τ –THIS IS PART 3 OF 5

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

PART 1

PART 2

PART 3

PART 4

PART 5

τ^- BRANCHING RATIOS

$\Gamma(\text{particle}^- \geq 0 \text{ neutrals} \geq 0K^0_L\nu_\tau(\text{"1-prong"}))/\Gamma_{\text{total}}$ Γ_1/Γ

$\Gamma_1/\Gamma = (\Gamma_3+\Gamma_5+\Gamma_9+\Gamma_{10}+\Gamma_{13}+\Gamma_{15}+\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+0.6569\Gamma_{30}+0.6569\Gamma_{32}+0.6569\Gamma_{34}+0.6569\Gamma_{35}+0.4316\Gamma_{37}+0.708\Gamma_{90}+0.085\Gamma_{97}+0.085\Gamma_{98})/\Gamma$

The charged particle here can be e, μ, or hadron. In many analyses, the sum of the topological branching fractions (1, 3, and 5 prongs) is constrained to be unity. Since the 5-prong fraction is very small, the measured 1-prong and 3-prong fractions are highly correlated and cannot be treated as independent quantities in our overall fit. We arbitrarily choose to use the 3-prong fraction in our fit, and leave the 1-prong fraction out. We do, however, use these 1-prong measurements in our average below. The measurements used only for the average are marked "avg," whereas "f&a" marks a result used for the fit and the average.

VALUE (%)		EVTS	DOCUMENT ID		TECN	COMMENT
84.96±0.14 OUR FIT Error includes scale factor of 1.3.						
85.90±0.30 OUR AVERAGE Error includes scale factor of 1.2.						
85.6 ±0.6 ±0.3	avg	3300	[11] ADEVA	91F	L3	E^{ee}_{cm}= 88.3–94.3 GeV
86.4 ±0.3 ±0.3	avg		ABACHI	89B	HRS	E^{ee}_{cm}= 29 GeV
84.9 ±0.4 ±0.3	avg		BEHREND	89B	CELL	E^{ee}_{cm}= 14–47 GeV
84.7 ±0.8 ±0.6	avg		[12] AIHARA	87B	TPC	E^{ee}_{cm}= 29 GeV
87.2 ±0.5 ±0.8	avg		SCHMIDKE	86	MRK2	E^{ee}_{cm}= 29 GeV
84.7 ±1.1 $^{+1.6}_{-1.3}$	avg	169	[13] ALTHOFF	85	TASS	E^{ee}_{cm}= 34.5 GeV
86.1 ±0.5 ±0.9	avg		BARTEL	85F	JADE	E^{ee}_{cm}= 34.6 GeV
86.7 ±0.3 ±0.6	avg		FERNANDEZ	85	MAC	E^{ee}_{cm}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
87.1 ±1.0 ±0.7			[14] BURCHAT	87	MRK2	E^{ee}_{cm}= 29 GeV
87.8 ±1.3 ±3.9			[15] BERGER	85	PLUT	E^{ee}_{cm}= 34.6 GeV

[11] Not independent of ADEVA 91F $\Gamma(h^- h^- h^+ \geq 0\text{neut.}\ \nu_\tau(\text{"3-prong"}))/\Gamma_{\text{total}}$ value.

[12] Not independent of AIHARA 87B $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma_{\text{total}}$, $\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma_{\text{total}}$, and $\Gamma(h^- \geq 0 \text{ neutrals} \geq 0K^0_L\ \nu_\tau)/\Gamma_{\text{total}}$ values.

[13] Not independent of ALTHOFF 85 $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma_{\text{total}}$, $\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma_{\text{total}}$, $\Gamma(h^- \geq 0 \text{ neutrals} \geq 0K^0_L\ \nu_\tau)/\Gamma_{\text{total}}$, and $\Gamma(h^- h^- h^+ \geq 0\text{neut.}\ \nu_\tau(\text{"3-prong"}))/\Gamma_{\text{total}}$ values.

[14] Not independent of SCHMIDKE 86 value (also not independent of BURCHAT 87 value for $\Gamma(h^- h^- h^+ \geq 0\text{neut.}\ \nu_\tau(\text{"3-prong"}))/\Gamma_{\text{total}}$.

[15] Not independent of (1-prong + $0\pi^0$) and (1-prong + $\geq 1\pi^0$) values.

$\Gamma(\text{particle}^- \geq 0 \text{ neutrals} \geq 0K^0\nu_\tau)/\Gamma_{\text{total}}$ Γ_2/Γ

$\Gamma_2/\Gamma = (\Gamma_3+\Gamma_5+\Gamma_9+\Gamma_{10}+\Gamma_{13}+\Gamma_{15}+\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+\Gamma_{30}+\Gamma_{32}+\Gamma_{34}+\Gamma_{35}+\Gamma_{37}+0.708\Gamma_{90}+0.085\Gamma_{97}+0.085\Gamma_{98})/\Gamma$

VALUE (%)		DOCUMENT ID		TECN	COMMENT
85.53±0.14 OUR FIT Error includes scale factor of 1.3.					
84.59±0.33 OUR AVERAGE					
84.48±0.27±0.23	avg	ACTON	92H	OPAL	1990–1991 LEP runs
85.45 $^{+0.69}_{-0.73}$ ±0.65	f&a	DECAMP	92C	ALEP	1989–1990 LEP runs

$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma_{\text{total}}$ Γ_3/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.

To minimize the effect of experiments with large systematic errors, we exclude experiments which together would contribute 5% of the weight in the average.

VALUE (%)		EVTS	DOCUMENT ID		TECN	COMMENT
17.35±0.10 OUR FIT						
17.30±0.10 OUR AVERAGE						
17.31±0.11±0.05	f&a	20.7k	BUSKULIC	96C	ALEP	1991–1993 LEP runs
17.02±0.19±0.24	f&a	6586	ABREU	95T	DLPH	1991–1992 LEP runs
17.36±0.27	f&a	7941	AKERS	95I	OPAL	1990–1992 LEP runs
17.6 ±0.4 ±0.4	f&a	2148	ADRIANI	93M	L3	E^{ee}_{cm}= 88–94 GeV
17.2 ±0.4 ±0.5	avg		[16] ALBRECHT	92D	ARG	E^{ee}_{cm}= 9.4–10.6 GeV
17.35±0.41±0.37	f&a		DECAMP	92C	ALEP	1989–1990 LEP runs
17.7 ±0.8 ±0.4	f&a	568	BEHREND	90	CELL	E^{ee}_{cm}= 35 GeV
17.4 ±1.0	f&a	2197	ADEVA	88	MRKJ	E^{ee}_{cm}= 14–16 GeV

