow \bar{D}^0 \gamma, D^0 \rightarrow K^- a_1^+, \bar{D}^0 \rightarrow \pi^0 \pi^+ \pi^- K^*,$ $a_1^+ \rightarrow \pi^+ f_0(600), K^* \rightarrow \pi^- K^+$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- f_0(600) \gamma \gamma \gamma)$	135	135	1	136
137	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^0 \pi^- \rho^+ \rho^+ K^0 D^-, \bar{B}^0 \rightarrow \pi^0 \rho^0 \pi^- \eta \omega D^+, \rho^0 \rightarrow \pi^+ \pi^-, \rho^+ \rightarrow \pi^0 \pi^+,$ $\rho^+ \rightarrow \pi^0 \pi^+, K^0 \rightarrow K_S, D^- \rightarrow K_L \pi^+ \pi^- K^-, \pi^0 \rightarrow e^+ e^- \gamma^{gFSR}, \rho^0 \rightarrow \pi^+ \pi^-, \eta \rightarrow \pi^+ \pi^- \gamma^{gFSR},$ $\omega \rightarrow \pi^0 \pi^+ \pi^-, D^+ \rightarrow K_L a_1^+, K_S \rightarrow \pi^+ \pi^-, a_1^+ \rightarrow \pi^0 \rho^+, \rho^+ \rightarrow \pi^0 \pi^+$ $(e^+e^- \rightarrow e^+ e^- K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^- \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	136	136	1	137
138	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \pi^0 K^+ D_s^{*-}, \bar{B}^0 \rightarrow D^{*0} n \bar{n}, D_s^{*-} \rightarrow D_s^- \gamma, D^{*0} \rightarrow \pi^0 D^0,$ $D_s^- \rightarrow \rho^- \eta', D^0 \rightarrow \pi^+ K^-, \rho^- \rightarrow \pi^0 \pi^-, \eta' \rightarrow \rho^0 \gamma, \rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^- \pi^- K^+ K^- n \bar{n} \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	137	137	1	138
139	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow K^+ \Delta^+ \bar{\Sigma}_c^{*-}, \bar{B}^0 \rightarrow e^+ \nu_e D^- \gamma^{gFSR}, \Delta^+ \rightarrow \pi^0 p, \bar{\Sigma}_c^{*-} \rightarrow \pi^- \bar{\Lambda}_c^-,$ $D^- \rightarrow K_L \pi^+ \pi^- K^-, \bar{\Lambda}_c^- \rightarrow \pi^0 \pi^- \bar{\Delta}^0, \bar{\Delta}^0 \rightarrow \pi^+ \bar{p}$ $(e^+e^- \rightarrow e^+ \nu_e K_L \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- p \bar{p} \gamma^{gFSR} \gamma \gamma \gamma)$	138	138	1	139
140	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^+ \rho^+ \rho^- \eta \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^0 \pi^+ \pi^+ \pi^- \pi^- \bar{K}^0 K^+ K^+ K^{*-}, \rho^+ \rightarrow \pi^0 \pi^+, \rho^+ \rightarrow \pi^0 \pi^+,$ $\rho^- \rightarrow \pi^0 \pi^-, \eta \rightarrow \pi^0 \pi^+ \pi^-, \bar{D}^{*-} \rightarrow \pi^0 D^-, \bar{K}^0 \rightarrow K_S, K^* \rightarrow \pi^- K^+, K^{*-} \rightarrow \pi^- \bar{K}^0,$ $D^- \rightarrow e^- \bar{\nu}_e K^*, K_S \rightarrow \pi^+ \pi^-, \bar{K}^0 \rightarrow K_S, K^* \rightarrow \pi^- K^+, K_S \rightarrow \pi^+ \pi^- \gamma^{gFSR}$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^+ \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	139	139	1	140
