τ – THIS IS PART 3 OF 4

To reduce the size of this section's PostScript file, we have divided it into four PostScript files. We present the following index:

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Not independent of ABREU 94K B($K^-\nu_\tau$) and B($K^- \geq 0$ neutralsν_τ) measurements.

$\Gamma(h^-\overline{K}^0 \geq 0\ \text{neutrals} \geq 0 K^0_L \nu_\tau)/\Gamma_{\text{total}}$ Γ_{28}/Γ

$\Gamma_{28}/\Gamma = (\Gamma_{30}+\Gamma_{32}+\Gamma_{34}+\Gamma_{35}+0.657\Gamma_{37})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.54±0.10 OUR FIT	Error includes scale factor of 1.3.				
1.3 ±0.3	44	TSCHIRHART	88	HRS	E^{ee}_{cm}= 29 GeV

$\Gamma(h^-\overline{K}^0\nu_\tau)/\Gamma_{\text{total}}$ $\Gamma_{29}/\Gamma = (\Gamma_{30}+\Gamma_{32})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.92 ±0.08 OUR FIT	Error includes scale factor of 1.3.				
0.855±0.036±0.073	1242	COAN	96	CLEO	$E^{ee}_{\text{cm}} \approx$ 10.6 GeV

$\Gamma(\pi^-\overline{K}^0\nu_\tau)/\Gamma_{\text{total}}$ Γ_{30}/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
0.77 ±0.08 OUR FIT	Error includes scale factor of 1.3.					
0.76 ±0.06 OUR AVERAGE						
0.79 ±0.10 ±0.09	f&a	98	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.704±0.041±0.072	avg		[72] COAN	96	CLEO	$E^{ee}_{\text{cm}} \approx$ 10.6 GeV
0.95 ±0.15 ±0.06	f&a		[73] ACCIARRI	95F	L3	1991–1993 LEP runs
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.88 ±0.14 ±0.09		53	BUSKULIC	94F	ALEP	Repl. by BUSKULIC 96

[72] Not independent of COAN 96 B($h^- K^0 \nu_\tau$) and B($K^- K^0 \nu_\tau$) measurements.

[73] ACCIARRI 95F do not identify π^-/K^- and assume B($K^- K^0 \nu_\tau$) = (0.29 ± 0.12)%.

$\Gamma(\pi^-\overline{K}^0(\text{non-}K^*(892)^-)\nu_\tau)/\Gamma_{\text{total}}$ Γ_{31}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.17	95	ACCIARRI	95F	L3	1991–1993 LEP runs

$\Gamma(K^-K^0\nu_\tau)/\Gamma_{\text{total}}$ Γ_{32}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.155±0.028 OUR FIT					
0.162±0.032 OUR AVERAGE	Error includes scale factor of 1.1.				
0.26 ±0.09 ±0.02	13	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.151±0.021±0.022	111	COAN	96	CLEO	$E^{ee}_{\text{cm}} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.29 ±0.12 ±0.03	8	BUSKULIC	94F	ALEP	Repl. by BUSKULIC 96

$\Gamma(h^-\overline{K}^0\pi^0\nu_\tau)/\Gamma_{\text{total}}$ $\Gamma_{33}/\Gamma = (\Gamma_{34}+\Gamma_{35})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.55 ±0.05 OUR FIT					
0.562±0.050±0.048	264	COAN	96	CLEO	$E^{ee}_{\text{cm}} \approx$ 10.6 GeV

$\Gamma(\pi^- \overline{K}^0 \pi^0 \nu_\tau)/\Gamma_{total}$ Γ_{34}/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
0.41 ±0.06 OUR FIT						
0.39 ±0.06 OUR AVERAGE						
0.32 ±0.11 ±0.05	f&a	23	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.417±0.058±0.044	avg		[74] COAN	96	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
0.41 ±0.12 ±0.03	f&a		[75] ACCIARRI	95F	L3	1991–1993 LEP runs
• • • We do not use the following data for averages, fits, limits, etc. • • •						
0.33 ±0.14 ±0.07		9	BUSKULIC	94F	ALEP	Repl. by BUSKULIC 96

[74] Not independent of COAN 96 B($h^- K^0 \pi^0 \nu_\tau$) and B($K^- K^0 \pi^0 \nu_\tau$) measurements.

[75] ACCIARRI 95F do not identify π^-/K^- and assume B($K^- K^0 \pi^0 \nu_\tau$) = (0.05 ± 0.05)%.

$\Gamma(K^- K^0 \pi^0 \nu_\tau)/\Gamma_{total}$ Γ_{35}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.138±0.032 OUR FIT					
0.130±0.034 OUR AVERAGE					
0.10 ±0.05 ±0.03	5	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.145±0.036±0.020	32	COAN	96	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.05 ±0.05 ±0.01	1	BUSKULIC	94F	ALEP	Repl. by BUSKULIC 96

$\Gamma(h^- K_S^0 K_S^0 \nu_\tau)/\Gamma_{total}$ $\Gamma_{36}/\Gamma = \frac{1}{4}\Gamma_{37}/\Gamma$

Bose-Einstein correlations might make the mixing fraction different than 1/4.

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.025±0.006 OUR FIT					
0.023±0.005±0.003	42	COAN	96	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV

$\Gamma(\pi^- K^0 \overline{K}^0 \nu_\tau)/\Gamma_{total}$ Γ_{37}/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
0.101±0.023 OUR FIT						
0.099±0.023 OUR AVERAGE						
0.092±0.020±0.012	avg	42	[76] COAN	96	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
0.31 ±0.12 ±0.04	f&a		ACCIARRI	95F	L3	1991–1993 LEP runs

[76] We multiply the COAN 96 measurement B($h^- K_S^0 K_S^0 \nu_\tau$) = (0.023 ± 0.005 ± 0.003)% by 4 to obtain the listed value. This factor of 1/4 is uncertain, and might be as large as 1/2, due to Bose-Einstein correlations and the resonant parentage of this state.

$\Gamma(K^- K^0 \geq 0 \text{ neutrals } \nu_\tau)/\Gamma_{total}$ $\Gamma_{38}/\Gamma = (\Gamma_{32}+\Gamma_{35})/\Gamma$

VALUE (%)	DOCUMENT ID
0.29±0.04 OUR FIT	

$\Gamma(K^- \geq 0\pi^0 \geq 0K^0\,\nu_\tau)/\Gamma_{total}$ Γ_{39}/Γ

$\Gamma_{39}/\Gamma = (\Gamma_{10}+\Gamma_{15}+\Gamma_{20}+\Gamma_{24}+\Gamma_{32}+\Gamma_{35})/\Gamma$

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
1.65±0.10 OUR FIT						
1.69±0.07 OUR AVERAGE						
1.70±0.05±0.06	avg	1610	[77] BUSKULIC	96	ALEP	LEP 1991–1993 data
1.54±0.24	f&a		ABREU	94K	DLPH	LEP 1992 Z data
1.70±0.12±0.19	f&a	202	[78] BATTLE	94	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
1.6 ±0.4 ±0.2	f&a	35	AIHARA	87B	TPC	E_{cm}^{ee}= 29 GeV
1.71±0.29	f&a	53	MILLS	84	DLCO	E_{cm}^{ee}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1.60±0.07±0.12		967	[79] BUSKULIC	94E	ALEP	Repl. by BUSKULIC 96

[77] Not independent of BUSKULIC 96 B($K^-\nu_\tau$), B($K^-\pi^0\nu_\tau$), B($K^-2\pi^0\nu_\tau$), B($K^-K^0\nu_\tau$), and B($K^-K^0\pi^0\nu_\tau$) values.