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

17.7 ±1.2 ±0.7			AIHARA	87B	TPC	E^{ee}_{cm}= 29 GeV
18.3 ±0.9 ±0.8			BURCHAT	87	MRK2	E^{ee}_{cm}= 29 GeV
18.6 ±0.8 ±0.7	558	[17]	BARTEL	86D	JADE	E^{ee}_{cm}= 34.6 GeV
12.9 ±1.7 $^{+0.7}_{-0.5}$			ALTHOFF	85	TASS	E^{ee}_{cm}= 34.5 GeV
18.0 ±0.9 ±0.5	473	[17]	ASH	85B	MAC	E^{ee}_{cm}= 29 GeV
18.0 ±1.0 ±0.6		[18]	BALTRUSAIT...	85	MRK3	E^{ee}_{cm}= 3.77 GeV
19.4 ±1.6 ±1.7	153		BERGER	85	PLUT	E^{ee}_{cm}= 34.6 GeV
17.6 ±2.6 ±2.1	47		BEHREND	83C	CELL	E^{ee}_{cm}= 34 GeV
17.8 ±2.0 ±1.8			BERGER	81B	PLUT	E^{ee}_{cm}= 9–32 GeV

[16] Not independent of ALBRECHT 92D $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma(e^-\overline{\nu}_e\nu_\tau)$ and $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau) \times \Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma_{\rm total}$.

[17] Modified using B($e^-\overline{\nu}_e\nu_\tau$)/B("1 prong") and B("1 prong") ,= 0.855.

[18] Error correlated with BALTRUSAITIS 85 $e\nu\overline{\nu}$ value.

$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma$(particle$^-$ $\geq$ 0 neutrals $\geq 0K^0_L\nu_\tau$("1-prong")) Γ_3/Γ_1

$\Gamma_3/\Gamma_1 = \Gamma_3/(\Gamma_3+\Gamma_5+\Gamma_9+\Gamma_{10}+\Gamma_{13}+\Gamma_{15}+\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+ 0.6569\Gamma_{30}+0.6569\Gamma_{32}+0.6569\Gamma_{34}+0.6569\Gamma_{35}+0.4316\Gamma_{37}+0.708\Gamma_{90}+0.085\Gamma_{97}+ 0.085\Gamma_{98})$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.2042±0.0011 OUR FIT					
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.217 ±0.009 ±0.008		BARTEL	86D	JADE	E^{ee}_{cm}= 34.6 GeV
0.211 ±0.010 ±0.006	390	ASH	85B	MAC	E^{ee}_{cm}= 29 GeV

$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau\gamma)/\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)$ Γ_4/Γ_3

E_γ > 37 MeV.

VALUE	EVTS		DOCUMENT ID		TECN	COMMENT
0.013±0.006	10	[19]	WU	90	MRK2	E^{ee}_{cm}= 29 GeV

[19] Requirements on detected γ's correspond to a τ rest frame energy cutoff E_γ > 37 MeV.

$\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma_{\rm total}$ Γ_5/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.

To minimize the effect of experiments with large systematic errors, we exclude experiments which together would contribute 5% of the weight in the average.

VALUE (%)		EVTS		DOCUMENT ID		TECN	COMMENT
17.83±0.08 OUR FIT							
17.80±0.08 OUR AVERAGE							
17.78±0.10±0.09	f&a	25.3k		ALEXANDER	96D	OPAL	1991–1994 LEP runs
17.79±0.12±0.06	f&a	20.6k		BUSKULIC	96C	ALEP	1991–1993 LEP runs
17.51±0.23±0.31	f&a	5059		ABREU	95T	DLPH	1991–1992 LEP runs
17.9 ±0.4 ±0.4	f&a	2892		ADRIANI	93M	L3	E^{ee}_{cm}= 88–94 GeV
17.97±0.14±0.23	f&a	3970		AKERIB	92	CLEO	E^{ee}_{cm}= 10.6 GeV
17.3 ±0.4 ±0.5	avg		[20]	ALBRECHT	92D	ARG	E^{ee}_{cm}= 9.4–10.6 GeV
19.1 ±0.4 ±0.6	avg	2960	[21]	AMMAR	92	CLEO	E^{ee}_{cm}= 10.5–10.9 GeV
18.09±0.45±0.45	f&a			DECAMP	92C	ALEP	1989–1990 LEP runs
17.0 ±0.5 ±0.6	f&a	1.7k		ABACHI	90	HRS	E^{ee}_{cm}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •							
18.4 ±0.8 ±0.4		644		BEHREND	90	CELL	E^{ee}_{cm}= 35 GeV
16.3 ±0.3 ±3.2				JANSSEN	89	CBAL	E^{ee}_{cm}= 9.4–10.6 GeV
18.4 ±1.2 ±1.0				AIHARA	87B	TPC	E^{ee}_{cm}= 29 GeV
19.1 ±0.8 ±1.1				BURCHAT	87	MRK2	E^{ee}_{cm}= 29 GeV
16.8 ±0.7 ±0.9		515	[21]	BARTEL	86D	JADE	E^{ee}_{cm}= 34.6 GeV
20.4 ±3.0 $^{+1.4}_{-0.9}$				ALTHOFF	85	TASS	E^{ee}_{cm}= 34.5 GeV
17.8 ±0.9 ±0.6		390	[21]	ASH	85B	MAC	E^{ee}_{cm}= 29 GeV
18.2 ±0.7 ±0.5			[22]	BALTRUSAIT...	85	MRK3	E^{ee}_{cm}= 3.77 GeV
13.0 ±1.9 ±2.9				BERGER	85	PLUT	E^{ee}_{cm}= 34.6 GeV
18.3 ±2.4 ±1.9		60		BEHREND	83C	CELL	E^{ee}_{cm}= 34 GeV
16.0 ±1.3		459	[23]	BACINO	78B	DLCO	E^{ee}_{cm}= 3.1–7.4 GeV

[20] Not independent of ALBRECHT 92D $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma(e^-\overline{\nu}_e\nu_\tau)$ and $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)\times\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma_{\rm total}$.

[21] Modified using B($e^-\overline{\nu}_e\nu_\tau$)/B("1 prong") and B("1 prong") ,= 0.855.

[22] Error correlated with BALTRUSAITIS 85 $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma_{\rm total}$.

[23] BACINO 78B value comes from fit to events with $e^\pm$ and one other nonelectron charged prong.