141	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \mu^+ \nu_\mu \bar{D}^{*-} \gamma^{gFSR} \gamma^{gFSR}, \bar{B}^0 \rightarrow \pi^0 \rho^0 \pi^- D^+, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, \rho^0 \rightarrow \pi^+ \pi^- \gamma^{gFSR} \gamma^{gFSR},$ $D^+ \rightarrow \pi^0 \pi^+ \bar{K}^*, \bar{D}^0 \rightarrow e^- \bar{\nu}_e K^+ \gamma^{gFSR}, \bar{K}^* \rightarrow \pi^0 \bar{K}^0, \bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^+ \pi^- \gamma^{gFSR}$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma)$	140	140	1	141

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
163	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^+ \omega D^{*-}, \bar{B}^0 \rightarrow D^{*+} D_s^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0,$ $D^{*+} \rightarrow \pi^0 D^+, D_s^- \rightarrow \mu^- \bar{\nu}_\mu \eta', \bar{D}^0 \rightarrow \pi^0 \pi^+ \pi^- K_S, D^+ \rightarrow \pi^+ \pi^+ K^-, \eta' \rightarrow \rho^0 \gamma, K_S \rightarrow \pi^+ \pi^-,$ $\rho^0 \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma)$	162	162	1	163
164	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \Sigma^0 \Xi_c^0, \bar{B}^0 \rightarrow D^+ D_{s1}^-, \Sigma^0 \rightarrow \Lambda \gamma, \Xi_c^0 \rightarrow \pi^- K^+ \Sigma^0,$ $D^+ \rightarrow \mu^+ \nu_\mu \bar{K}^*, D_{s1}^- \rightarrow \pi^0 D_s^{*-}, \Lambda \rightarrow \pi^- p, \bar{\Sigma}^0 \rightarrow \bar{\Lambda} \gamma, \bar{K}^* \rightarrow \pi^+ K^-, D_s^{*-} \rightarrow D_s^- \gamma,$ $\bar{\Lambda} \rightarrow \pi^+ \bar{p}, D_s^- \rightarrow \rho^- \eta', \rho^- \rightarrow \pi^0 \pi^-, \eta' \rightarrow \pi^+ \pi^- \eta, \eta \rightarrow \gamma \gamma$ $(e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- p \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	163	163	1	164
165	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^0 \eta \omega D^{*-}, \bar{B}^0 \rightarrow \pi^0 \rho^- \omega D^{*+}, \rho^0 \rightarrow \pi^+ \pi^-, \eta \rightarrow \pi^0 \pi^+ \pi^-,$ $\omega \rightarrow \pi^0 \pi^+ \pi^-, \bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, \rho^- \rightarrow \pi^0 \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, D^{*+} \rightarrow \pi^+ D^0, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+,$ $D^0 \rightarrow e^+ \nu_e K^{*-} \gamma^{gFSR} \gamma^{gFSR}, K^{*-} \rightarrow \pi^- \bar{K}^0, \bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	164	164	1	165
166	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \bar{D}^{*-} \Delta^- \Delta^0, \bar{B}^0 \rightarrow \rho^- D^+, \bar{D}^{*-} \rightarrow \pi^0 D^-, \Delta^- \rightarrow \pi^+ \bar{n},$ $\Delta^0 \rightarrow \pi^0 n, \rho^- \rightarrow \pi^0 \pi^-, D^+ \rightarrow \mu^+ \nu_\mu \pi^+ K^-, D^- \rightarrow \mu^- \bar{\nu}_\mu K^0, K^0 \rightarrow K_L$ $(e^+e^- \rightarrow \mu^+ \mu^- \nu_\mu \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^- K^- n \bar{n} \gamma \gamma \gamma \gamma \gamma)$	165	165	1	166
