$\Gamma(h^-h^-h^+ \geq 1 \text{ neutrals } \nu_\tau)/\Gamma_{\text{total}}$ Γ_{22}/Γ

Data marked "avg" are highly correlated with data appearing elsewhere in the Listings, and are therefore used for the average given below but not in the overall fits. "f&a" marks results used for the fit and the average.

VALUE (%)		EVTS	DOCUMENT ID		TECN	COMMENT
5.63±0.30 OUR FIT Error includes scale factor of 1.2.						
5.4 ±0.4 OUR AVERAGE Error includes scale factor of 1.2.						
4.95±0.29±0.65	f&a	570	DECAMP	92C	ALEP	E_{cm}^{ee} = 88–95 GeV
5.6 ±0.7 ±0.3	avg	352	[66] BEHREND	90	CELL	E_{cm}^{ee} = 35 GeV
4.2 ±0.5 ±0.9	f&a	203	[67] ALBRECHT	87L	ARG	E_{cm}^{ee} = 10 GeV
7.6 ±0.4 ±0.9	avg		[68,69] RUCKSTUHL	86	DLCO	E_{cm}^{ee} = 29 GeV
4.7 ±0.5 ±0.8	avg	530	[70] SCHMIDKE	86	MRK2	E_{cm}^{ee} = 29 GeV
5.6 ±0.4 ±0.7	avg		[69] FERNANDEZ	85	MAC	E_{cm}^{ee} = 29 GeV
6.2 ±2.3 ±1.7	f&a		BEHREND	84	CELL	E_{cm}^{ee} = 14,22 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
6.1 ±0.8 ±0.9			[71] BURCHAT	87	MRK2	E_{cm}^{ee} = 29 GeV

[66] BEHREND 90 value is not independent of BEHREND 90 B($3h\nu_\tau \geq 1$ neutrals) + B(5-prong).

[67] ALBRECHT 87L measure the product of branching ratios $B(3\pi^\pm\pi^0\nu_\tau)$ $B((e\overline{\nu}\text{or}\mu\overline{\nu}\text{or}\pi\text{or}K\text{or}\rho)\nu_\tau) = 0.029$ and use the PDG 86 values for the second branching ratio which sum to 0.69 ± 0.03 to get the quoted value.

[68] Contributions from kaons and from $>1\pi^0$ are subtracted. Not independent of (3-prong + $0\pi^0$) and (3-prong + $\geq 0\pi^0$) values.

[69] Value obtained using paper's $R = B(h^-h^-h^+\nu_\tau)/B(3\text{-prong})$ and current B(3-prong) = 0.143.

[70] Not independent of SCHMIDKE 86 $h^-h^-h^+\nu_\tau$ and $h^-h^-h^+(\geq 0\pi^0)\nu_\tau$ values.

[71] BURCHAT 87 value is not independent of SCHMIDKE 86 value.

$\Gamma((a_1(1260)\pi)^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ Γ_{24}/Γ_{23}

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.44	95	[72] ALBRECHT	91D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV

[72] ALBRECHT 91D not independent of their $\Gamma(\omega\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$, $\Gamma(\rho^0\pi^0\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$, $\Gamma(\rho^+\pi^-\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$, and $\Gamma(\rho^-\pi^+\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ values.

$\Gamma((\rho\pi)^0\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ $\Gamma_{25}/\Gamma_{23} = (\Gamma_{26}+\Gamma_{27}+\Gamma_{28})/\Gamma_{23}$

VALUE	DOCUMENT ID		TECN	COMMENT
0.64±0.07±0.03	[73] ALBRECHT	91D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV

[73] ALBRECHT 91D not independent of their $\Gamma(\rho^+\pi^-\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$, $\Gamma(\rho^-\pi^+\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$, and $\Gamma(\rho^0\pi^0\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ values.

