$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma_{total}$ — Γ_2/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
17.65±0.24 OUR FIT Error includes scale factor of 1.1.						
17.44±0.23 OUR AVERAGE						
17.6 ±0.4 ±0.4	f&a	2148	ADRIANI	93M	L3	E^{ee}_{cm}= 88–94 GeV
17.4 ±0.7 ±0.6	f&a	687	ABREU	92N	DLPH	E^{ee}_{cm}= 88.2–94.2 GeV
17.2 ±0.4 ±0.5	avg		[15] ALBRECHT	92D	ARG	E^{ee}_{cm}= 9.4–10.6 GeV
17.35±0.41±0.37	f&a		DECAMP	92C	ALEP	E^{ee}_{cm}= 88–95 GeV
16.8 ±0.5 ±0.4	f&a	903	ALEXANDER	91D	OPAL	E^{ee}_{cm}= 88.3–94.3 GeV
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
17.7 ±1.2 ±0.7	f&a		AIHARA	87B	TPC	E^{ee}_{cm}= 29 GeV
18.3 ±0.9 ±0.8	f&a		BURCHAT	87	MRK2	E^{ee}_{cm}= 29 GeV
18.6 ±0.8 ±0.7	avg	558	[16] BARTEL	86D	JADE	E^{ee}_{cm}= 34.6 GeV
12.9 ±1.7 $^{+0.7}_{-0.5}$	f&a		ALTHOFF	85	TASS	E^{ee}_{cm}= 34.5 GeV
18.0 ±0.9 ±0.5	avg	473	[16] ASH	85B	MAC	E^{ee}_{cm}= 29 GeV
18.0 ±1.0 ±0.6	f&a		[17] BALTRUSAIT...85		MRK3	E^{ee}_{cm}= 3.77 GeV
19.4 ±1.6 ±1.7	f&a	153	BERGER	85	PLUT	E^{ee}_{cm}= 34.6 GeV
17.6 ±2.6 ±2.1	f&a	47	BEHREND	83C	CELL	E^{ee}_{cm}= 34 GeV
17.8 ±2.0 ±1.8	f&a		BERGER	81B	PLUT	E^{ee}_{cm}= 9–32 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
17.5 ±0.8 ±0.5		624	ADEVA	91F	L3	Repl. by ADRIANI 93M
17.4 ±0.6 ±0.8		1201	ADEVA	86B	MRKJ	Repl. by ADEVA 88

[15] Not independent of ALBRECHT 92D $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma(e^-\overline{\nu}_e\nu_\tau)$ and $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)\times\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma_{total}$.
[16] Modified using B($e^-\overline{\nu}_e\nu_\tau$)/B("1 prong") and B("1 prong") ,= 0.855.
[17] Error correlated with BALTRUSAITIS 85 $e\nu\overline{\nu}$ value.

$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma(\text{particle}^- \geq 0\text{ neutrals }\nu_\tau\text{ ("1-prong")})$
$\Gamma_2/\Gamma_1 = \Gamma_2/(\Gamma_2+\Gamma_4+\Gamma_7+\Gamma_9+\Gamma_{13}+\Gamma_{16}+\Gamma_{18}+\Gamma_{19}+0.771\Gamma_{41})$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.2065±0.0028 OUR FIT Error includes scale factor of 1.2.					
0.214 ±0.008 OUR AVERAGE					
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_3/Γ_2

E_γ > 37 MeV.

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.013±0.006	10	[18] WU	90	MRK2	E^{ee}_{cm}= 29 GeV

[18] Requirements on detected γ_s correspond to a τ rest frame energy cutoff E_γ > 37 MeV.