167	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \rho^- p \Sigma_c^0, \bar{B}^0 \rightarrow \tau^- \bar{\nu}_\tau D^{*+}, \rho^- \rightarrow \pi^0 \pi^-, \bar{\Sigma}_c^0 \rightarrow \pi^+ \bar{\Lambda}_c^-,$ $\tau^- \rightarrow \nu_\tau \pi^0 \pi^- \gamma^{gFSR}, D^{*+} \rightarrow \pi^+ D^0, \bar{\Lambda}_c^- \rightarrow \pi^- \eta \bar{\Lambda}, D^0 \rightarrow K_S \phi, \eta \rightarrow e^+ e^- \gamma^{gFSR} \gamma^{gFSR}, \bar{\Lambda} \rightarrow \pi^0 \bar{n},$ $K_S \rightarrow \pi^+ \pi^-, \phi \rightarrow K^+ K^-$ $(e^+e^- \rightarrow e^+ e^- \nu_\tau \bar{\nu}_\tau \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \bar{n} p \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma)$	166	166	1	167
168	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^+ K^{*-} J/\psi, \bar{B}^0 \rightarrow K^0 D^{*0} \bar{D}^{*0}, K^{*-} \rightarrow \pi^- K^0, J/\psi \rightarrow K^* \bar{K}^* \gamma,$ $\bar{K}^0 \rightarrow K_L, D^{*0} \rightarrow D^0 \gamma, \bar{D}^{*0} \rightarrow \bar{D}^0 \gamma, \bar{K}^0 \rightarrow K_L, K^* \rightarrow \pi^- K^+, \bar{K}^* \rightarrow \pi^+ K^-,$ $D^0 \rightarrow \pi^0 \pi^+ K^-, \bar{D}^0 \rightarrow \pi^0 \pi^+ \pi^- K^*, K^* \rightarrow \pi^- K^+$ $(e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma)$	167	167	1	168
169	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^- K^{*+} D^0 \bar{D}^{*0}, \bar{B}^0 \rightarrow \pi^0 \pi^+ \pi^- \pi^- D^{*+}, K^{*+} \rightarrow \pi^+ K^0, D^0 \rightarrow K^- a_1^+,$ $\bar{D}^{*0} \rightarrow \pi^0 \bar{D}^0, D^{*+} \rightarrow \pi^+ D^0, K^0 \rightarrow K_S, a_1^+ \rightarrow \pi^+ \pi^+ \pi^-, \bar{D}^0 \rightarrow \rho^- K^{*+}, D^0 \rightarrow \pi^+ K^- \gamma^{gFSR},$ $K_S \rightarrow \pi^+ \pi^- \gamma^{gFSR}, \rho^- \rightarrow \pi^0 \pi^-, K^{*+} \rightarrow \pi^0 K^+$ $(e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- K^- \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma)$	168	168	1	169
170	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \mu^+ \nu_\mu D^-, \bar{B}^0 \rightarrow \pi^+ \pi^+ \pi^- \pi^- \pi^- \eta K^+ K^+ D_s^{*-}, D^- \rightarrow \mu^- \bar{\nu}_\mu K^0, \eta \rightarrow \pi^0 \pi^+ \pi^-,$ $D_s^{*-} \rightarrow D_s^- \gamma, K^0 \rightarrow K_L, D_s^- \rightarrow \pi^0 \pi^+ \pi^+ \pi^- \pi^- \pi^-$ $(e^+e^- \rightarrow \mu^+ \mu^- \nu_\mu \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ \gamma \gamma \gamma \gamma \gamma)$	169	169	1	170