$\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma(\text{particle}^- \geq 0\text{ neutrals} \geq 0K^0_L\nu_\tau(\text{"1-prong"}))$ — Γ_5/Γ_1

$\Gamma_5/\Gamma_1 = \Gamma_5/(\Gamma_3+\Gamma_5+\Gamma_9+\Gamma_{10}+\Gamma_{13}+\Gamma_{15}+\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+0.6569\Gamma_{30}+0.6569\Gamma_{32}+0.6569\Gamma_{34}+0.6569\Gamma_{35}+0.4316\Gamma_{37}+0.708\Gamma_{90}+0.085\Gamma_{97}+0.085\Gamma_{98})$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.2099±0.0010 OUR FIT	Error includes scale factor of 1.1.			
0.2231±0.0044±0.0073	2856	AMMAR 92	CLEO	$E^{ee}_{\rm cm}$= 10.5–10.9 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.196 ±0.008 ±0.010		BARTEL 86D	JADE	$E^{ee}_{\rm cm}$= 34.6 GeV
0.208 ±0.010 ±0.007	390	ASH 85B	MAC	$E^{ee}_{\rm cm}$= 29 GeV

$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau) \times \Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma^2_{\rm total}$ — $\Gamma_3\Gamma_5/\Gamma^2$

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.03094±0.00022 OUR FIT				
0.0306 ±0.0005 ±0.0013	3230	ALBRECHT 93G	ARG	$E^{ee}_{\rm cm}$= 9.4–10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.0288 ±0.0017 ±0.0019		ASH 85B	MAC	$E^{ee}_{\rm cm}$= 29 GeV

$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma(e^-\overline{\nu}_e\nu_\tau)$ — Γ_3/Γ_5

Predicted to be 1 for sequential lepton, 1/2 for para-electron, and 2 for para-muon. Para-electron also ruled out by HEILE 78.

VALUE	DOCUMENT ID	TECN	COMMENT
0.973±0.007 OUR FIT			
0.997±0.035±0.040	ALBRECHT 92D	ARG	$E^{ee}_{\rm cm}$= 9.4–10.6 GeV

$\Gamma(h^- \geq 0\text{ neutrals} \geq 0K^0_L\,\nu_\tau)/\Gamma_{\rm total}$ — Γ_6/Γ

$\Gamma_6/\Gamma = (\Gamma_9+\Gamma_{10}+\Gamma_{13}+\Gamma_{15}+\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+0.6569\Gamma_{30}+0.6569\Gamma_{32}+0.6569\Gamma_{34}+0.6569\Gamma_{35}+0.4316\Gamma_{37}+0.708\Gamma_{90}+0.085\Gamma_{97}+0.085\Gamma_{98})/\Gamma$

VALUE (%)		DOCUMENT ID	TECN	COMMENT
49.78±0.17 OUR FIT	Error includes scale factor of 1.2.			
48.6 ±1.2 ±0.9	**avg**	[24] AIHARA 87B	TPC	$E^{ee}_{\rm cm}$= 29 GeV

[24] Not independent of AIHARA 87B $e\nu\overline{\nu}$, $\mu\nu\overline{\nu}$, and $\pi^+2\pi^-(\geq 0\pi^0)\nu$ values.

$\Gamma(h^- \geq 0K^0_L\,\nu_\tau)/\Gamma_{\rm total}$ — Γ_7/Γ

$\Gamma_7/\Gamma = (\Gamma_9+\Gamma_{10}+\frac{1}{2}\Gamma_{30}+\frac{1}{2}\Gamma_{32}+\frac{1}{4}\Gamma_{37})/\Gamma$

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
12.51±0.13 OUR FIT	Error includes scale factor of 1.1.				
12.44±0.14 OUR AVERAGE					
12.44±0.11±0.11	f&a	15k	[25] BUSKULIC 96	ALEP	1991–1993 LEP run
12.47±0.26±0.43	f&a	2967	[26] ACCIARRI 95	L3	1992 LEP run
12.4 ±0.7 ±0.7	f&a	283	[27] ABREU 92N	DLPH	1990 LEP run
12.98±0.44±0.33	f&a		[28] DECAMP 92C	ALEP	1989–1990 LEP runs
12.1 ±0.7 ±0.5	f&a	309	ALEXANDER 91D	OPAL	1990 LEP run
12.3 ±0.9 ±0.5	f&a	1338	BEHREND 90	CELL	$E^{ee}_{\rm cm}$= 35 GeV
11.3 ±0.5 ±0.8	avg	798	[29] FORD 87	MAC	$E^{ee}_{\rm cm}$= 29 GeV
12.3 ±0.6 ±1.1	avg	328	[30] BARTEL 86D	JADE	$E^{ee}_{\rm cm}$= 34.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
11.1 ±1.1 ±1.4			[31] BURCHAT 87	MRK2	$E^{ee}_{\rm cm}$= 29 GeV
13.0 ±2.0 ±4.0			BERGER 85	PLUT	$E^{ee}_{\rm cm}$= 34.6 GeV
11.2 ±1.7 ±1.2		34	[32] BEHREND 83C	CELL	$E^{ee}_{\rm cm}$= 34 GeV

[25] BUSKULIC 96 quote 11.78 ± 0.11 ± 0.13 We add 0.66 to undo their correction for unseen K^0_L and modify the systematic error accordingly.

[26] ACCIARRI 95 with 0.65% added to remove their correction for $\pi^- K^0_L$ backgrounds.

[27] ABREU 92N with 0.5% added to remove their correction for $K^*(892)^-$ backgrounds.

[28] DECAMP 92C quote B($h^- \geq 0K_L^0 \geq 0\,(K_S^0 \to \pi^+\pi^-)\,\nu_\tau$) = 13.32 ± 0.44 ± 0.33. We subtract 0.35 to correct for their inclusion of the K_S^0 decays.

[29] FORD 87 result for B($\pi^-\nu_\tau$) with 0.67% added to remove their K^- correction and adjusted for 1992 B("1 prong").

[30] BARTEL 86D result for B($\pi^-\nu_\tau$) with 0.59% added to remove their K^- correction and adjusted for 1992 B("1 prong").

[31] BURCHAT 87 with 1.1% added to remove their correction for K^- and $K^*(892)^-$ backgrounds.

[32] BEHREND 83C quote B($\pi^-\nu_\tau$) = 9.9 ± 1.7 ± 1.3 after subtracting 1.3 ± 0.5 to correct for B($K^-\nu_\tau$).