$\Gamma(\rho^0\pi^0\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ Γ_{26}/Γ_{23}

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.30±0.04±0.02	393	ALBRECHT	91D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV

$\Gamma(\rho^+\pi^-\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ Γ_{27}/Γ_{23}

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.10±0.03±0.04	142	ALBRECHT	91D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV

$\Gamma(\rho^-\pi^+\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ Γ_{28}/Γ_{23}

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.26±0.05±0.01	370	ALBRECHT	91D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV

$[\Gamma(\rho^+\pi^-\pi^-\nu_\tau) + \Gamma(\rho^-\pi^+\pi^-\nu_\tau)]/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ $(\Gamma_{27}+\Gamma_{28})/\Gamma_{23}$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.33±0.06±0.01	475	[74] ALBRECHT	91D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV

[74] ALBRECHT 91D not independent of their $\Gamma(\rho^+\pi^-\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ and $\Gamma(\rho^-\pi^+\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ values.

$\Gamma(h^-h^-h^+2\pi^0\nu_\tau)/\Gamma(2h^-h^+ \geq 0 \text{ neutrals } \nu_\tau \text{ ("3-prong")})$ Γ_{29}/Γ_{20}

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.034±0.002±0.003	668	BORTOLETTO93	CLEO	$E_{cm}^{ee} \approx 10.6$ GeV

$\Gamma(\omega\pi^- \geq 0 \text{ neutrals } \nu_\tau)/\Gamma_{\text{total}}$ Γ_{30}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.65±0.3±0.2	1513	ALBRECHT	88M	ARG	$E_{cm}^{ee} \approx 10$ GeV

$\Gamma(\omega\pi^-\nu_\tau)/\Gamma_{\text{total}}$ Γ_{31}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.60±0.27±0.41	139	BARINGER	87	CLEO	E_{cm}^{ee} = 10.5 GeV

$\Gamma(\omega\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ Γ_{31}/Γ_{23}

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.33±0.04±0.02	458	ALBRECHT	91D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV

$[\Gamma(\rho^0\pi^0\pi^-\nu_\tau) + \Gamma(\rho^+\pi^-\pi^-\nu_\tau) + \Gamma(\rho^-\pi^+\pi^-\nu_\tau) + \Gamma(\omega\pi^-\nu_\tau)]/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ $(\Gamma_{26}+\Gamma_{27}+\Gamma_{28}+\Gamma_{31})/\Gamma_{23}$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
>0.81	95	[75] ALBRECHT	91D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV

[75] ALBRECHT 91D not independent of their $\Gamma(\omega\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$, $\Gamma(\rho^0\pi^0\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$, $\Gamma(\rho^+\pi^-\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$, and $\Gamma(\rho^-\pi^+\pi^-\nu_\tau)/\Gamma(\pi^-\pi^-\pi^+\pi^0\nu_\tau)$ values.

$\Gamma(h^-\omega\pi^0\nu_\tau)/\Gamma(2h^-h^+ \geq 0 \text{ neutrals } \nu_\tau \text{ ("3-prong")})$ Γ_{32}/Γ_{20}

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.028±0.003±0.003	430	[76] BORTOLETTO93		CLEO	$E_{cm}^{ee} \approx 10.6$ GeV

[76] Not independent of BORTOLETTO 93 $\Gamma(\tau^- \to h^-\omega\pi^0\nu_\tau)/\Gamma(\tau^- \to h^-h^-h^+2\pi^0\nu_\tau)$ value.

$\Gamma(h^-\omega\pi^0\nu_\tau)/\Gamma(h^-h^-h^+2\pi^0\nu_\tau)$ Γ_{32}/Γ_{29}

VALUE	DOCUMENT ID	TECN	COMMENT
0.81±0.06±0.06	BORTOLETTO93	CLEO	$E_{cm}^{ee} \approx 10.6$ GeV

$\Gamma(K^-h^+h^- \geq 0 \text{ neutrals } \nu_\tau)/\Gamma_{\text{total}}$ Γ_{33}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.6	90	AIHARA	84C	TPC	E_{cm}^{ee} = 29 GeV

$\Gamma(K^-\pi^+\pi^- \geq 0 \text{ neutrals } \nu_\tau)/\Gamma_{\text{total}}$ Γ_{34}/Γ

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
$0.22^{+0.16}_{-0.13}$	9	[77] MILLS	85	DLCO	E_{cm}^{ee} = 29 GeV

[77] Error correlated with MILLS 85 ($KK\pi\nu$) value. Excludes 23% systematic error.