171	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \pi^0 \bar{K}^0 D^- \Delta^0 \bar{\Sigma}^+, \bar{B}^0 \rightarrow \pi^0 \pi^+ \pi^+ \pi^- \rho^- \bar{D}^0, \bar{K}^0 \rightarrow K_L, D^- \rightarrow \pi^0 \pi^- K_S,$ $\Delta^0 \rightarrow \pi^0 n, \bar{\Sigma}^+ \rightarrow \pi^+ \bar{n}, \rho^- \rightarrow \pi^0 \pi^-, \bar{D}^0 \rightarrow \pi^- \rho^+, K_S \rightarrow \pi^0 \pi^0, \rho^+ \rightarrow \pi^0 \pi^+$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- n \bar{n} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	170	170	1	171
172	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0 \bar{B}^0, B^0 \rightarrow \mu^+ \nu_\mu \bar{D}^{*-}, \bar{B}^0 \rightarrow \pi^+ \rho^- \rho^- \omega D^{*+}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, \rho^- \rightarrow \pi^0 \pi^-,$ $\rho^- \rightarrow \pi^0 \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-, D^{*+} \rightarrow \pi^0 D^+, \bar{D}^0 \rightarrow \pi^0 \pi^+ \pi^- K_S, D^+ \rightarrow K_S K^{*+}, K_S \rightarrow \pi^+ \pi^-,$ $K_S \rightarrow \pi^0 \pi^0, K^{*+} \rightarrow \pi^0 K^+$ $(e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma)$	171	171	1	172

index	event tree (event initial-final states)	iEvtTr	iEvtIFSts	nEvts	nCmltEvts
194	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow e^+\nu_e D^- \gamma^{FSR} \gamma^{FSR} \gamma^{FSR} \gamma^{FSR} \gamma^{FSR}, \bar{B}^0 \rightarrow K^{*-} D^{*+} \bar{D}^0, D^- \rightarrow K^* K^-, K^{*-} \rightarrow \pi^- \bar{K}^0,$ $D^{*+} \rightarrow \pi^+ D^0, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+, K^* \rightarrow \pi^- K^+, \bar{K}^0 \rightarrow K_L, D^0 \rightarrow \pi^+ \pi^-, K_L \rightarrow \pi^0 \pi^0 \pi^0$ $(e^+e^- \rightarrow e^+\nu_e \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- \gamma^{FSR} \gamma^{FSR} \gamma^{FSR} \gamma^{FSR} \gamma^{FSR} \gamma^{FSR} \gamma\gamma\gamma\gamma\gamma\gamma)$	193	193	1	194
195	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow J/\psi K_1^0, \bar{B}^0 \rightarrow \pi^0 D^+ D_s^{*-}, J/\psi \rightarrow \pi^0 \eta \eta, K_1^0 \rightarrow \pi^+ \pi^- K^0,$ $D^+ \rightarrow e^+\nu_e \bar{K}^0 \gamma^{FSR}, D_s^{*-} \rightarrow D_s^- \gamma, \eta \rightarrow \gamma\gamma, \eta \rightarrow \gamma\gamma, K^0 \rightarrow K_S, \bar{K}^0 \rightarrow K_S,$ $D_s^- \rightarrow \rho^- \eta, K_S \rightarrow \pi^0 \pi^0, K_S \rightarrow \pi^+ \pi^-, \rho^- \rightarrow \pi^0 \pi^-, \eta \rightarrow \pi^0 \pi^0 \pi^0$ $(e^+e^- \rightarrow e^+\nu_e \pi^+ \pi^+ \pi^- \pi^- \pi^- \gamma^{FSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	194	194	1	195