[78] BATTLE 94 quote 1.60 ± 0.12 ± 0.19. We add 0.10 ± 0.02 to correct for their rejection of $K_S^0 \to \pi^+\pi^-$ decays.

[79] Not independent of BUSKULIC 94E B($K^-\nu_\tau$), B($K^-\pi^0\nu_\tau$), B($K^-2\pi^0\nu_\tau$), B($K^-K^0\nu_\tau$), and B($K^-K^0\pi^0\nu_\tau$) values.

$\Gamma(K^0(\text{particles})^-\,\nu_\tau)/\Gamma_{total}$ Γ_{40}/Γ

$\Gamma_{40}/\Gamma = (\Gamma_{30}+\Gamma_{32}+\Gamma_{34}+\Gamma_{35}+\Gamma_{37})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.58±0.10 OUR FIT	Error includes scale factor of 1.2.				
1.94±0.18±0.12	141	[80] AKERS	94G	OPAL	E_{cm}^{ee}= 88–94 GeV

[80] AKERS 94G measure $\Gamma(K_S^0(\text{particles})^-\,\nu_\tau)/\Gamma_{total}$ = 0.97 ± 0.09 ± 0.06.

$\Gamma(K^0 h^+ h^- h^- \geq 0\ \text{neut.}\ \nu_\tau)/\Gamma_{total}$ Γ_{41}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.17	95	TSCHIRHART	88	HRS	E_{cm}^{ee}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.27	90	BELTRAMI	85	HRS	E_{cm}^{ee}= 29 GeV

$\Gamma(h^- h^- h^+ \geq 0\text{neut.}\ \nu_\tau(\text{"3-prong"}))/\Gamma_{total}$ Γ_{42}/Γ

$\Gamma_{42}/\Gamma = (0.3431\Gamma_{30}+0.3431\Gamma_{32}+0.3431\Gamma_{34}+0.3431\Gamma_{35}+0.4508\Gamma_{37}+\Gamma_{47}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.9101\Gamma_{98}+0.9101\Gamma_{99})/\Gamma$

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
14.91 ± 0.14 OUR FIT Error includes scale factor of 1.3.						
14.01 ± 0.29 OUR AVERAGE Error includes scale factor of 1.2.						
14.4 ± 0.6 ± 0.3	f&a		ADEVA	91F	L3	E_{cm}^{ee} = 88.3–94.3 GeV
13.5 ± 0.3 ± 0.3	f&a		ABACHI	89B	HRS	E_{cm}^{ee} = 29 GeV
15.0 ± 0.4 ± 0.3	f&a		BEHREND	89B	CELL	E_{cm}^{ee} = 14–47 GeV
15.1 ± 0.8 ± 0.6	f&a		AIHARA	87B	TPC	E_{cm}^{ee} = 29 GeV
12.8 ± 0.5 ± 0.8	f&a	1420	SCHMIDKE	86	MRK2	E_{cm}^{ee} = 29 GeV
15.3 ± 1.1 $^{+1.3}_{-1.6}$	f&a	367	ALTHOFF	85	TASS	E_{cm}^{ee} = 34.5 GeV
13.6 ± 0.5 ± 0.8	f&a		BARTEL	85F	JADE	E_{cm}^{ee} = 34.6 GeV
13.3 ± 0.3 ± 0.6	f&a		FERNANDEZ	85	MAC	E_{cm}^{ee} = 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
12.8 ± 1.0 ± 0.7			[81] BURCHAT	87	MRK2	E_{cm}^{ee} = 29 GeV
12.1 ± 0.5 ± 1.2			RUCKSTUHL	86	DLCO	E_{cm}^{ee} = 29 GeV
12.2 ± 1.3 ± 3.9			[82] BERGER	85	PLUT	E_{cm}^{ee} = 34.6 GeV
24 ± 6		35	BRANDELIK	80	TASS	E_{cm}^{ee} = 30 GeV
32 ± 5		692	[83] BACINO	78B	DLCO	E_{cm}^{ee} = 3.1–7.4 GeV
35 ± 11			[83] BRANDELIK	78	DASP	Assumes $V-A$ decay
18 ± 6.5		33	[83] JAROS	78	MRK1	$E_{cm}^{ee} > 6$ GeV

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

[82] Not independent of BERGER 85 $\Gamma(\mu^- \overline{\nu}_\mu \nu_\tau)/\Gamma_{total}$, $\Gamma(e^- \overline{\nu}_e \nu_\tau)/\Gamma_{total}$, $\Gamma(h^- \geq 1\pi^0 \nu_\tau)/\Gamma_{total}$, and $\Gamma(h^- \geq 0 K_L^0 \nu_\tau)/\Gamma_{total}$, and therefore not used in the fit.

[83] Low energy experiments are not in average or fit because the systematic errors in background subtraction are judged to be large.

$\Gamma(h^- h^- h^+ \geq 0$ neutrals ν_τ (ex. $K_S^0 \to \pi^+\pi^-))/\Gamma_{total}$ Γ_{43}/Γ

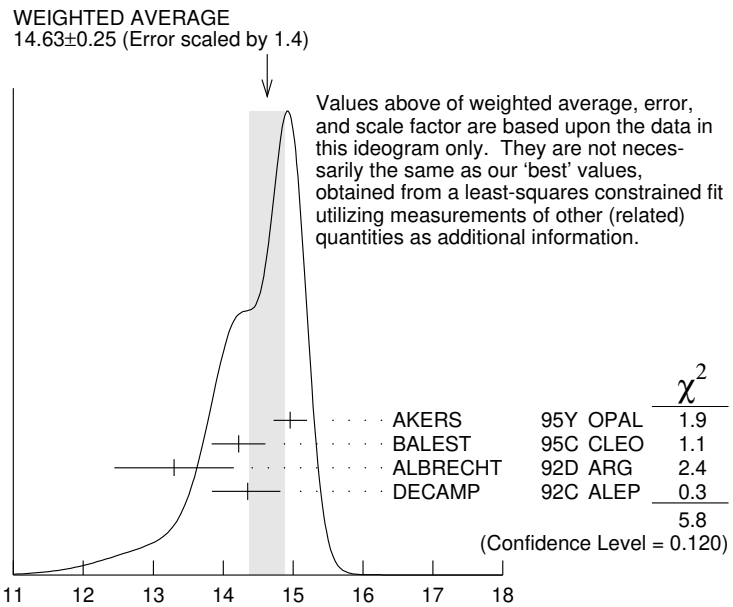
$\Gamma_{43}/\Gamma = (\Gamma_{47}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.9101\Gamma_{98}+0.9101\Gamma_{99})/\Gamma$

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
14.36 ± 0.14 OUR FIT Error includes scale factor of 1.3.						
14.63 ± 0.25 OUR AVERAGE Error includes scale factor of 1.4. See the ideogram below.						
14.96 ± 0.09 ± 0.22	f&a	10.4k	AKERS	95Y	OPAL	1991–1994 LEP runs
14.22 ± 0.10 ± 0.37	avg		[84] BALEST	95C	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
13.3 ± 0.3 ± 0.8	f&a		[85] ALBRECHT	92D	ARG	E_{cm}^{ee} = 9.4–10.6 GeV
14.35 $^{+0.40}_{-0.45}$ ± 0.24	f&a		DECAMP	92C	ALEP	1989–1990 LEP runs
• • • We do not use the following data for averages, fits, limits, etc. • • •						
15.26 ± 0.26 ± 0.22			ACTON	92H	OPAL	Repl. by AKERS 95Y

[84] Not independent of BALEST 95C $B(h^- h^- h^+ \nu_\tau)$ and $B(h^- h^- h^+ \pi^0 \nu_\tau)$ values, and BORTOLETTO 93 $B(h^- h^- h^+ 2\pi^0 \nu_\tau)/B(h^- h^- h^+ \geq 0$ neutrals $\nu_\tau)$ value.