$\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma_{total}$ — Γ_4/Γ

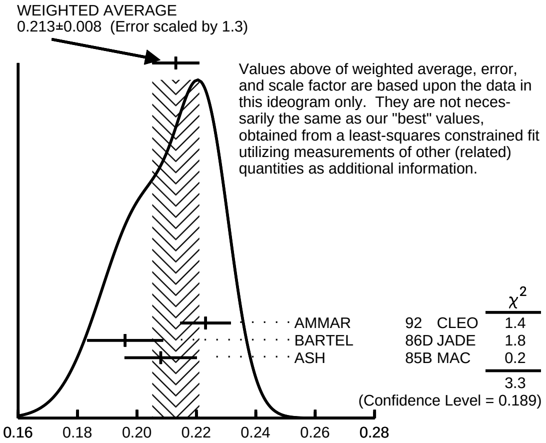
Data marked "avg" are highly correlated with data appearing elsewhere in the Listings, and are therefore used for the average given below but not in the overall fits. "f&a" marks results used for the fit and the average.

VALUE (%)		EVTS	DOCUMENT ID		TECN	COMMENT
18.01±0.18 OUR FIT Error includes scale factor of 1.1.						
17.90±0.17 OUR AVERAGE						
17.9 ±0.4 ±0.4	f&a	2892	ADRIANI	93M	L3	E^{ee}_{cm}= 88–94 GeV
18.6 ±0.8 ±0.6	f&a	554	ABREU	92N	DLPH	E^{ee}_{cm}= 88.2–94.2 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		[19] ALBRECHT	92D	ARG	E^{ee}_{cm}= 9.4–10.6 GeV
19.1 ±0.4 ±0.6	avg	2960	[20] AMMAR	92	CLEO	E^{ee}_{cm}= 10.5–10.9 GeV
18.09±0.45±0.45	f&a		DECAMP	92C	ALEP	E^{ee}_{cm}= 88–95 GeV
17.4 ±0.5 ±0.4	f&a	964	ALEXANDER	91D	OPAL	E^{ee}_{cm}= 88.3–94.3 GeV
17.0 ±0.5 ±0.6	f&a	1.7k	ABACHI	90	HRS	E^{ee}_{cm}= 29 GeV
18.4 ±0.8 ±0.4	f&a	644	BEHREND	90	CELL	E^{ee}_{cm}= 35 GeV
16.3 ±0.3 ±3.2	f&a		JANSSEN	89	CBAL	E^{ee}_{cm}= 9.4–10.6 GeV
18.4 ±1.2 ±1.0	f&a		AIHARA	87B	TPC	E^{ee}_{cm}= 29 GeV
19.1 ±0.8 ±1.1	f&a		BURCHAT	87	MRK2	E^{ee}_{cm}= 29 GeV
16.8 ±0.7 ±0.9	avg	515	[20] BARTEL	86D	JADE	E^{ee}_{cm}= 34.6 GeV
20.4 ±3.0 $^{+1.4}_{-0.9}$	f&a		ALTHOFF	85	TASS	E^{ee}_{cm}= 34.5 GeV
17.8 ±0.9 ±0.6	avg	390	[20] ASH	85B	MAC	E^{ee}_{cm}= 29 GeV
18.2 ±0.7 ±0.5	f&a		[21] BALTRUSAIT...85		MRK3	E^{ee}_{cm}= 3.77 GeV
13.0 ±1.9 ±2.9	f&a		BERGER	85	PLUT	E^{ee}_{cm}= 34.6 GeV
18.3 ±2.4 ±1.9	f&a	60	BEHREND	83C	CELL	E^{ee}_{cm}= 34 GeV
16.0 ±1.3	f&a	459	[22] BACINO	78B	DLCO	E^{ee}_{cm}= 3.1–7.4 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •						
17.7 ±0.7 ±0.6		686	ADEVA	91F	L3	Repl. by ADRIANI 93M
18.3 ±0.7 ±0.5			[23] AIHARA	87B	TPC	E^{ee}_{cm}= 29 GeV