196	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow K^* D^+ D^-, \bar{B}^0 \rightarrow \bar{D}^{*-} \bar{\Delta}^- \Delta^0, K^* \rightarrow \pi^0 K^0, D^+ \rightarrow \pi^+ \bar{K}_1^{'0},$ $D^- \rightarrow e^- \bar{\nu}_e K_2^{*0}, \bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, \bar{\Delta}^- \rightarrow \pi^+ \bar{n}, \Delta^0 \rightarrow \pi^0 n, K^0 \rightarrow K_L, \bar{K}_1^{'0} \rightarrow \pi^+ K^{*-},$ $K_2^{*0} \rightarrow \pi^0 K^0, \bar{D}^0 \rightarrow e^- \bar{\nu}_e \pi^+ K^0 \gamma^{FSR}, K^{*-} \rightarrow \pi^0 K^-, K^0 \rightarrow K_S, K^0 \rightarrow K_L, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^- e^- \bar{\nu}_e \bar{\nu}_e K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- n \bar{n} \gamma^{FSR} \gamma\gamma\gamma\gamma\gamma\gamma)$	195	195	1	196
197	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^0 \pi^- \eta \bar{D}^{*0} D_s^{*+}, \bar{B}^0 \rightarrow D^{*0} \Delta^0 \Delta^0, \eta \rightarrow \gamma\gamma, \bar{D}^{*0} \rightarrow \bar{D}^0 \gamma,$ $D_s^{*+} \rightarrow D_s^+ \gamma, D^{*0} \rightarrow \pi^0 D^0, \Delta^0 \rightarrow \pi^0 n, \bar{\Delta}^0 \rightarrow \pi^0 \bar{n}, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+, D_s^+ \rightarrow \mu^+ \nu_\mu,$ $D^0 \rightarrow e^+ \nu_e \pi^- \bar{K}^0 \gamma^{FSR}, \pi^0 \rightarrow e^+ e^- \gamma^{FSR}, \bar{K}^0 \rightarrow K_S, K_S \rightarrow \pi^0 \pi^0$ $(e^+e^- \rightarrow e^+ e^+ e^- \nu_e \mu^+ \nu_\mu \pi^- \pi^- \pi^- K^+ n \bar{n} \gamma^{FSR} \gamma^{FSR} \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	196	196	1	197
198	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \rho^0 \pi^+ \omega \bar{D}^{*-}, \bar{B}^0 \rightarrow D^0 n \bar{n}, \rho^0 \rightarrow \pi^+ \pi^-, \omega \rightarrow \pi^0 \pi^+ \pi^-,$ $\bar{D}^{*-} \rightarrow \pi^- \bar{D}^0, D^0 \rightarrow K_L \eta, \bar{D}^0 \rightarrow \pi^0 \pi^- K^+, \eta \rightarrow \gamma\gamma$ $(e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ n \bar{n} \gamma\gamma\gamma\gamma\gamma)$	197	197	1	198
199	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \mu^+ \nu_\mu \bar{D}^{*-}, \bar{B}^0 \rightarrow \rho^0 \pi^+ \pi^- \rho^+ \omega \bar{D}^{*-}, \bar{D}^{*-} \rightarrow \pi^0 D^-, \rho^0 \rightarrow \pi^+ \pi^-,$ $\rho^+ \rightarrow \pi^0 \pi^+, \omega \rightarrow \pi^0 \pi^+ \pi^-, \bar{D}^{*-} \rightarrow \pi^0 D^-, D^- \rightarrow e^- \bar{\nu}_e \pi^- K^+, D^- \rightarrow \pi^0 \pi^- K^*, K^* \rightarrow \pi^- K^+$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ \gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma)$	198	198	1	199
200	$e^+e^- \rightarrow \Upsilon(4S), \Upsilon(4S) \rightarrow B^0\bar{B}^0, B^0 \rightarrow \pi^+ \pi^+ \pi^+ \pi^- \pi^- D^-, \bar{B}^0 \rightarrow e^- \bar{\nu}_e \pi^+ D^0, D^- \rightarrow \mu^- \bar{\nu}_\mu K_1^0, D^0 \rightarrow \pi^+ \pi^- K_S,$ $K_1^0 \rightarrow \pi^+ \pi^- K^0, K_S \rightarrow \pi^+ \pi^-, K^0 \rightarrow K_S, K_S \rightarrow \pi^+ \pi^-$ $(e^+e^- \rightarrow e^- \bar{\nu}_e \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^-)$	199	199	1	200

Table 2: Event initial-final states.