[85] This ALBRECHT 92D value is not independent of their $\Gamma(\mu^- \overline{\nu}_\mu \nu_\tau)\Gamma(e^- \overline{\nu}_e \nu_\tau)/\Gamma^2_{\text{total}}$ value.



$\Gamma\left(h^- h^- h^+ \geq 0 \text{ neutrals } \nu_\tau (\text{ex. } K^0_S \rightarrow \pi^+ \pi^-)\right)/\Gamma_{\text{total}}$ (%)

$\Gamma(\pi^- \pi^+ \pi^- \geq 0 \text{ neutrals } \nu_\tau)/\Gamma(h^- h^- h^+ \geq 0 \text{neut. } \nu_\tau (\text{"3-prong"}))$ Γ_{44}/Γ_{42}

$\Gamma_{44}/\Gamma_{42} = \Gamma_{44}/(0.3431\Gamma_{30}+0.3431\Gamma_{32}+0.3431\Gamma_{34}+0.3431\Gamma_{35}+0.4508\Gamma_{37}+\Gamma_{47}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.9101\Gamma_{98}+0.9101\Gamma_{99})$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.945±0.019	490	[86] BAUER	94	TPC	E^{ee}_{cm}= 29 GeV

[86] BAUER 94 quote $B(\pi^- \pi^+ \pi^- \geq 0 \text{ neutrals } \nu_\tau) = 0.1329 \pm 0.0027$. We divide by 0.1406, their assumed value for B("3prong").

$\Gamma(h^- h^- h^+ \nu_\tau)/\Gamma_{\text{total}}$ Γ_{45}/Γ

$\Gamma_{45}/\Gamma = (0.3431\Gamma_{30}+0.3431\Gamma_{32}+\Gamma_{47}+0.0221\Gamma_{98})/\Gamma$

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
9.80±0.10 OUR FIT Error includes scale factor of 1.1.						
9.67±0.30 OUR AVERAGE Error includes scale factor of 2.5. See the ideogram below.						
7.6 ±0.1 ±0.5	avg	7.5k	[87] ALBRECHT	96E	ARG	E^{ee}_{cm}= 9.4–10.6 GeV
9.92±0.10±0.09	f&a	11.2k	[88] BUSKULIC	96	ALEP	LEP 1991–1993 data
9.49±0.36±0.63	f&a		DECAMP	92C	ALEP	1989–1990 LEP runs
8.7 ±0.7 ±0.3	f&a	694	[89] BEHREND	90	CELL	E^{ee}_{cm}= 35 GeV
7.8 ±0.5 ±0.8	f&a	890	SCHMIDKE	86	MRK2	E^{ee}_{cm}= 29 GeV
8.4 ±0.4 ±0.7	avg	1255	[90] FERNANDEZ	85	MAC	E^{ee}_{cm}= 29 GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

7.0 ±0.3 ±0.7	1566	[91] BAND	87	MAC	E_{cm}^{ee} = 29 GeV
6.7 ±0.8 ±0.9		[92] BURCHAT	87	MRK2	E_{cm}^{ee} = 29 GeV
6.4 ±0.4 ±0.9		[90] RUCKSTUHL	86	DLCO	E_{cm}^{ee} = 29 GeV
9.7 ±2.0 ±1.3		BEHREND	84	CELL	E_{cm}^{ee} = 14,22 GeV

[87] ALBRECHT 96E not independent of ALBRECHT 93C $\Gamma(h^-h^-h^+\nu_\tau(\text{ex. } K^0) \times \Gamma(\text{particle}^- \geq 0 \text{ neutrals } \geq 0 K_L^0 \nu_\tau)/\Gamma^2_{\text{total}}$ value.

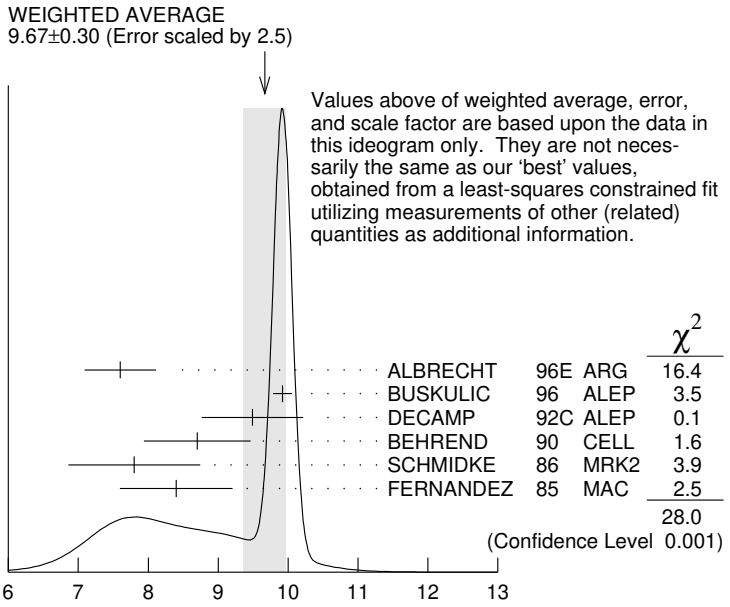
[88] BUSKULIC 96 quote $B(h^-h^-h^+\nu_\tau(\text{ex. } K^0)) = 9.50 \pm 0.10 \pm 0.11$. We add 0.42 to remove their K^0 correction and reduce the systematic error accordingly.

[89] BEHREND 90 subtract 0.3% to account for the $\tau^- \to K^*(892)^-\nu_\tau$ contribution to measured events.

[90] Value obtained by multiplying paper's $R = B(h^-h^-h^+\nu_\tau)/B(\text{3-prong})$ by B(3-prong) = 0.143 and subtracting 0.3% for $K^*(892)$ background.

[91] BAND 87 subtract for charged kaon modes; not independent of FERNANDEZ 85 value.

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



$\Gamma\left(h^-h^-h^+\nu_\tau\right)/\Gamma_{\text{total}}$ (%)

$\Gamma(h^-h^-h^+\nu_\tau)/\Gamma(h^-h^-h^+ \geq 0\text{neut. } \nu_\tau(\text{"3-prong"}))$ Γ_{45}/Γ_{42}

$\Gamma_{45}/\Gamma_{42} = (0.3431\Gamma_{30}+0.3431\Gamma_{32}+\Gamma_{47}+0.0221\Gamma_{98})/(0.3431\Gamma_{30}+0.3431\Gamma_{32}+0.3431\Gamma_{34}+0.3431\Gamma_{35}+0.4508\Gamma_{37}+\Gamma_{47}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.9101\Gamma_{99})$

This branching fractions is not independent of values for $\Gamma(h^-h^-h^+\nu_\tau)/\Gamma_{\text{total}}$ and $\Gamma(h^-h^-h^+ \geq 0\text{neut. } \nu_\tau(\text{"3-prong"}))/\Gamma_{\text{total}}$.