$\Gamma(h^- \geq 0K_L^0\,\nu_\tau)/\Gamma(\text{particle}^- \geq 0\text{ neutrals} \geq 0K_L^0\nu_\tau\,(\text{"1-prong"}))$ Γ_7/Γ_1

$\Gamma_7/\Gamma_1 = (\Gamma_9+\Gamma_{10}+\frac{1}{2}\Gamma_{30}+\frac{1}{2}\Gamma_{32}+\frac{1}{4}\Gamma_{37})/(\Gamma_3+\Gamma_5+\Gamma_9+\Gamma_{10}+\Gamma_{13}+\Gamma_{15}+\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+0.6569\Gamma_{30}+0.6569\Gamma_{32}+0.6569\Gamma_{34}+0.6569\Gamma_{35}+0.4316\Gamma_{37}+0.708\Gamma_{90}+0.085\Gamma_{97}+0.085\Gamma_{98})$

VALUE	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.1473±0.0015 OUR FIT Error includes scale factor of 1.1.					
0.135 ±0.009 OUR AVERAGE					
0.131 ±0.006 ±0.009	798	[33] FORD	87	MAC	$E_{\rm cm}^{ee}$= 29 GeV
0.143 ±0.007 ±0.013	328	[34] BARTEL	86D	JADE	$E_{\rm cm}^{ee}$= 34.6 GeV

[33] FORD 87 result divided by 0.865, their assumed value for B("1 prong").

[34] BARTEL 86D result with 0.6% added to remove their K^- correction and then divided by 0.866, their assumed value for B("1 prong").

$\Gamma(h^- \geq 0K_L^0\,\nu_\tau)/\Gamma(e^-\overline{\nu}_e\nu_\tau)$ Γ_7/Γ_5

$\Gamma_7/\Gamma_5 = (\Gamma_9+\Gamma_{10}+\frac{1}{2}\Gamma_{30}+\frac{1}{2}\Gamma_{32}+\frac{1}{4}\Gamma_{37})/\Gamma_5$

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
0.702±0.008 OUR FIT Error includes scale factor of 1.1.				
0.678±0.037±0.044	ALBRECHT	92D	ARG	$E_{\rm cm}^{ee}$= 9.4–10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.647±0.039±0.061	[35] BARTEL	86D	JADE	$E_{\rm cm}^{ee}$= 34.6 GeV

[35] Combined result of BARTEL 86D $e\nu\overline{\nu}$, $\mu\nu\overline{\nu}$, and $\pi^-\nu$ assuming B($\mu\nu\overline{\nu}$)/B($e\nu\overline{\nu}$) = 0.973.

$\Gamma(h^-\nu_\tau)/\Gamma_{\rm total}$ $\Gamma_8/\Gamma = (\Gamma_9+\Gamma_{10})/\Gamma$

VALUE	*DOCUMENT ID*
0.1203±0.0014 OUR FIT Error includes scale factor of 1.1.	

$\Gamma(\pi^-\nu_\tau)/\Gamma_{\rm total}$ Γ_9/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*
11.31±0.15 OUR FIT Error includes scale factor of 1.1.						
11.07±0.18 OUR AVERAGE						
11.06±0.11±0.14	avg		[36] BUSKULIC	96	ALEP	LEP 1991–1993 data
11.7 ±0.4 ±1.8	f&a	1138	BLOCKER	82D	MRK2	$E_{\rm cm}^{ee}$= 3.5–6.7 GeV

[36] Not independent of BUSKULIC 96 B($h^-\nu_\tau$) and B($K^-\nu_\tau$) values.

$\Gamma(K^-\nu_\tau)/\Gamma_{\rm total}$ Γ_{10}/Γ

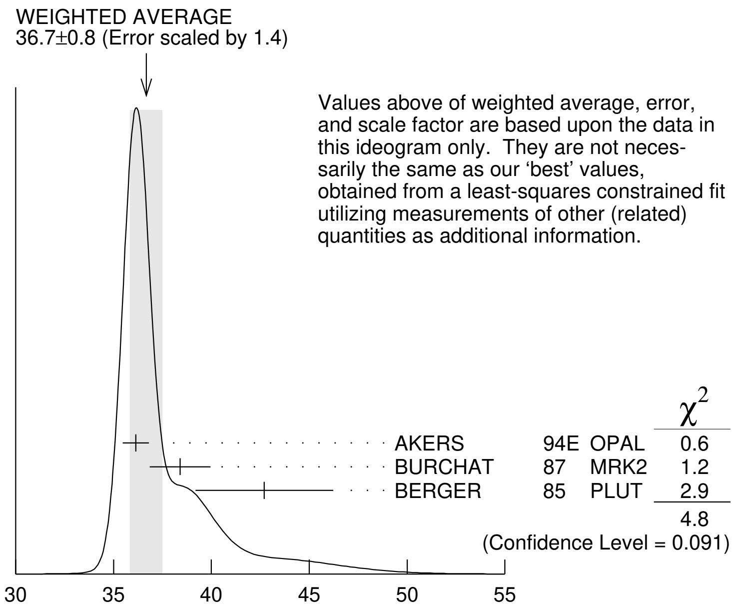
VALUE (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
0.71±0.05 OUR FIT					
0.71±0.05 OUR AVERAGE					
0.72±0.04±0.04	728	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.85±0.18	27	ABREU	94K	DLPH	LEP 1992 Z data
0.66±0.07±0.09	99	BATTLE	94	CLEO	$E_{\rm cm}^{ee} \approx$ 10.6 GeV
0.59±0.18	16	MILLS	84	DLCO	$E_{\rm cm}^{ee}$= 29 GeV
1.3 ±0.5	15	BLOCKER	82B	MRK2	$E_{\rm cm}^{ee}$= 3.9–6.7 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.64±0.05±0.05	336	BUSKULIC	94E	ALEP	Repl. by BUSKULIC 96

$\Gamma(h^- \geq 1\pi^0 \nu_\tau)/\Gamma_{\text{total}}$ Γ_{11}/Γ

$\Gamma_{11}/\Gamma = (\Gamma_{13}+\Gamma_{15}+\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+0.157\Gamma_{30}+0.157\Gamma_{32}+0.157\Gamma_{34}+0.157\Gamma_{35}+0.0246\Gamma_{37}+0.708\Gamma_{90}+0.085\Gamma_{97}+0.085\Gamma_{98})/\Gamma$

VALUE (%)	DOCUMENT ID		TECN	COMMENT
36.97±0.18 OUR FIT	Error includes scale factor of 1.1.			
36.7 ±0.8 OUR AVERAGE	Error includes scale factor of 1.4. See the ideogram below.			
36.14±0.33±0.58	AKERS	94E	OPAL	1991–1992 LEP runs
38.4 ±1.2 ±1.0	[37] BURCHAT	87	MRK2	E^{ee}_{cm}= 29 GeV
42.7 ±2.0 ±2.9	BERGER	85	PLUT	E^{ee}_{cm}= 34.6 GeV

[37] BURCHAT 87 quote for B($\pi^\pm \geq 1$ neutral ν_τ) = 0.378 ± 0.012 ± 0.010. We add 0.006 to account for contribution from ($K^{*-}\nu_\tau$) which they fixed at BR = 0.013.



