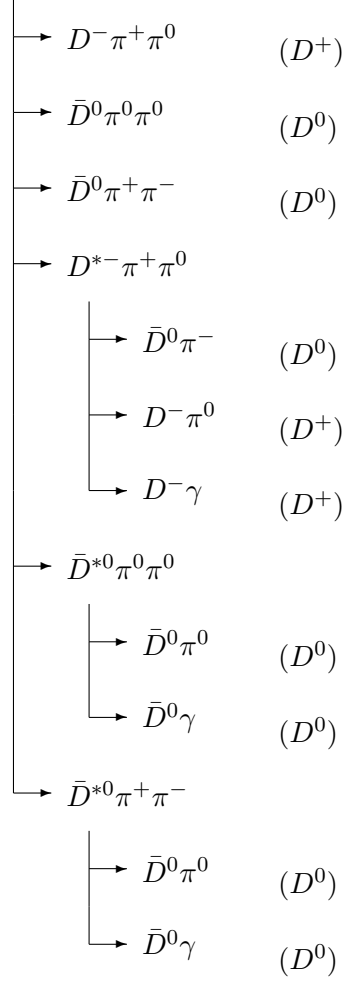


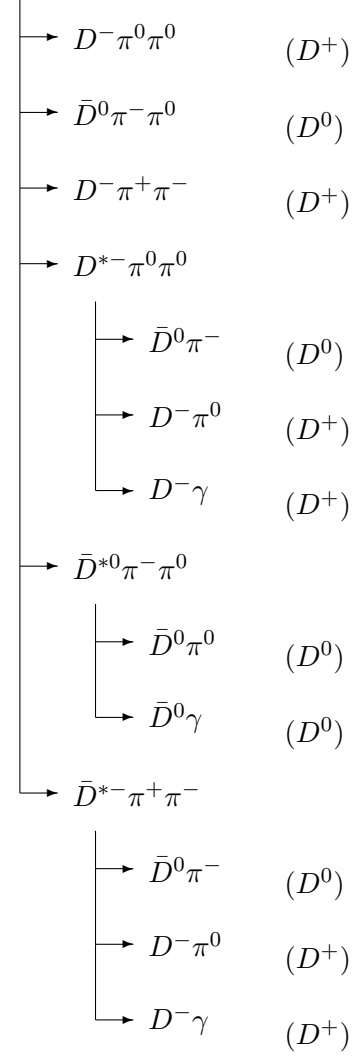
1. $B^+ \rightarrow \bar{D}^0 \ell^+ \nu_\ell$	(D^0)	$B^0 \rightarrow D^- \ell^+ \nu_\ell$	(D^+)
2. $B^+ \rightarrow \bar{D}^{*0} \ell^+ \nu_\ell$		$B^0 \rightarrow D^{*-} \ell^+ \nu_\ell$	
$\rightarrow \bar{D}^0 \pi^0$	(D^0)	$\rightarrow \bar{D}^0 \pi^-$	(D^0)
$\rightarrow \bar{D}^0 \gamma$	(D^0)	$\rightarrow D^- \pi^0$	(D^+)
		$\rightarrow D^- \gamma$	(D^+)
3. $B^+ \rightarrow \bar{D}^{**0} \ell^+ \nu_\ell$		$B^0 \rightarrow D^{*-} \ell^+ \nu_\ell$	
$\rightarrow D^- \pi^+$	(D^+)	$\rightarrow \bar{D}^0 \pi^-$	(D^0)
$\rightarrow \bar{D}^0 \pi^0$	(D^0)	$\rightarrow D^- \pi^0$	(D^+)
$\rightarrow \bar{D}^0 \gamma$	(D^0)	$\rightarrow D^- \gamma$	(D^+)
$\rightarrow D^{*-} \pi^+$		$\rightarrow D^{*-} \pi^0$	
$\rightarrow \bar{D}^0 \pi^-$	(D^0)	$\rightarrow \bar{D}^0 \pi^-$	(D^0)
$\rightarrow D^- \pi^0$	(D^+)	$\rightarrow D^- \pi^0$	(D^+)
$\rightarrow D^- \gamma$	(D^+)	$\rightarrow D^- \gamma$	(D^+)
$\rightarrow \bar{D}^{*0} \pi^0$		$\rightarrow \bar{D}^{*0} \pi^-$	
$\rightarrow \bar{D}^0 \pi^0$	(D^0)	$\rightarrow \bar{D}^0 \pi^0$	(D^0)
$\rightarrow \bar{D}^0 \gamma$	(D^0)	$\rightarrow \bar{D}^0 \gamma$	(D^0)
$\rightarrow \bar{D}^{*0} \gamma$	(negl.)	$\rightarrow \bar{D}^{*-} \gamma$	(negl.)
4. $B^+ \rightarrow \bar{D}^0 \pi^0 \ell^+ \nu_\ell$	(D^0)	$B^0 \rightarrow D^- \pi^0 \ell^+ \nu_\ell$	(D^+)
5. $B^+ \rightarrow D^- \pi^+ \ell^+ \nu_\ell$	(D^+)	$B^0 \rightarrow \bar{D}^0 \pi^- \ell^+ \nu_\ell$	(D^0)
6. $B^+ \rightarrow \bar{D}^{*0} \pi^0 \ell^+ \nu_\ell$		$B^0 \rightarrow D^{*-} \pi^0 \ell^+ \nu_\ell$	
$\rightarrow \bar{D}^0 \pi^0$	(D^0)	$\rightarrow \bar{D}^0 \pi^-$	(D^0)
$\rightarrow \bar{D}^0 \gamma$	(D^0)	$\rightarrow D^- \pi^0$	(D^+)
		$\rightarrow D^- \gamma$	(D^+)
7. $B^+ \rightarrow D^{*-} \pi^+ \ell^+ \nu_\ell$		$B^0 \rightarrow \bar{D}^{*0} \pi^- \ell^+ \nu_\ell$	
$\rightarrow \bar{D}^0 \pi^-$	(D^0)	$\rightarrow \bar{D}^0 \pi^0$	(D^0)
$\rightarrow D^- \pi^0$	(D^+)	$\rightarrow \bar{D}^0 \gamma$	(D^0)
$\rightarrow D^- \gamma$	(D^+)		