VALUE	DOCUMENT ID	TECN	COMMENT
0.744±0.007 OUR FIT			
0.61 ±0.03 ±0.05	FERNANDEZ 85	MAC	E_{cm}^{ee} = 29 GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.47 ±0.03 ±0.06 RUCKSTUHL 86 DLCO E_{cm}^{ee}= 29 GeV

$\Gamma(h^-h^-h^+\nu_\tau(\text{ex.}K^0))/\Gamma_{total}$ Γ_{46}/Γ

$\Gamma_{46}/\Gamma = (\Gamma_{47}+0.0221\Gamma_{98})/\Gamma$

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
9.48±0.10 OUR FIT Error includes scale factor of 1.1.						
9.57±0.11 OUR AVERAGE						
9.50±0.10±0.11	avg	11.2k	[93] BUSKULIC	96	ALEP	LEP 1991–1993 data
9.87±0.10±0.24	avg		[94] AKERS	95Y	OPAL	1991–1994 LEP runs
9.51±0.07±0.20	f&a	37.7k	BALEST	95C	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV

[93] Not independent of BUSKULIC 96 B($h^-h^-h^+\nu_\tau$) value.

[94] Not independent of AKERS 95Y B($h^-h^-h^+ \geq 0$ neutralsν_τ(ex. $K_S^0 \to \pi^+\pi^-$)) and B($h^-h^-h^+\nu_\tau$(ex. K^0))/B($h^-h^-h^+ \geq 0$ neutralsν_τ(ex. $K_S^0 \to \pi^+\pi^-$)) values.

$\Gamma(h^-h^-h^+\nu_\tau(\text{ex.}K^0)) \times \Gamma(\text{particle}^- \geq 0\,\text{neutrals} \geq 0 K_L^0 \nu_\tau(\text{"1-prong"}))/\Gamma_{total}^2$ $\Gamma_{46}\Gamma_1/\Gamma^2$

$\Gamma_{46}\Gamma_1/\Gamma^2 = (\Gamma_{47}+0.0221\Gamma_{98})(\Gamma_3+\Gamma_5+\Gamma_9+\Gamma_{10}+\Gamma_{13}+\Gamma_{15}+\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+0.6569\Gamma_{30}+0.6569\Gamma_{32}+0.6569\Gamma_{34}+0.6569\Gamma_{35}+0.4316\Gamma_{37}+0.708\Gamma_{91}+0.085\Gamma_{98})/\Gamma^2$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0805±0.0008 OUR FIT Error includes scale factor of 1.1.					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.063 ±0.001 ±0.004	7.5k	[95] ALBRECHT	93C	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

[95] ALBRECHT 93C quote B($\pi^-\pi^-\pi^+\nu_\tau$) = 6.8 ± 0.1 ± 0.5%. We add 0.5 ± 0.3% to remove their correction for charged kaon backgrounds, then multiply by 0.8613, their assumed value for B("1-prong').

$\Gamma(h^-h^-h^+\nu_\tau(\text{ex.}K^0))/\Gamma(h^-h^-h^+ \geq 0\,\text{neutrals}\,\nu_\tau(\text{ex. } K_S^0 \to \pi^+\pi^-))$ Γ_{46}/Γ_{43}

$\Gamma_{46}/\Gamma_{43} = (\Gamma_{47}+0.0221\Gamma_{98})/(\Gamma_{47}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.9101\Gamma_{98}+0.9101\Gamma_{99})$

VALUE	DOCUMENT ID		TECN	COMMENT
0.660±0.006 OUR FIT Error includes scale factor of 1.1.				
0.660±0.004±0.014	AKERS	95Y	OPAL	1991–1994 LEP runs

$\Gamma(h^-h^-h^+\nu_\tau(\text{ex.}K^0,\omega))/\Gamma_{total}$ Γ_{47}/Γ

VALUE (%)	DOCUMENT ID
9.44±0.10 OUR FIT Error includes scale factor of 1.1.	

$\Gamma(h^- h^- h^+ \geq 1 \text{ neutrals } \nu_\tau)/\Gamma_{\text{total}}$ Γ_{48}/Γ

$\Gamma_{48}/\Gamma = (0.3431\Gamma_{34}+0.3431\Gamma_{35}+0.1077\Gamma_{37}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.888\Gamma_{98}+0.9101\Gamma_{99})/\Gamma$

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
5.08±0.11 OUR FIT Error includes scale factor of 1.2.						
5.2 ±0.4 OUR AVERAGE						
5.6 ±0.7 ±0.3	avg	352	[96] BEHREND	90	CELL	E_{cm}^{ee}= 35 GeV
4.2 ±0.5 ±0.9	f&a	203	[97] ALBRECHT	87L	ARG	E_{cm}^{ee}= 10 GeV
4.7 ±0.5 ±0.8	avg	530	[98] SCHMIDKE	86	MRK2	E_{cm}^{ee}= 29 GeV
5.6 ±0.4 ±0.7	avg		[99] 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			[100] BURCHAT	87	MRK2	E_{cm}^{ee}= 29 GeV
7.6 ±0.4 ±0.9			[99,101] RUCKSTUHL	86	DLCO	E_{cm}^{ee}= 29 GeV

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

[97] ALBRECHT 87L measure the product of branching ratios B($3\pi^\pm\pi^0\nu_\tau$) B(($e\overline{\nu}$ or $\mu\overline{\nu}$ or π or K or ρ)ν_τ) = 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.

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

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

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

[101] 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.

$\Gamma(h^- h^- h^+ \geq 1 \text{ neutrals } \nu_\tau(\text{ex. } K_S^0 \to \pi^+\pi^-))/\Gamma_{\text{total}}$ Γ_{49}/Γ

$\Gamma_{49}/\Gamma = (\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.888\Gamma_{98}+0.9101\Gamma_{99})/\Gamma$

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
4.88±0.11 OUR FIT Error includes scale factor of 1.2.					
5.07±0.24 OUR AVERAGE					
5.09±0.10±0.23	avg		[102] AKERS	95Y OPAL	1991–1994 LEP runs
4.95±0.29±0.65	f&a	570	DECAMP	92C ALEP	1989–1990 LEP runs

[102] Not independent of AKERS 95Y B($h^-h^-h^+ \geq 0$ neutralsν_τ(ex. $K_S^0 \to \pi^+\pi^-$)) and B($h^-h^-h^+ \geq 0$ neutralsν_τ(ex. K^0))/B($h^-h^-h^+ \geq 0$ neutralsν_τ(ex. $K_S^0 \to \pi^+\pi^-$)) values.

$\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)/\Gamma_{\text{total}}$ Γ_{50}/Γ

$\Gamma_{50}/\Gamma = (0.3431\Gamma_{34}+0.3431\Gamma_{35}+\Gamma_{52}+0.888\Gamma_{98}+0.0221\Gamma_{99})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
4.44±0.09 OUR FIT	Error includes scale factor of 1.1.				
4.45±0.09±0.07	6.1k	[103] BUSKULIC	96	ALEP	LEP 1991–1993 data

[103] BUSKULIC 96 quote $B(h^- h^- h^+ \pi^0 \nu_\tau(\text{ex. } K^0)) = 4.30 \pm 0.09 \pm 0.09$. We add 0.15 to remove their K^0 correction and reduce the systematic error accordingly.