$\Gamma\left(h^- \geq 1\pi^0 \nu_\tau\right)/\Gamma_{\text{total}}$ (%)

$\Gamma(h^- \pi^0 \nu_\tau)/\Gamma_{\text{total}}$ $\Gamma_{12}/\Gamma = (\Gamma_{13}+\Gamma_{15})/\Gamma$

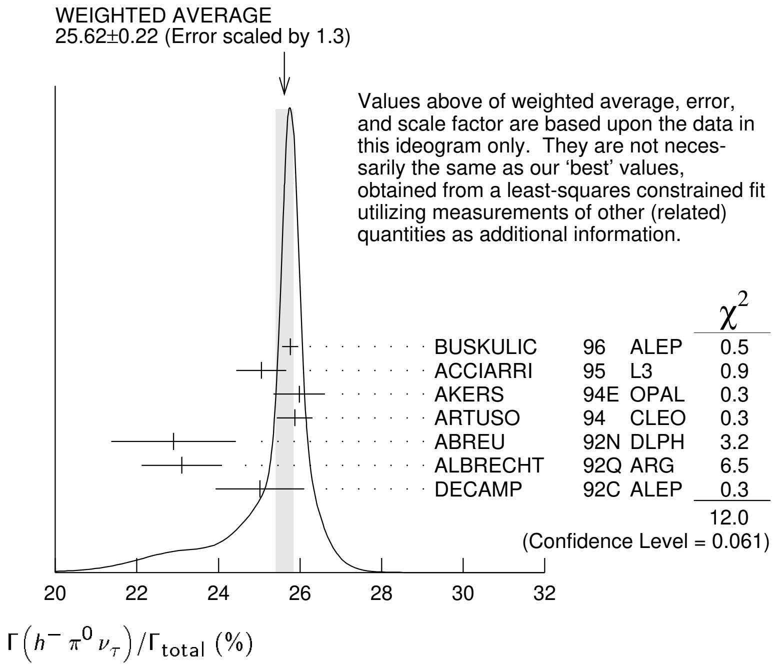
VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
25.76±0.15 OUR FIT	Error includes scale factor of 1.1.				
25.62±0.22 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.				
25.76±0.15±0.13	31k	BUSKULIC	96	ALEP	LEP 1991–1993 data
25.05±0.35±0.50	6613	ACCIARRI	95	L3	1992 LEP run
25.98±0.36±0.52		[38] AKERS	94E	OPAL	1991–1992 LEP runs
25.87±0.12±0.42	51k	[39] ARTUSO	94	CLEO	E^{ee}_{cm}= 10.6 GeV
22.9 ±0.8 ±1.3	283	[40] ABREU	92N	DLPH	E^{ee}_{cm}= 88.2–94.2 GeV
23.1 ±0.4 ±0.9	1249	[41] ALBRECHT	92Q	ARG	E^{ee}_{cm}= 10 GeV
25.02±0.64±0.88	1849	DECAMP	92C	ALEP	1989–1990 LEP runs
• • • We do not use the following data for averages, fits, limits, etc. • • •					
22.0 ±0.8 ±1.9	779	ANTREASYAN	91	CBAL	E^{ee}_{cm}= 9.4–10.6 GeV
22.6 ±1.5 ±0.7	1101	BEHREND	90	CELL	E^{ee}_{cm}= 35 GeV
23.1 ±1.9 ±1.6		BEHREND	84	CELL	E^{ee}_{cm}= 14,22 GeV

[38] AKERS 94E quote $(26.25 \pm 0.36 \pm 0.52) \times 10^{-2}$; we subtract 0.27% from their number to correct for $\tau^- \rightarrow h^- K^0_L \nu_\tau$.

[39] ARTUSO 94 reports the combined result from three independent methods, one of which (23% of the $\tau^- \rightarrow h^- \pi^0 \nu_\tau$) is normalized to the inclusive one-prong branching fraction, taken as 0.854 ± 0.004. Renormalization to the present value causes negligible change.

[40] ABREU 92N with 0.5% added to remove their correction for $K^*(892)^-$ backgrounds.

[41] ALBRECHT 92Q with 0.5% added to remove their correction for $\tau^- \rightarrow K^*(892)^- \nu_\tau$ background.



$\Gamma(\pi^- \pi^0 \nu_\tau)/\Gamma_{total}$ Γ_{13}/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
25.24±0.16 OUR FIT Error includes scale factor of 1.1.						
25.31±0.18 OUR AVERAGE						
25.30±0.15±0.13	avg		[42] BUSKULIC	96	ALEP	LEP 1991–1993 data
25.36±0.44	avg		[43] ARTUSO	94	CLEO	E^{ee}_{cm}= 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
21.5 ±0.4 ±1.9		4400	[44,45] ALBRECHT	88L	ARG	E^{ee}_{cm}= 10 GeV
23.0 ±1.3 ±1.7		582	ADLER	87B	MRK3	E^{ee}_{cm}= 3.77 GeV
25.8 ±1.7 ±2.5			[46] BURCHAT	87	MRK2	E^{ee}_{cm}= 29 GeV
22.3 ±0.6 ±1.4		629	[45] YELTON	86	MRK2	E^{ee}_{cm}= 29 GeV

[42] Not independent of BUSKULIC 96 $B(h^- \pi^0 \nu_\tau)$ and $B(K^- \pi^0 \nu_\tau)$ values.
[43] Not independent of ARTUSO 94 $B(h^- \pi^0 \nu_\tau)$ and BATTLE 94 $B(K^- \pi^0 \nu_\tau)$ values.
[44] The authors divide by $(\Gamma_3 + \Gamma_5 + \Gamma_9 + \Gamma_{10})/\Gamma = 0.467$ to obtain this result.
[45] Experiment had no hadron identification. Kaon corrections were made, but insufficient information is given to permit their removal.
[46] BURCHAT 87 value is not independent of YELTON 86 value. Nonresonant decays included.