[illegible]

index	event initial-final states	iEvtIFSts	nEvts	nCmltEvts
41	$e^+e^- \rightarrow \mu^- \mu^- \bar{\nu}_\mu \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ K^+ K^- K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	40	1	41
42	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma$	41	1	42
43	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- K^- n \bar{p} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	42	1	43
44	$e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	43	1	44
45	$e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ \gamma \gamma \gamma \gamma \gamma$	44	1	45
46	$e^+e^- \rightarrow e^+ e^- \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	45	1	46
47	$e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	46	1	47
48	$e^+e^- \rightarrow \mu^- \mu^- \bar{\nu}_\mu \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma$	47	1	48
49	$e^+e^- \rightarrow e^+ \nu_e \mu^- \mu^- \bar{\nu}_\mu \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	48	1	49
50	$e^+e^- \rightarrow e^+ e^- \mu^- \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	49	1	50
51	$e^+e^- \rightarrow e^+ \nu_e \mu^- \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ f_0(600) \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma$	50	1	51
52	$e^+e^- \rightarrow e^- \bar{\nu}_e K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma$	51	1	52
53	$e^+e^- \rightarrow e^+ \nu_e K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	52	1	53
54	$e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	53	1	54
55	$e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	54	1	55
56	$e^+e^- \rightarrow \mu^+ \mu^- \nu_\mu \nu_\mu K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- n \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	55	1	56
57	$e^+e^- \rightarrow e^+ \nu_e K_L \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \bar{n} p \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	56	1	57
58	$e^+e^- \rightarrow \mu^+ \mu^- \nu_\mu \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	57	1	58
59	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- n \bar{p} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	58	1	59
60	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	59	1	60
61	$e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	60	1	61
62	$e^+e^- \rightarrow e^+ \nu_e K_L K_L \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ f_0(600) \gamma^{gFSR} \gamma \gamma \gamma \gamma$	61	1	62
63	$e^+e^- \rightarrow e^- \bar{\nu}_e \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ p \bar{p} \gamma^{gFSR} \gamma \gamma \gamma \gamma$	62	1	63
64	$e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	63	1	64
65	$e^+e^- \rightarrow e^+ \nu_e K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	64	1	65
66	$e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- p \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	65	1	66
67	$e^+e^- \rightarrow \mu^+ \nu_\mu \nu_\tau \bar{\nu}_\tau \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma$	66	1	67
68	$e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	67	1	68
69	$e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma$	68	1	69
70	$e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma$	69	1	70
71	$e^+e^- \rightarrow e^+ \nu_e K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	70	1	71
72	$e^+e^- \rightarrow e^- \bar{\nu}_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^+ K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	71	1	72
73	$e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^+ K^- n \bar{p} \gamma^{gFSR} \gamma \gamma \gamma \gamma$	72	1	73
74	$e^+e^- \rightarrow e^+ e^- \nu_e \bar{\nu}_e K_L \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- n \bar{p} f_0(600) \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	73	1	74
75	$e^+e^- \rightarrow \mu^+ \nu_\mu K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^+ K^- K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	74	1	75
76	$e^+e^- \rightarrow \mu^+ \nu_\mu K_L \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	75	1	76
77	$e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	76	1	77
78	$e^+e^- \rightarrow e^- \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K_S \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	77	1	78
79	$e^+e^- \rightarrow e^+ e^- \nu_e \bar{\nu}_e \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma$	78	1	79
80	$e^+e^- \rightarrow e^+ \nu_e \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	79	1	80

index	event initial-final states	iEvtIFSts	nEvts	nCmltEvts
121	$e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\bar{\nu}_\mu K_L\pi^+\pi^+\pi^+\pi^-\pi^-K^-\gamma^{gFSR}\gamma\gamma\gamma$	120	1	121
122	$e^+e^- \rightarrow \mu^+\nu_\mu K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma$	121	1	122