$\Gamma(h^- h^- h^+ \pi^0 \nu_\tau(\text{ex.}K^0))/\Gamma_{\text{total}}$ Γ_{51}/Γ

$\Gamma_{51}/\Gamma = (\Gamma_{52}+0.888\Gamma_{98}+0.0221\Gamma_{99})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
4.25±0.09 OUR FIT	Error includes scale factor of 1.1.				
4.23±0.06±0.22	7.2k	BALEST	95C	CLEO	$E_{\text{cm}}^{ee} \approx$ 10.6 GeV

$\Gamma(h^- h^- h^+ \pi^0 \nu_\tau(\text{ex. } K^0, \omega))/\Gamma_{\text{total}}$ Γ_{52}/Γ

VALUE (%)	DOCUMENT ID
2.55±0.09 OUR FIT	

$\Gamma(h^-(\rho\pi)^0 \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)$ Γ_{53}/Γ_{50}

$\Gamma_{53}/\Gamma_{50} = (\Gamma_{55}+\Gamma_{56}+\Gamma_{57})/\Gamma_{50}$

VALUE	DOCUMENT ID		TECN	COMMENT
0.64±0.07±0.03	[104] ALBRECHT	91D	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

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

$\Gamma((a_1(1260)h)^- \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)$ Γ_{54}/Γ_{50}

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.44	95	[105] ALBRECHT	91D	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

[105] ALBRECHT 91D not independent of their $\Gamma(h^- \omega \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau(\text{ex.}K^0))$, $\Gamma(h^- \rho\pi^0 \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)$, $\Gamma(h^- \rho^+ h^- \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)$, and $\Gamma(h^- \rho^- h^+ \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)$ values.

$\Gamma(h^- \rho\pi^0 \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)$ Γ_{55}/Γ_{50}

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

$\Gamma(h^- \rho^+ h^- \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)$ Γ_{56}/Γ_{50}

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

$\Gamma(h^- \rho^- h^+ \nu_\tau)/\Gamma(h^- h^- h^+ \pi^0 \nu_\tau)$ Γ_{57}/Γ_{50}

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

$\left[\Gamma(h^-\rho^+h^-\nu_\tau)+\Gamma(h^-\rho^-h^+\nu_\tau)\right]/\Gamma(h^-h^-h^+\pi^0\nu_\tau)$ $(\Gamma_{56}+\Gamma_{57})/\Gamma_{50}$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.33±0.06±0.01	475	[106] ALBRECHT	91D	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

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

$\Gamma(h^-h^-h^+2\pi^0\nu_\tau)/\Gamma_{total}$ Γ_{58}/Γ

$\Gamma_{58}/\Gamma=(0.1077\Gamma_{37}+\Gamma_{60}+0.236\Gamma_{91}+0.888\Gamma_{99})/\Gamma$

VALUE (%)	DOCUMENT ID
0.52±0.05 OUR FIT	

$\Gamma(h^-h^-h^+2\pi^0\nu_\tau(\text{ex.}K^0))/\Gamma_{total}$ Γ_{59}/Γ

$\Gamma_{59}/\Gamma=(\Gamma_{60}+0.236\Gamma_{91}+0.888\Gamma_{99})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.51±0.05 OUR FIT					
0.50±0.07±0.07	1.8k	BUSKULIC	96	ALEP	LEP 1991–1993 data

$\Gamma(h^-h^-h^+2\pi^0\nu_\tau(\text{ex.}K^0))/\Gamma(h^-h^-h^+\geq 0\text{neut. }\nu_\tau(\text{"3-prong"}))$ Γ_{59}/Γ_{42}

$\Gamma_{59}/\Gamma_{42}=(\Gamma_{60}+0.236\Gamma_{91}+0.888\Gamma_{99})/(0.3431\Gamma_{30}+0.3431\Gamma_{32}+0.3431\Gamma_{34}+0.3431\Gamma_{35}+0.4508\Gamma_{37}+\Gamma_{47}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.9101\Gamma_{98}+0.9101\Gamma_{99})$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0341±0.0031 OUR FIT					
0.034 ±0.002 ±0.003	668	BORTOLETTO	93	CLEO	$E_{cm}^{ee}\approx$ 10.6 GeV

$\Gamma(h^-h^-h^+2\pi^0\nu_\tau(\text{ex.}K^0,\omega,\eta))/\Gamma_{total}$ Γ_{60}/Γ

VALUE (%)	DOCUMENT ID
0.10±0.04 OUR FIT	

$\Gamma(h^-h^-h^+\geq 3\pi^0\nu_\tau)/\Gamma_{total}$ Γ_{61}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.11±0.06 OUR FIT					
0.11±0.04±0.05	440	BUSKULIC	96	ALEP	LEP 1991–1993 data

$\Gamma(K^-h^+h^-\geq 0\text{ neutrals }\nu_\tau)/\Gamma_{total}$ Γ_{62}/Γ

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

$\Gamma(K^-\pi^+\pi^-\geq 0\text{ neut. }\nu_\tau)/\Gamma_{total}$ Γ_{63}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.39^{+0.19}_{-0.16}}$ **OUR AVERAGE**	Error includes scale factor of 1.5.				
$0.58^{+0.15}_{-0.13}\pm0.12$	20	[107] BAUER	94	TPC	E_{cm}^{ee}= 29 GeV
$0.22^{+0.16}_{-0.13}\pm0.05$	9	[108] MILLS	85	DLCO	E_{cm}^{ee}= 29 GeV

[107] We multiply 0.58% by 0.20, the relative systematic error quoted by BAUER 94, to obtain the systematic error.

[108] Error correlated with MILLS 85 ($KK\pi\nu$) value. We multiply 0.22% by 0.23, the relative systematic error quoted by MILLS 85, to obtain obtain the systematic error.

$\Gamma(K^-\pi^+K^-\geq 0\ \text{neut.}\ \nu_\tau)/\Gamma_{\text{total}}$ Γ_{64}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.09	95	BAUER	94	TPC	E_{cm}^{ee}= 29 GeV

$\Gamma(K^-K^+\pi^-\geq 0\ \text{neut.}\ \nu_\tau)/\Gamma_{\text{total}}$ Γ_{65}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.15^{+0.09}_{-0.07}\pm 0.03}$	4	[109] BAUER	94	TPC	E_{cm}^{ee}= 29 GeV

[109] We multiply 0.15% by 0.20, the relative systematic error quoted by BAUER 94, to obtain the systematic error.

$\Gamma(K^-K^+\pi^-\nu_\tau)/\Gamma_{\text{total}}$ Γ_{66}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.22^{+0.17}_{-0.11}\pm 0.05}$	9	[110] MILLS	85	DLCO	E_{cm}^{ee}= 29 GeV

[110] Error correlated with MILLS 85 ($K\pi\pi\pi^0\nu$) value. We multiply 0.22% by 0.23, the relative systematic error quoted by MILLS 85, to obtain obtain the systematic error.

$\Gamma(\phi\pi^-\nu_\tau)/\Gamma_{\text{total}}$ Γ_{67}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<2.0\times 10^{-4}}$	90	[111] AVERY	97	CLEO	E_{cm}^{ee}= 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$<3.5\times 10^{-4}$	90	ALBRECHT	95H	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

[111] AVERY 97 limit varies from (1.2–2.0) $\times 10^{-4}$ depending on decay model assumptions.

$\Gamma(K^-K^+K^-\geq 0\ \text{neut.}\ \nu_\tau)/\Gamma_{\text{total}}$ Γ_{68}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.21	95	BAUER	94	TPC	E_{cm}^{ee}= 29 GeV

$\Gamma(\phi K^-\nu_\tau)/\Gamma_{\text{total}}$ Γ_{69}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<6.7\times 10^{-5}}$	90	[112] AVERY	97	CLEO	E_{cm}^{ee}= 10.6 GeV

[112] AVERY 97 limit varies from (5.4–6.7) $\times 10^{-5}$ depending on decay model assumptions.