$\Gamma(\pi^- \pi^0 \text{non-}\rho(770) \nu_\tau)/\Gamma_{total}$ Γ_{14}/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
0.3 ±0.1 ±0.3	[47] BEHREND	84	CELL	E^{ee}_{cm}= 14,22 GeV

[47] BEHREND 84 assume a flat nonresonant mass distribution down to the $\rho(770)$ mass, using events with mass above 1300 to set the level.

$\Gamma(K^- \pi^0 \nu_\tau)/\Gamma_{total}$ Γ_{15}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.52±0.05 OUR FIT					
0.52±0.06 OUR AVERAGE					
0.52±0.04±0.05	395	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.51±0.10±0.07	37	BATTLE	94	CLEO	$E^{ee}_{cm} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.53±0.05±0.07	220	BUSKULIC	94E	ALEP	Repl. by BUSKULIC 96

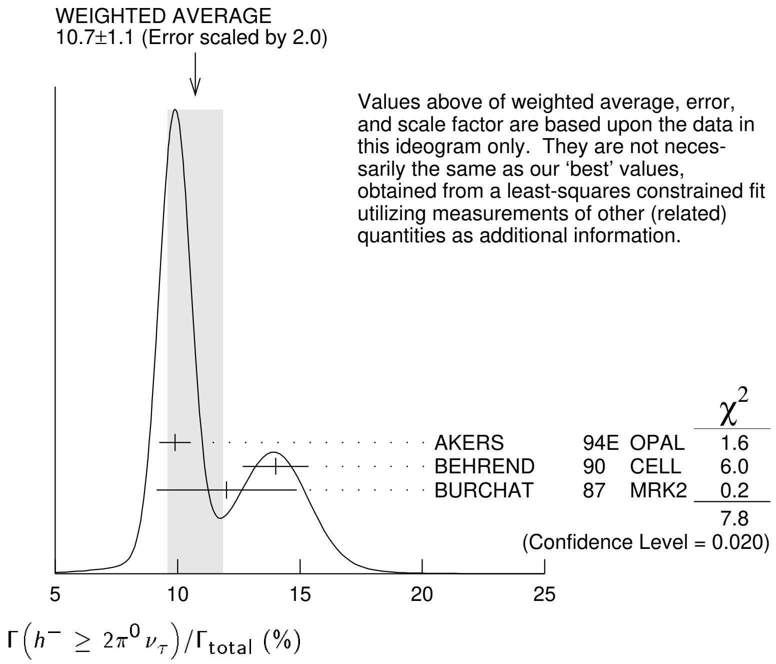
$\Gamma(h^- \geq 2\pi^0 \nu_\tau)/\Gamma_{\text{total}}$ Γ_{16}/Γ

$\Gamma_{16}/\Gamma = (\Gamma_{19}+\Gamma_{20}+\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+0.157\Gamma_{30}+0.157\Gamma_{32}+0.157\Gamma_{34}+0.157\Gamma_{35}+0.0246\Gamma_{37}+0.319\Gamma_{90})/\Gamma$

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*
10.95±0.16 OUR FIT	Error includes scale factor of 1.1.					
10.7 ±1.1 OUR AVERAGE	Error includes scale factor of 2.0. See the ideogram below.					
9.89±0.34±0.55	avg		[48] AKERS	94E	OPAL	1991–1992 LEP runs
14.0 ±1.2 ±0.6	f&a	938	BEHREND	90	CELL	E^{ee}_{cm}= 35 GeV
12.0 ±1.4 ±2.5	f&a		[49] BURCHAT	87	MRK2	E^{ee}_{cm}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
13.9 ±2.0 $^{+1.9}_{-2.2}$			[50] AIHARA	86E	TPC	E^{ee}_{cm}= 29 GeV

[48] AKERS 94E not independent of AKERS 94E B($h^- \geq 1\pi^0 \nu_\tau$) and B($h^- \pi^0 \nu_\tau$) measurements.
[49] Error correlated with BURCHAT 87 $\Gamma(\rho^- \nu_e)/\Gamma$(total) value.
[50] AIHARA 86E (TPC) quote B($2\pi^0 \pi^- \nu_\tau$) + 1.6B($3\pi^0 \pi^- \nu_\tau$) + 1.1B($\pi^0 \eta \pi^- \nu_\tau$).



$\Gamma(h^- 2\pi^0 \nu_\tau)/\Gamma_{\text{total}}$ Γ_{17}/Γ

$\Gamma_{17}/\Gamma = (\Gamma_{19}+\Gamma_{20}+0.157\Gamma_{30}+0.157\Gamma_{32})/\Gamma$

VALUE (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
9.50±0.14 OUR FIT	Error includes scale factor of 1.1.				
9.48±0.13±0.10	12k	[51] BUSKULIC	96	ALEP	LEP 1991–1993 data

[51] BUSKULIC 96 quote 9.29 ± 0.13 ± 0.10. We add 0.19 to undo their correction for $\tau^- \to h^- K^0 \nu_\tau$.

$\Gamma(h^- 2\pi^0 \nu_\tau (\text{ex.} K^0))/\Gamma_{\text{total}}$ Γ_{18}/Γ

$\Gamma_{18}/\Gamma = (\Gamma_{19}+\Gamma_{20})/\Gamma$

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*
9.35±0.14 OUR FIT	Error includes scale factor of 1.1.					
8.95±0.33 OUR AVERAGE	Error includes scale factor of 1.1.					
8.88±0.37±0.42	f&a	1060	ACCIARRI	95	L3	1992 LEP run
8.96±0.16±0.44	avg		[52] PROCARIO	93	CLEO	$E^{ee}_{\text{cm}} \approx$ 10.6 GeV
10.38±0.66±0.82	f&a	809	[53] DECAMP	92C	ALEP	1989–1990 LEP runs
5.7 ±0.5 $^{+1.7}_{-1.0}$	f&a	133	[54] ANTREASYAN	91	CBAL	E^{ee}_{cm}= 9.4–10.6 GeV
10.0 ±1.5 ±1.1	f&a	333	[55] BEHREND	90	CELL	E^{ee}_{cm}= 35 GeV
8.7 ±0.4 ±1.1	f&a	815	[56] BAND	87	MAC	E^{ee}_{cm}= 29 GeV
6.0 ±3.0 ±1.8	f&a		BEHREND	84	CELL	E^{ee}_{cm}= 14,22 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						

6.2 ±0.6 ±1.2		[57] GAN	87	MRK2	$E^{ee}_{\rm cm}$= 29 GeV

[52] PROCARIO 93 entry is obtained from B($h^- 2\pi^0 \nu_\tau$)/B($h^- \pi^0 \nu_\tau$) using ARTUSO 94 result for B($h^- \pi^0 \nu_\tau$).