[19] Not independent of ALBRECHT 92D $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma(e^-\overline{\nu}_e\nu_\tau)$ and $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)\times\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma_{total}$.
[20] Modified using B($e^-\overline{\nu}_e\nu_\tau$)/B("1 prong") and B("1 prong") ,= 0.855.
[21] Error correlated with BALTRUSAITIS 85 $\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma_{total}$.
[22] BACINO 78B value comes from fit to events with $e^\pm$ and one other nonelectron charged prong.
[23] Combined result of AIHARA 87B $e\nu\overline{\nu}$ and $\mu\nu\overline{\nu}$ measurements assuming B($\mu\nu\overline{\nu}$)/B($e\nu\overline{\nu}$) = 0.973.

$\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma(\text{particle}^- \geq 0\text{ neutrals }\nu_\tau\text{ ("1-prong")})$
$\Gamma_4/\Gamma_1 = \Gamma_4/(\Gamma_2+\Gamma_4+\Gamma_7+\Gamma_9+\Gamma_{13}+\Gamma_{16}+\Gamma_{18}+\Gamma_{19}+0.771\Gamma_{41})$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.2107±0.0022 OUR FIT Error includes scale factor of 1.1.					
0.213 ±0.008 OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below.					
0.2231±0.0044±0.0073	2856	AMMAR	92	CLEO	E^{ee}_{cm}= 10.5–10.9 GeV
0.196 ±0.008 ±0.010		BARTEL	86D	JADE	E^{ee}_{cm}= 34.6 GeV
0.208 ±0.010 ±0.007	390	ASH	85B	MAC	E^{ee}_{cm}= 29 GeV



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

$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)\times\Gamma(e^-\overline{\nu}_e\nu_\tau)/\Gamma^2_{total}$ — $\Gamma_2\Gamma_4/\Gamma^2$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.0318±0.0005 OUR FIT Error includes scale factor of 1.1.					
0.0302±0.0012 OUR AVERAGE					
0.0306±0.0005±0.0013	3230	ALBRECHT	93G	ARG	E^{ee}_{cm}= 9.4–10.6 GeV
0.0288±0.0017±0.0019		ASH	85B	MAC	E^{ee}_{cm}= 29 GeV
0.030 ±0.005	257	BLOCKER	82D	MRK2	E^{ee}_{cm}= 3.5–6.7 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.0298±0.0007±0.0013	1756	ALBRECHT	92D	ARG	Repl. by ALBRECHT 93G

$\Gamma(\mu^-\overline{\nu}_\mu\nu_\tau)/\Gamma(e^-\overline{\nu}_e\nu_\tau)$ — Γ_2/Γ_4

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	EVTS	DOCUMENT ID		TECN	COMMENT
0.980±0.017 OUR FIT Error includes scale factor of 1.1.					
1.00 ±0.05 OUR AVERAGE					
0.997±0.035±0.040		ALBRECHT	92D	ARG	E^{ee}_{cm}= 9.4–10.6 GeV
1.33 ±0.18 ±0.36	154	BLOCKER	82D	MRK2	E^{ee}_{cm}= 3.5–6.7 GeV

$\Gamma(h^- \geq 0\text{ neutrals }\nu_\tau)/\Gamma_{total}$
$\Gamma_5/\Gamma = (\Gamma_7+\Gamma_9+\Gamma_{13}+\Gamma_{16}+\Gamma_{18}+\Gamma_{19}+0.771\Gamma_{41})/\Gamma$

VALUE (%)		DOCUMENT ID		TECN	COMMENT
49.83±0.35 OUR FIT Error includes scale factor of 1.3.					
49.0 ±1.4 OUR AVERAGE					
48.6 ±1.2 ±0.9	avg	[24] AIHARA	87B	TPC	E^{ee}_{cm}= 29 GeV
51.5 ±2.9 $^{+1.6}_{-2.6}$	f&a	ALTHOFF	85	TASS	E^{ee}_{cm}= 34.5 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.