$\Gamma(\pi^-K^+\pi^-\geq 0\ \text{neut.}\ \nu_\tau)/\Gamma_{\text{total}}$ Γ_{70}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.25	95	BAUER	94	TPC	E_{cm}^{ee}= 29 GeV

$\Gamma(e^-e^-e^+\overline{\nu}_e\nu_\tau)/\Gamma_{\text{total}}$ Γ_{71}/Γ

VALUE (units 10^{-5})	EVTS	DOCUMENT ID		TECN	COMMENT
2.8±1.4±0.4	5	ALAM	96	CLEO	E_{cm}^{ee}= 10.6 GeV

$\Gamma(\mu^-e^-e^+\overline{\nu}_\mu\nu_\tau)/\Gamma_{\text{total}}$ Γ_{72}/Γ

VALUE (units 10^{-5})	CL%	DOCUMENT ID		TECN	COMMENT
<3.6	90	ALAM	96	CLEO	E_{cm}^{ee}= 10.6 GeV

$\Gamma(3h^-2h^+ \geq 0$ neutrals ν_τ(ex. $K^0_S \to \pi^-\pi^+$)("5-prong"))/Γ_{total} Γ_{73}/Γ

$\Gamma_{73}/\Gamma = (\Gamma_{74}+\Gamma_{75})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.097±0.007 OUR FIT					
0.102±0.011 OUR AVERAGE					
0.097±0.005±0.011	419	GIBAUT	94B	CLEO	E^{ee}_{cm}= 10.6 GeV
0.26 ±0.06 ±0.05		ACTON	92H	OPAL	E^{ee}_{cm}= 88.2–94.2 GeV
0.10 $^{+0.05}_{-0.04}$ ±0.03		DECAMP	92C	ALEP	1989–1990 LEP runs
0.102±0.029	13	BYLSMA	87	HRS	E^{ee}_{cm}= 29 GeV
0.16 ±0.08 ±0.04	4	BURCHAT	85	MRK2	E^{ee}_{cm}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.16 ±0.13 ±0.04		BEHREND	89B	CELL	E^{ee}_{cm}= 14–47 GeV
0.3 ±0.1 ±0.2		BARTEL	85F	JADE	E^{ee}_{cm}= 34.6 GeV
0.13 ±0.04	10	BELTRAMI	85	HRS	Repl. by BYLSMA 87
1.0 ±0.4	10	BEHREND	82	CELL	Repl. by BEHREND 89B

$[\Gamma(h^-h^-h^+ \geq 1$ neutrals $\nu_\tau) + \Gamma(3h^-2h^+ \geq 0$ neutrals ν_τ (ex. $K^0_S \to \pi^-\pi^+$)("5-prong"))]/Γ_{total} $(\Gamma_{48}+\Gamma_{73})/\Gamma$

$(\Gamma_{48}+\Gamma_{73})/\Gamma = (0.3431\Gamma_{34}+0.3431\Gamma_{35}+0.4507\Gamma_{37}+0.1177\Gamma_{37}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+\Gamma_{74}+\Gamma_{75}+0.29\Gamma_{91}+0.888\Gamma_{98}+0.9101\Gamma_{99})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
5.21±0.11 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	1989–1990 LEP runs
5.8 ±0.7 ±0.2	352	[113] BEHREND	90	CELL	E^{ee}_{cm}= 35 GeV

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

$\Gamma(3h^-2h^+\nu_\tau$(ex.K^0))/Γ_{total} Γ_{74}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.075±0.007 OUR FIT					
0.073±0.008 OUR AVERAGE					
0.080±0.011±0.013	58	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.077±0.005±0.009	295	GIBAUT	94B	CLEO	E^{ee}_{cm}= 10.6 GeV
0.064±0.023±0.01	12	ALBRECHT	88B	ARG	E^{ee}_{cm}= 10 GeV
0.051±0.020	7	BYLSMA	87	HRS	E^{ee}_{cm}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.067±0.030	5	[114] BELTRAMI	85	HRS	Repl. by BYLSMA 87

[114] The error quoted is statistical only.

$\Gamma(3h^-2h^+\pi^0\nu_\tau(\text{ex.}K^0))/\Gamma_{\text{total}}$ Γ_{75}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.022±0.005 OUR FIT					
0.021±0.005 OUR AVERAGE					
0.018±0.007±0.012	18	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.019±0.004±0.004	31	GIBAUT	94B	CLEO	E_{cm}^{ee}= 10.6 GeV
0.051±0.022	6	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	[115] BELTRAMI	85	HRS	Repl. by BYLSMA 87

[115] The error quoted is statistical only.

$\Gamma(3h^-2h^+2\pi^0\nu_\tau)/\Gamma_{\text{total}}$ Γ_{76}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.011	90	GIBAUT	94B	CLEO	E_{cm}^{ee}= 10.6 GeV

$\Gamma((5\pi)^-\nu_\tau)/\Gamma_{\text{total}}$ Γ_{77}/Γ

$\Gamma_{77}/\Gamma = (\Gamma_{26}+\frac{1}{4}\Gamma_{37}+\Gamma_{60}+\Gamma_{74})/\Gamma$

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 (%)		DOCUMENT ID		TECN	COMMENT
0.33±0.07 OUR FIT					
0.61±0.06±0.08	**avg**	[116] GIBAUT	94B	CLEO	E_{cm}^{ee}= 10.6 GeV

[116] Not independent of GIBAUT 94B B($3h^-2h^+\nu_\tau$), PROCARIO 93 B($h^-4\pi^0\nu_\tau$), and BORTOLETTO 93 B($2h^-h^+2\pi^0\nu_\tau$)/B("3prong") measurements. Result is corrected for η contributions.

$\Gamma(4h^-3h^+\geq 0\text{ neutrals }\nu_\tau(\text{"7-prong"}))/\Gamma_{\text{total}}$ Γ_{78}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.019	90	BYLSMA	87	HRS	E_{cm}^{ee}= 29 GeV

$\Gamma(K^*(892)^-\geq 0(h^0\neq K_S^0)\nu_\tau)/\Gamma_{\text{total}}$ Γ_{79}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.94±0.27±0.15	74	AKERS	94G	OPAL	E_{cm}^{ee}= 88–94 GeV

$\Gamma(K^*(892)^-\geq 0\text{ neutrals }\nu_\tau)/\Gamma_{\text{total}}$ Γ_{80}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.33±0.13 OUR AVERAGE					
$1.19\pm0.15^{+0.13}_{-0.18}$	104	ALBRECHT	95H	ARG	E_{cm}^{ee}= 9.4–10.6 GeV
1.43±0.11±0.13	475	[117] GOLDBERG	90	CLEO	E_{cm}^{ee}= 9.4–10.9 GeV

[117] GOLDBERG 90 estimates that 10% of observed $K^*(892)$ are accompanied by a π^0.