[53] We subtract 0.0015 to account for $\tau^- \rightarrow K^*(892)^- \nu_\tau$ contribution.

[54] ANTREASYAN 91 subtract 0.001 to account for the $\tau^- \rightarrow K^*(892)^- \nu_\tau$ contribution.

[55] BEHREND 90 subtract 0.002 to account for the $\tau^- \rightarrow K^*(892)^- \nu_\tau$ contribution.

[56] BAND 87 assume B($\pi^- 3\pi^0 \nu_\tau$) = 0.01 and B($\pi^- \pi^0 \eta \nu_\tau$) = 0.005.

[57] GAN 87 analysis use photon multiplicity distribution.

$\Gamma(h^- 2\pi^0 \nu_\tau (\text{ex.} K^0))/\Gamma(h^- \pi^0 \nu_\tau)$ — Γ_{18}/Γ_{12}

$\Gamma_{18}/\Gamma_{12} = (\Gamma_{19}+\Gamma_{20})/(\Gamma_{13}+\Gamma_{15})$

VALUE	DOCUMENT ID		TECN	COMMENT
0.363±0.006 OUR FIT	Error includes scale factor of 1.1.			
0.342±0.006±0.016	[58] PROCARIO	93	CLEO	$E^{ee}_{\rm cm} \approx$ 10.6 GeV

[58] PROCARIO 93 quote 0.345 ± 0.006 ± 0.016 after correction for 2 kaon backgrounds assuming B($K^{*-} \nu_\tau$)=1.42 ± 0.18% and B($h^- K^0 \pi^0 \nu_\tau$)=0.48 ± 0.48%. We multiply by 0.990 ± 0.010 to remove these corrections to B($h^- \pi^0 \nu_\tau$).

$\Gamma(\pi^- 2\pi^0 \nu_\tau (\text{ex.} K^0))/\Gamma_{\rm total}$ — Γ_{19}/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 (%)		DOCUMENT ID		TECN	COMMENT
9.27±0.14 OUR FIT	Error includes scale factor of 1.1.				
9.21±0.13±0.11	**avg**	[59] BUSKULIC	96	ALEP	LEP 1991–1993 data

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

$\Gamma(K^- 2\pi^0 \nu_\tau (\text{ex.} K^0))/\Gamma_{\rm total}$ — Γ_{20}/Γ

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.081±0.027 OUR FIT					
0.081±0.027 OUR AVERAGE					
0.08 ±0.02 ±0.02	59	BUSKULIC	96	ALEP	LEP 1991–1993 data
0.09 ±0.10 ±0.03	3	[60] BATTLE	94	CLEO	$E^{ee}_{\rm cm} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.04 ±0.03 ±0.02	11	BUSKULIC	94E	ALEP	Repl. by BUSKULIC 96

[60] BATTLE 94 quote 0.14 ± 0.10 ± 0.03 or < 0.3% at 90% CL. We subtract (0.05 ± 0.02)% to account for $\tau^- \rightarrow K^- (K^0 \rightarrow \pi^0 \pi^0) \nu_\tau$ background.

$\Gamma(h^- \geq 3\pi^0 \nu_\tau)/\Gamma_{\rm total}$ — Γ_{21}/Γ

$\Gamma_{21}/\Gamma = (\Gamma_{23}+\Gamma_{24}+\Gamma_{26}+0.157\Gamma_{34}+0.157\Gamma_{35}+0.0246\Gamma_{37}+0.319\Gamma_{90})/\Gamma$

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
1.46±0.11 OUR FIT	Error includes scale factor of 1.1.					
1.8 ±0.6 OUR AVERAGE	Error includes scale factor of 1.1.					
1.53±0.40±0.46	f&a	186	DECAMP	92C	ALEP	1989–1990 LEP runs
3.2 ±1.0 ±1.0	avg		[61] BEHREND	90	CELL	$E^{ee}_{\rm cm}$= 35 GeV

[61] Not independent of BEHREND 90 $\Gamma(h^- \geq 2\pi^0 \nu_\tau)/\Gamma_{\rm total}$ and $\Gamma(h^- 2\pi^0 \nu_\tau)/\Gamma_{\rm total}$ values.

$\Gamma(h^- 3\pi^0 \nu_\tau)/\Gamma_{\rm total}$ — Γ_{22}/Γ

$\Gamma_{22}/\Gamma = (\Gamma_{23}+\Gamma_{24}+0.157\Gamma_{34}+0.157\Gamma_{35})/\Gamma$

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
1.28±0.10 OUR FIT						
1.22±0.10 OUR AVERAGE						
1.24±0.09±0.11	f&a	2.3k	[62] BUSKULIC	96	ALEP	LEP 1991–1993 data
1.70±0.24±0.38	f&a	293	ACCIARRI	95	L3	1992 LEP run
1.15±0.08±0.13	avg		[63] PROCARIO	93	CLEO	$E^{ee}_{\rm cm} \approx$ 10.6 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						

$0.0\ ^{+1.4}_{-0.1}\ ^{+1.1}_{-0.1}$	[64] GAN	87	MRK2	$E^{ee}_{\rm cm}$= 29 GeV

[62] BUSKULIC 96 quote B($h^- 3\pi^0 \nu_\tau$(ex. K^0)) = 1.17 ± 0.09 ± 0.11. We add 0.07 to remove their correction for K^0 backgrounds.

[63] PROCARIO 93 entry is obtained from B($h^- 3\pi^0 \nu_\tau$)/B($h^- \pi^0 \nu_\tau$) using ARTUSO 94 result for B($h^- \pi^0 \nu_\tau$).

[64] Highly correlated with GAN 87 $\Gamma(\eta\pi^- \pi^0 \nu_\tau)/\Gamma_{\rm total}$ value. Authors quote B($\pi^\pm 3\pi^0 \nu_\tau$) + 0.67B($\pi^\pm \eta\pi^0 \nu_\tau$) = 0.047 ± 0.010 ± 0.011.

$\Gamma(h^- 3\pi^0 \nu_\tau)/\Gamma(h^- \pi^0 \nu_\tau)$ — Γ_{22}/Γ_{12}

$\Gamma_{22}/\Gamma_{12} = (\Gamma_{23}+\Gamma_{24}+0.157\Gamma_{34}+0.157\Gamma_{35})/(\Gamma_{13}+\Gamma_{15})$

VALUE	DOCUMENT ID		TECN	COMMENT
0.050±0.004 OUR FIT				
0.044±0.003±0.005	[65] PROCARIO	93	CLEO	$E^{ee}_{\rm cm} \approx$ 10.6 GeV

[65] PROCARIO 93 quote 0.041 ± 0.003 ± 0.005 after correction for 2 kaon backgrounds assuming B($K^{*-} \nu_\tau$)=1.42 ± 0.18% and B($h^- K^0 \pi^0 \nu_\tau$)=0.48 ± 0.48%. We add 0.003 ± 0.003 and multiply the sum by 0.990 ± 0.010 to remove these corrections.