123	$e^+e^- \rightarrow e^-\bar{\nu}_e\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^-K^+K^-\gamma^{gFSR}\gamma\gamma\gamma$	122	1	123
124	$e^+e^- \rightarrow e^-\bar{\nu}_e\nu_\tau\bar{\nu}_\tau K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\gamma\gamma\gamma\gamma\gamma\gamma$	123	1	124
125	$e^+e^- \rightarrow e^+e^-\mu^+\bar{\nu}_\mu K_L K_L\pi^+\pi^-\pi^-K^+\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	124	1	125
126	$e^+e^- \rightarrow e^+\nu_e\mu^+\mu^-\nu_\mu\bar{\nu}_\mu\pi^+\pi^-\pi^-K^-\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	125	1	126
127	$e^+e^- \rightarrow e^+e^-\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	126	1	127
128	$e^+e^- \rightarrow e^+e^-e^-\bar{\nu}_e\bar{\nu}_e K_L\pi^+\pi^+\pi^+\pi^-\pi^-K^-K^-\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma$	127	1	128
129	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\nu_\tau\bar{\nu}_\tau\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma$	128	1	129
130	$e^+e^- \rightarrow e^+e^-e^-\nu_e\bar{\nu}_e\pi^+\pi^+\pi^-\pi^-K^+\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma$	129	1	130
131	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	130	1	131
132	$e^+e^- \rightarrow e^+\nu_e\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^-K^-\gamma^{gFSR}\gamma\gamma\gamma$	131	1	132
133	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^+K^+K^-\gamma^{gFSR}\gamma\gamma\gamma$	132	1	133
134	$e^+e^- \rightarrow \nu_\tau\bar{\nu}_\tau K_L K_L\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma$	133	1	134
135	$e^+e^- \rightarrow \mu^+\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	134	1	135
136	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+K^-f_0(600)\gamma\gamma\gamma$	135	1	136
137	$e^+e^- \rightarrow e^+e^-K_L K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^-\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	136	1	137
138	$e^+e^- \rightarrow \pi^+\pi^+\pi^-\pi^-K^+K^-n\bar{n}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	137	1	138
139	$e^+e^- \rightarrow e^+\nu_e K_L\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-p\bar{p}\gamma^{gFSR}\gamma\gamma\gamma$	138	1	139
140	$e^+e^- \rightarrow e^-\bar{\nu}_e\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+K^+\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	139	1	140
141	$e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma$	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	$e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-K^+K^-K^-K^-n\bar{n}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	142	1	143
144	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^-K^+K^-K^-\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	143	1	144
145	$e^+e^- \rightarrow e^-\bar{\nu}_e K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma$	144	1	145
146	$e^+e^- \rightarrow K_L\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-\pi^-K^-K^-\gamma^{gFSR}\gamma\gamma\gamma\gamma$	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	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^-K^-\gamma\gamma\gamma\gamma\gamma$	147	1	148
149	$e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	148	1	149
150	$e^+e^- \rightarrow \mu^+\nu_\mu\nu_\tau\bar{\nu}_\tau K_L\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-K^-\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	149	1	150
151	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma$	150	1	151
152	$e^+e^- \rightarrow e^-\nu_e\mu^+\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+n\bar{p}\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	151	1	152
153	$e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	152	1	153
154	$e^+e^- \rightarrow \pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+K^+K^+K^-\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	153	1	154
155	$e^+e^- \rightarrow e^-\bar{\nu}_e\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	154	1	155
156	$e^+e^- \rightarrow \pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-K^+K^-\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	155	1	156
157	$e^+e^- \rightarrow e^+e^+\nu_e\nu_e\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	156	1	157
158	$e^+e^- \rightarrow \mu^-\bar{\nu}_\mu\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-\pi^-K^+K^+\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	157	1	158
159	$e^+e^- \rightarrow e^-\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^+\pi^+\pi^+\pi^-\pi^-\pi^-\pi^-K^+f_0(600)\gamma^{gFSR}\gamma^{gFSR}\gamma\gamma\gamma\gamma$	158	1	159
160	$e^+e^- \rightarrow e^+e^-\nu_e\bar{\nu}_e\mu^+\nu_\mu\pi^+\pi^-\pi^-\gamma^{gFSR}\gamma\gamma\gamma\gamma\gamma\gamma\gamma$	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	$e^+e^- \rightarrow \mu^+ \mu^- \nu_\mu \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	161	1	162
163	$e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma$	162	1	163