$\Gamma(K^*(892)^-\nu_\tau)/\Gamma_{total}$ Γ_{81}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
1.28±0.08 OUR AVERAGE					
1.39±0.09±0.10		[118] BUSKULIC	96	ALEP	LEP 1991–1993 data
1.11±0.12		[119] COAN	96	CLEO	$E_{cm}^{ee}\approx$ 10.6 GeV
1.42±0.22±0.09		[120] ACCIARRI	95F	L3	1991–1993 LEP runs
$1.23\pm0.21^{+0.11}_{-0.21}$	54	[121] ALBRECHT	88L	ARG	E_{cm}^{ee}= 10 GeV
1.9 ±0.3 ±0.4	44	[122] TSCHIRHART	88	HRS	E_{cm}^{ee}= 29 GeV
1.5 ±0.4 ±0.4	15	[123] AIHARA	87C	TPC	E_{cm}^{ee}= 29 GeV
1.3 ±0.3 ±0.3	31	YELTON	86	MRK2	E_{cm}^{ee}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
1.45±0.13±0.11	273	[124] BUSKULIC	94F	ALEP	Repl. by BUSKULIC 96
1.7 ±0.7	11	DORFAN	81	MRK2	E_{cm}^{ee}= 4.2–6.7 GeV

[118] Not independent of BUSKULIC 96 $B(\pi^-\overline{K}^0\nu_\tau)$ and $B(K^-\pi^0\nu_\tau)$ measurements.

[119] Not independent of COAN 96 $B(\pi^-\overline{K}^0\nu_\tau)$ and BATTLE 94 $B(K^-\pi^0\nu_\tau)$ measurements. $K\pi$ final states are consistent with and assumed to originate from $K^*(892)^-$ production.

[120] This result is obtained from their $B(\pi^-\overline{K}^0\nu_\tau)$ assuming all those decays originate in $K^*(892)^-$ decays.

[121] The authors divide by $\Gamma_1/\Gamma = 0.865$ to obtain this result.

[122] Not independent of TSCHIRHART 88 $\Gamma(\tau^- \to h^-\overline{K}^0 \geq 0$ neutrals $\geq 0K_L^0\nu_\tau)/\Gamma$(total).

[123] Decay π^- identified in this experiment, is assumed in the others.

[124] BUSKULIC 94F obtain this result from BUSKULIC 94F $B(\overline{K}^0\pi^-\nu_\tau)$ and BUSKULIC 94E $B(K^-\pi^0\nu_\tau)$ assuming all of those decays originate in $K^*(892)^-$ decays.

$\Gamma(K^*(892)^-\nu_\tau)/\Gamma(\pi^-\pi^0\nu_\tau)$ Γ_{81}/Γ_{13}

VALUE	DOCUMENT ID		TECN	COMMENT
0.075±0.027	[125] ABREU	94K	DLPH	LEP 1992 Z data

[125] ABREU 94K quote $B(\tau^- \to K^*(892)^-\nu_\tau)B(K^*(892)^- \to K^-\pi^0)/B(\tau^- \to \rho^-\nu_\tau) = 0.025 \pm 0.009$. We divide by $B(K^*(892)^- \to K^-\pi^0) = 0.333$ to obtain this result.

$\Gamma(K^*(892)^0K^- \geq 0$ neutrals $\nu_\tau)/\Gamma_{total}$ Γ_{82}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.32±0.08±0.12	119	GOLDBERG	90	CLEO	E_{cm}^{ee}= 9.4–10.9 GeV

$\Gamma(K^*(892)^0K^-\nu_\tau)/\Gamma_{total}$ Γ_{83}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.20±0.05±0.04	47	ALBRECHT	95H	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

$\Gamma(\overline{K}^*(892)^0\pi^- \geq 0$ neutrals $\nu_\tau)/\Gamma_{total}$ Γ_{84}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.38±0.11±0.13	105	GOLDBERG	90	CLEO	E_{cm}^{ee}= 9.4–10.9 GeV

$\Gamma(\overline{K}^*(892)^0\pi^-\nu_\tau)/\Gamma_{total}$ Γ_{85}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.25±0.10±0.05	27	ALBRECHT	95H	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

$\Gamma(K_1(1270)^-\nu_\tau)/\Gamma_{total}$ Γ_{86}/Γ

VALUE (%)	EVTS		DOCUMENT ID		TECN	COMMENT
$\mathbf{0.41^{+0.41}_{-0.35}\pm0.10}$	5	[126]	BAUER	94	TPC	E_{cm}^{ee}= 29 GeV

[126] We multiply 0.41% by 0.25, the relative systematic error quoted by BAUER 94, to obtain the systematic error.

$\Gamma(K_1(1400)^-\nu_\tau)/\Gamma_{total}$ Γ_{87}/Γ

VALUE (%)	EVTS		DOCUMENT ID		TECN	COMMENT
$\mathbf{0.76^{+0.40}_{-0.33}\pm0.20}$	11	[127]	BAUER	94	TPC	E_{cm}^{ee}= 29 GeV

[127] We multiply 0.76% by 0.25, the relative systematic error quoted by BAUER 94, to obtain the systematic error.

$[\Gamma(K_1(1270)^-\nu_\tau)+\Gamma(K_1(1400)^-\nu_\tau)]/\Gamma_{total}$ $(\Gamma_{86}+\Gamma_{87})/\Gamma$

VALUE (%)	EVTS		DOCUMENT ID		TECN	COMMENT
$\mathbf{1.17^{+0.41}_{-0.37}\pm0.29}$	16	[128]	BAUER	94	TPC	E_{cm}^{ee}= 29 GeV

[128] We multiply 1.17% by 0.25, the relative systematic error quoted by BAUER 94, to obtain the systematic error. Not independent of BAUER 94 B($K_1(1270)^-\nu_\tau$) and BAUER 94 B($K_1(1400)^-\nu_\tau$) measurements.

$\Gamma(K_2^*(1430)^-\nu_\tau)/\Gamma_{total}$ Γ_{88}/Γ

VALUE (%)	CL%	EVTS		DOCUMENT ID		TECN	COMMENT
<0.3	95			TSCHIRHART	88	HRS	E_{cm}^{ee}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •							
<0.33	95		[129]	ACCIARRI	95F	L3	1991–1993 LEP runs
<0.9	95	0		DORFAN	81	MRK2	E_{cm}^{ee}= 4.2–6.7 GeV

[129] ACCIARRI 95F quote B($\tau^- \to K^*(1430)^- \to \pi^-\overline{K}^0\nu_\tau$) < 0.11%. We divide by B($K^*(1430)^- \to \pi^-\overline{K}^0$) = 0.33 to obtain the limit shown.

$\Gamma(a_0(980)^- \geq 0$ neutrals $\nu_\tau)/\Gamma_{total} \times$ B($a_0(980) \to K^0K^-$) $\Gamma_{89}/\Gamma \times$ B

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
$\mathbf{<2.8\times10^{-4}}$	90	GOLDBERG	90	CLEO	E_{cm}^{ee}= 9.4–10.9 GeV

$\Gamma(\eta\pi^-\nu_\tau)/\Gamma_{total}$ Γ_{90}/Γ

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
< 1.4	95	0	BARTELT	96	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
< 3.4	95		ARTUSO	92	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
< 90	95		ALBRECHT	88M	ARG	$E_{cm}^{ee} \approx$ 10 GeV
<140	90		BEHREND	88	CELL	E_{cm}^{ee}= 14–46.8 GeV
<180	95		BARINGER	87	CLEO	E_{cm}^{ee}= 10.5 GeV
<250	90	0	COFFMAN	87	MRK3	E_{cm}^{ee}= 3.77 GeV
510 ±100±120		65	DERRICK	87	HRS	E_{cm}^{ee}= 29 GeV
<100	95		GAN	87B	MRK2	E_{cm}^{ee}= 29 GeV

$\Gamma(\eta\pi^-\pi^0\nu_\tau)/\Gamma_{total}$ Γ_{91}/Γ

VALUE (%)	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
0.171±0.028 OR FIT						
0.17 ±0.02 ±0.02		125	ARTUSO	92	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<1.10	95		ALBRECHT	88M	ARG	$E_{cm}^{ee} \approx$ 10 GeV
<2.10	95		BARINGER	87	CLEO	E_{cm}^{ee}= 10.5 GeV
4.20 $^{+0.70}_{-1.20}$ ±1.60		[130]	GAN	87	MRK2	E_{cm}^{ee}= 29 GeV

[130] Highly correlated with GAN 87 $\Gamma(\pi^- 3\pi^0\nu_\tau)/\Gamma$(total) value.