$\Gamma(\pi^- 3\pi^0 \nu_\tau(\text{ex.}K^0))/\Gamma_{\rm total}$ — Γ_{23}/Γ

VALUE (%)	DOCUMENT ID
1.14±0.14 OUR FIT	

$\Gamma(K^- 3\pi^0 \nu_\tau(\text{ex.}K^0))/\Gamma_{\rm total}$ — Γ_{24}/Γ

VALUE (%)	DOCUMENT ID		TECN	COMMENT
$\mathbf{0.050^{+0.100}_{-0.033}}$ **OUR FIT**				
0.05 ±0.13	[66] BUSKULIC	94E	ALEP	1991-1992 LEP runs

[66] BUSKULIC 94E quote B($K^- \geq 0\pi^0 \geq 0K^0 \nu_\tau$) − [B($K^- \nu_\tau$) + B($K^- \pi^0 \nu_\tau$) + B($K^- K^0 \nu_\tau$) + B($K^- \pi^0 \pi^0 \nu_\tau$) + B($K^- \pi^0 K^0 \nu_\tau$)] = 0.05 ± 0.13% accounting for common systematic errors in BUSKULIC 94E and BUSKULIC 94F measurements of these modes. We assume B($K^- \geq 2K^0 \nu_\tau$) and B($K^- \geq 4\pi^0 \nu_\tau$) are negligible.

$\Gamma(h^- 4\pi^0 \nu_\tau(\text{ex.}K^0))/\Gamma_{\rm total}$ — Γ_{25}/Γ

$\Gamma_{25}/\Gamma = (\Gamma_{26}+0.319\Gamma_{90})/\Gamma$

VALUE (%)	EVTS	DOCUMENT ID		TECN	COMMENT
0.18±0.06 OUR FIT					
0.16±0.06 OUR AVERAGE					
0.16±0.04±0.09	232	[67] BUSKULIC	96	ALEP	LEP 1991–1993 data
0.16±0.05±0.05		[68] PROCARIO	93	CLEO	$E^{ee}_{\rm cm} \approx$ 10.6 GeV

[67] BUSKULIC 96 quote result for $\tau^- \to h^- \geq 4\pi^0 \nu_\tau$. We assume B($h^- \geq 5\pi^0 \nu_\tau$) is negligible.

[68] PROCARIO 93 quotes B($h^- 4\pi^0 \nu_\tau$)/B($h^- \pi^0 \nu_\tau$) =0.006 ± 0.002 ± 0.002. We multiply by the ARTUSO 94 result for B($h^- \pi^0 \nu_\tau$) to obtain B($h^- 4\pi^0 \nu_\tau$). PROCARIO 93 assume B($h^- \geq 5\ \pi^0 \nu_\tau$) is small and do not correct for it.

$\Gamma(h^- 4\pi^0 \nu_\tau(\text{ex.}K^0,\eta))/\Gamma_{\rm total}$ — Γ_{26}/Γ

VALUE (%)	DOCUMENT ID
0.12±0.06 OUR FIT	

$\Gamma(K^- \geq 1(\pi^0 \text{ or } K^0)\ \nu_\tau)/\Gamma_{\rm total}$ — Γ_{27}/Γ

$\Gamma_{27}/\Gamma = (\Gamma_{15}+\Gamma_{20}+\Gamma_{24}+\Gamma_{32}+\Gamma_{35})/\Gamma$

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
0.94±0.10 OUR FIT						
0.76±0.23 OUR AVERAGE						
0.69±0.25	avg		[69] ABREU	94K	DLPH	LEP 1992 Z data
$1.2\ \pm 0.5\ ^{+0.2}_{-0.4}$	f&a	9	AIHARA	87B	TPC	$E^{ee}_{\rm cm}$= 29 GeV

[69] Not independent of ABREU 94K B($K^- \nu_\tau$) and B($K^- \geq 0$ neutrals ν_τ) measurements.

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

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

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	$E^{ee}_{cm} \approx$ 10.6 GeV

$\Gamma(\pi^- \overline{K}^0 \nu_\tau)/\Gamma_{total}$ — 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		[70] COAN 96	CLEO	$E^{ee}_{cm} \approx$ 10.6 GeV
0.95 ±0.15 ±0.06	f&a		[71] 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

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

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

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

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

$\Gamma(K^- K^0 \nu_\tau)/\Gamma_{total}$ — 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	$E^{ee}_{cm} \approx$ 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

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

VALUE (%)	EVTS	DOCUMENT ID	TECN	COMMENT
0.55 ±0.05 OUR FIT				
0.562±0.050±0.048	264	COAN 96	CLEO	$E^{ee}_{cm} \approx$ 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		[72] COAN 96	CLEO	$E^{ee}_{cm} \approx$ 10.6 GeV
0.41 ±0.12 ±0.03	f&a		[73] 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

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

[73] 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	$E^{ee}_{cm} \approx$ 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

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

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	$E^{ee}_{cm} \approx$ 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	[74] COAN	96	CLEO	$E^{ee}_{cm} \approx$ 10.6 GeV
0.31 ±0.12 ±0.04	f&a		ACCIARRI	95F	L3	1991–1993 LEP runs

[74] We multiply the COAN 96 measurement B($h^- K^0_S K^0_S \nu_\tau$) = (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	[75] 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	[76] BATTLE	94	CLEO	$E^{ee}_{cm} \approx$ 10.6 GeV
1.6 ±0.4 ±0.2	f&a	35	AIHARA	87B	TPC	E^{ee}_{cm}= 29 GeV
1.71±0.29	f&a	53	MILLS	84	DLCO	E^{ee}_{cm}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
1.60±0.07±0.12		967	[77] BUSKULIC	94E	ALEP	Repl. by BUSKULIC 96

[75] 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.

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

[77] 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	[78] AKERS	94G	OPAL	E^{ee}_{cm}= 88–94 GeV

[78] AKERS 94G measure $\Gamma(K^0_S(\text{particles})^- \nu_\tau)/\Gamma_{total}$ = 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^{ee}_{cm}= 29 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
<0.27	90	BELTRAMI	85	HRS	E^{ee}_{cm}= 29 GeV