Fig. 5.1 The resonant or non-resonant charmed semileptonic B meson decays that contribute to the branching fractions of $\mathcal{B}(B^+ \rightarrow D^{(*)} l \nu_l)$ and $\mathcal{B}(B^+ \rightarrow D^{(*)} \pi l \nu_l)$ are listed. The contributions of electromagnetic D^{**} decays to the decay branching fraction is negligibly small and are set to zero.

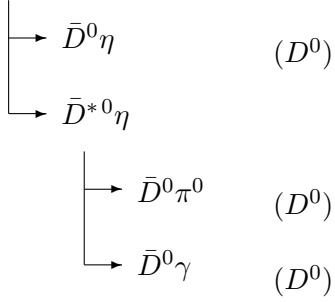
$$8. B^+ \rightarrow \bar{D}^{*0} \ell^+ \nu_\ell$$



$$B^0 \rightarrow D^{*-} \ell^+ \nu_\ell$$



$$9. B^+ \rightarrow \bar{D}^{*0} \ell^+ \nu_\ell$$



$$B^0 \rightarrow D^{*-} \ell^+ \nu_\ell$$

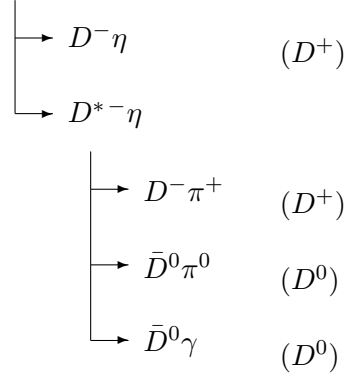


Fig. 5.2 The resonant charmed semileptonic B meson decays, that contribute to $\mathcal{B}(B^+ \rightarrow D^{(*)} \pi \pi l \nu_l)$, are listed.