$\Gamma(\eta\pi^-\pi^0\pi^0\nu_\tau)/\Gamma_{total}$ Γ_{92}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
< 4.3	95	ARTUSO	92	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<120	95	ALBRECHT	88M	ARG	$E_{cm}^{ee} \approx$ 10 GeV

$\Gamma(\eta K^-\nu_\tau)/\Gamma_{total}$ Γ_{93}/Γ

VALUE (units 10^{-4})	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
2.6±0.5±0.5		85	BARTELT	96	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<4.7	95		ARTUSO	92	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV

$\Gamma(\eta\pi^+\pi^-\pi^- \geq 0 \text{ neutrals } \nu_\tau)/\Gamma_{total}$ Γ_{94}/Γ

VALUE (%)	CL%	DOCUMENT ID		TECN	COMMENT
<0.3	90	ABACHI	87B	HRS	E_{cm}^{ee}= 29 GeV

$\Gamma(\eta\eta\pi^-\nu_\tau)/\Gamma_{total}$ Γ_{95}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
< 1.1	95	ARTUSO	92	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<83	95	ALBRECHT	88M	ARG	$E_{cm}^{ee} \approx$ 10 GeV

$\Gamma(\eta\eta\pi^-\pi^0\nu_\tau)/\Gamma_{total}$ Γ_{96}/Γ

VALUE (units 10^{-4})	CL%	DOCUMENT ID		TECN	COMMENT
< 2.0	95	ARTUSO	92	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

<90	95	ALBRECHT	88M	ARG	$E_{cm}^{ee} \approx$ 10 GeV

$\Gamma(h^-\omega \geq 0 \text{ neutrals } \nu_\tau)/\Gamma_{total}$ Γ_{97}/Γ

$\Gamma_{97}/\Gamma = (\Gamma_{98}+\Gamma_{99})/\Gamma$

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
2.32±0.11 OUR FIT						
1.65±0.3 ±0.2	**avg**	1513	ALBRECHT	88M	ARG	$E_{cm}^{ee} \approx$ 10 GeV

$\Gamma(h^-\omega\nu_\tau)/\Gamma_{total}$ Γ_{98}/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
1.91±0.09 OUR FIT						
1.93±0.13 OUR AVERAGE						
1.95±0.07±0.11	avg	2223	[131] BALEST	95C	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV
1.60±0.27±0.41	f&a	139	BARINGER	87	CLEO	E_{cm}^{ee}= 10.5 GeV

[131] Not independent of BALEST 95C $B(\tau^- \to h^-\omega\nu_\tau)/B(\tau^- \to h^-h^-h^+\pi^0\nu_\tau)$ value.

$[\Gamma(h^-\rho\pi^0\nu_\tau)+\Gamma(h^-\rho^+h^-\nu_\tau)+\Gamma(h^-\rho^-h^+\nu_\tau)+\Gamma(h^-\omega\nu_\tau)]/\Gamma(h^-h^-h^+\pi^0\nu_\tau)$ $(\Gamma_{55}+\Gamma_{56}+\Gamma_{57}+\Gamma_{98})/\Gamma_{50}$

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
>0.81	95	[132] ALBRECHT	91D	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

[132] ALBRECHT 91D not independent of their $\Gamma(h^-\omega\nu_\tau)/\Gamma(h^-h^-h^+\pi^0\nu_\tau(\text{ex.}K^0))$, $\Gamma(h^-\rho\pi^0\nu_\tau)/\Gamma(h^-h^-h^+\pi^0\nu_\tau)$, $\Gamma(h^-\rho^+h^-\nu_\tau)/\Gamma(h^-h^-h^+\pi^0\nu_\tau)$, and $\Gamma(h^-\rho^-h^+\nu_\tau)/\Gamma(h^-h^-h^+\pi^0\nu_\tau)$ values.

$\Gamma(h^-\omega\nu_\tau)/\Gamma(h^-h^-h^+\pi^0\nu_\tau(\text{ex.}K^0))$ Γ_{98}/Γ_{51}

$\Gamma_{98}/\Gamma_{51} = \Gamma_{98}/(\Gamma_{52}+0.888\Gamma_{98}+0.0221\Gamma_{99})$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.448±0.019 OUR FIT					
0.453±0.019 OUR AVERAGE					
0.431±0.033	2350	[133] BUSKULIC	96	ALEP	LEP 1991–1993 data
0.464±0.016±0.017	2223	[134] BALEST	95C	CLEO	$E_{cm}^{ee} \approx$ 10.6 GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

0.37 ±0.05 ±0.02	458	[135] ALBRECHT	91D	ARG	E_{cm}^{ee}= 9.4–10.6 GeV

[133] BUSKULIC 96 quote the fraction of $\tau \to h^-h^-h^+\pi^0\nu_\tau$(ex. K^0) decays which originate in a $h^-\omega$ final state = 0.383 ± 0.029. We divide this by the $\omega(782) \to \pi^+\pi^-\pi^0$ branching fraction (0.888).

[134] BALEST 95C quote the fraction of $\tau^- \to h^- h^- h^+ \pi^0 \nu_\tau$ (ex. K^0) decays which originate in a $h^- \omega$ final state equals 0.412 ± 0.014 ± 0.015. We divide this by the $\omega(782) \to \pi^+ \pi^- \pi^0$ branching fraction (0.888).

[135] ALBRECHT 91D quote the fraction of $\tau^- \to h^- h^- h^+ \pi^0 \nu_\tau$ decays which originate in a $\pi^- \omega$ final state equals $0.33 \pm 0.04 \pm 0.02$. We divide this by the $\omega(782) \to \pi^+ \pi^- \pi^0$ branching fraction (0.888).

$\Gamma(h^- \omega \pi^0 \nu_\tau)/\Gamma_{total}$ Γ_{99}/Γ

VALUE (%)	*DOCUMENT ID*
0.41±0.06 OUR FIT	

$\Gamma(h^- \omega \pi^0 \nu_\tau)/\Gamma(h^- h^- h^+ \geq 0$neut. ν_τ("3-prong")) Γ_{99}/Γ_{42}

$\Gamma_{99}/\Gamma_{42} = \Gamma_{99}/(0.3431\Gamma_{30}+0.3431\Gamma_{32}+0.3431\Gamma_{34}+0.3431\Gamma_{35}+0.4508\Gamma_{37}+\Gamma_{47}+\Gamma_{52}+\Gamma_{60}+\Gamma_{61}+0.285\Gamma_{91}+0.9101\Gamma_{98}+0.9101\Gamma_{99})$

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*
0.028±0.004 OUR FIT					
0.028±0.003±0.003	**avg**	430	[136] BORTOLETTO93	CLEO	$E_{cm}^{ee} \approx 10.6$ GeV

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

$\Gamma(h^- \omega \pi^0 \nu_\tau)/\Gamma(h^- h^- h^+ 2\pi^0 \nu_\tau$(ex.$K^0$)) Γ_{99}/Γ_{59}

$\Gamma_{99}/\Gamma_{59} = \Gamma_{99}/(\Gamma_{60}+0.236\Gamma_{91}+0.888\Gamma_{99})$