$\Gamma(K^-K^+\pi^-\nu_\tau)/\Gamma_{\text{total}}$ Γ_{35}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
$0.22^{+0.17}_{-0.11}$	9	[78] MILLS	85	DLCO	E_{cm}^{ee} = 29 GeV

[78] Error correlated with MILLS 85 ($K\pi\pi\pi^0\nu$) value. Excludes 23% systematic error.

$\Gamma(3h^-2h^+ \geq 0 \text{ neutrals } \nu_\tau \text{ ("5-prong")})/\Gamma_{\text{total}}$ Γ_{36}/Γ

VALUE (%)	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.125±0.024 OUR FIT						
0.123±0.023 OUR AVERAGE						
0.26 ±0.06 ±0.05			ACTON	92H	OPAL	E_{cm}^{ee} = 88.2–94.2 GeV
0.10 $^{+0.05}_{-0.04}$ ±0.03			DECAMP	92C	ALEP	E_{cm}^{ee} = 88–95 GeV
0.16 ±0.13 ±0.04			BEHREND	89B	CELL	E_{cm}^{ee} = 14–47 GeV
0.102±0.029		13	BYLSMA	87	HRS	E_{cm}^{ee} = 29 GeV
0.3 ±0.1 ±0.2			BARTEL	85F	JADE	E_{cm}^{ee} = 34.6 GeV
0.16 ±0.08 ±0.04		4	BURCHAT	85	MRK2	E_{cm}^{ee} = 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<0.34	95		ADEVA	91F	L3	E_{cm}^{ee} = 88.3–94.3 GeV
<0.7	95	0	ALTHOFF	85	TASS	E_{cm}^{ee} = 34.5 GeV
0.13 ±0.04		10	BELTRAMI	85	HRS	Repl. by BYLSMA 87
<0.17	95	2	FERNANDEZ	85	MAC	E_{cm}^{ee} = 29 GeV
<0.3	90	4	AIHARA	84C	TPC	E_{cm}^{ee} = 29 GeV
<0.9	95	1	BEHREND	84	CELL	E_{cm}^{ee} = 14,22 GeV
1.0 ±0.4		10	BEHREND	82	CELL	Repl. by BEHREND 89B
<0.5	95	2	BLOCKER	82C	MRK2	E_{cm}^{ee} = 29 GeV
<6.0	95		BRANDELIK	80	TASS	E_{cm}^{ee} = 30 GeV

$[\Gamma(h^-h^-h^+ \geq 1 \text{ neutrals } \nu_\tau) + \Gamma(3h^-2h^+ \geq 0 \text{ neutrals } \nu_\tau \text{ ("5-prong")})]/\Gamma_{\text{total}}$ $(\Gamma_{22}+\Gamma_{36})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
5.75±0.30 OUR FIT Error includes scale factor of 1.2.					
5.4 ±0.5 OUR AVERAGE					
5.05±0.29±0.65	570	DECAMP	92C	ALEP	E_{cm}^{ee} = 88–95 GeV
5.8 ±0.7 ±0.2	352	[79] BEHREND	90	CELL	E_{cm}^{ee} = 35 GeV

[79] BEHREND 90 not independent of their $\Gamma(h^-h^-h^+ \geq 1 \text{ neutrals}\,\nu_\tau)/\Gamma_{\text{total}}$ measurement.

$\Gamma(3h^-2h^+\nu_\tau)/\Gamma_{\text{total}}$ Γ_{37}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.056±0.016 OUR AVERAGE					
0.064±0.023±0.01	12	ALBRECHT	88B	ARG	E_{cm}^{ee} = 10 GeV
0.051±0.020	7	BYLSMA	87	HRS	E_{cm}^{ee} = 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.067±0.030	5	[80] BELTRAMI	85	HRS	Repl. by BYLSMA 87

[80] The error quoted is statistical only.