164	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- p \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	163	1	164
165	$e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	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	$e^+e^- \rightarrow e^+ e^- \nu_\tau \bar{\nu}_\tau \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \bar{n} p \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma$	166	1	167
168	$e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma$	167	1	168
169	$e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- K^- \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma$	168	1	169
170	$e^+e^- \rightarrow \mu^+ \mu^- \nu_\mu \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ \gamma \gamma \gamma \gamma \gamma$	169	1	170
171	$e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- n \bar{n} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	170	1	171
172	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	171	1	172
173	$e^+e^- \rightarrow \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	172	1	173
174	$e^+e^- \rightarrow \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- K^- \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	173	1	174
175	$e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- K^- K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	174	1	175
176	$e^+e^- \rightarrow \nu_\tau \bar{\nu}_\tau \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \bar{n} p \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	175	1	176
177	$e^+e^- \rightarrow e^- \bar{\nu}_e K_L K_L K_L \pi^+ \pi^+ \pi^- K^- \bar{n} p \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	176	1	177
178	$e^+e^- \rightarrow K_L \pi^+ \pi^- K^+ K^- K^- \bar{n} p \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	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	$e^+e^- \rightarrow e^+ \nu_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	179	1	180
181	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^- p \bar{p} \gamma \gamma \gamma \gamma \gamma \gamma$	180	1	181
182	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	181	1	182
183	$e^+e^- \rightarrow e^+ \nu_e K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	182	1	183
184	$e^+e^- \rightarrow \mu^+ \nu_\mu \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	183	1	184
185	$e^+e^- \rightarrow e^- \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^- \pi^- n \bar{n} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	184	1	185
186	$e^+e^- \rightarrow e^+ \nu_e K_L K_L \pi^+ \pi^- \pi^- \pi^- K^+ K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	185	1	186
187	$e^+e^- \rightarrow \mu^+ \mu^+ \mu^- \nu_\mu \nu_\mu \bar{\nu}_\mu K_L \pi^+ \pi^+ \pi^- \pi^- \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma$	186	1	187
188	$e^+e^- \rightarrow e^+ \nu_e \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma$	187	1	188
189	$e^+e^- \rightarrow e^- \bar{\nu}_e K_L K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	188	1	189
190	$e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	189	1	190
191	$e^+e^- \rightarrow e^+ \nu_e K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- \pi^- K^+ p \bar{p} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma$	190	1	191
192	$e^+e^- \rightarrow e^+ e^- \nu_e \bar{\nu}_e K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	191	1	192
193	$e^+e^- \rightarrow K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma$	192	1	193
194	$e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^- \pi^- \pi^- K^+ K^+ K^- \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	193	1	194
195	$e^+e^- \rightarrow e^+ \nu_e \pi^+ \pi^+ \pi^- \pi^- \pi^- \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	194	1	195
196	$e^+e^- \rightarrow e^- e^- \bar{\nu}_e \bar{\nu}_e K_L K_L \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- K^- n \bar{n} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	195	1	196
197	$e^+e^- \rightarrow e^+ e^+ e^- \nu_e \mu^+ \nu_\mu \pi^- \pi^- K^+ n \bar{n} \gamma^{gFSR} \gamma^{gFSR} \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	196	1	197
198	$e^+e^- \rightarrow K_L \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- K^+ n \bar{n} \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	197	1	198
199	$e^+e^- \rightarrow e^- \bar{\nu}_e \mu^+ \nu_\mu \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^- K^+ K^+ \gamma \gamma \gamma \gamma \gamma \gamma \gamma \gamma$	198	1	199
200	$e^+e^- \rightarrow e^- \bar{\nu}_e \mu^- \bar{\nu}_\mu \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^+ \pi^- \pi^- \pi^- \pi^- \pi^-$	199	1	200

index	event initial-final states	iEvtIFSts	nEvts	nCmltEvts
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Table 3: Signal particle final states.

index	signal particle final states	iSigPFSts	nEtrs	nCmltEtrs
1	$D^0 \rightarrow \pi^0 \pi^+ K^-$	0	13	13
2	$D^0 \rightarrow \pi^+ K^-$	1	2	15