Reference = BELOUS 07; PRL 99 011801
Verifier code = BELLE

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Tom Browder

EMAIL: teb@phys.hawaii.edu

April 14, 2008

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Thank you for helping us make the Review accurate and useful.

Sincerely,

Klaus Mönig
DESY-Zeuthen
Plataneallee 6
D-15735 Zeuthen, Germany

PHONE: 49-33762 77271
FAX: 49-33762 77330
EMAIL: klaus.monig@cern.ch

LEPTONS

NODE=LXXX005

NODE=S035

τ

$J = \frac{1}{2}$

NODE=S035

τ discovery paper was PERL 75. $e^+ e^- \rightarrow \tau^+ \tau^-$ cross-section threshold behavior and magnitude are consistent with pointlike spin-1/2 Dirac particle. BRANDELIK 78 ruled out pointlike spin-0 or spin-1 particle. FELDMAN 78 ruled out $J = 3/2$. KIRKBY 79 also ruled out J=integer, $J = 3/2$.

τ MASS

NODE=S035205

NODE=S035M

	VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
	1776.84±0.17 OUR AVERAGE					
	$1776.81^{+0.25}_{-0.23}\pm0.15$	81	ANASHIN	07	KEDR	6.7 pb^{-1}, E^{ee}_{cm}= 3.54–3.78 GeV
YOUR DATA	$1776.61\pm0.13\pm0.35$		[1] BELOUS	07	BELL	414 fb^{-1} E^{ee}_{cm}=10.6 GeV
	$1775.1\ \pm1.6\ \pm1.0$	13.3k	[2] ABBIENDI	00A	OPAL	1990–1995 LEP runs
	$1778.2\ \pm0.8\ \pm1.2$		ANASTASSOV	97	CLEO	E^{ee}_{cm}= 10.6 GeV
	$1776.96^{+0.18}_{-0.21}{}^{+0.25}_{-0.17}$	65	[3] BAI	96	BES	E^{ee}_{cm}= 3.54–3.57 GeV
	$1776.3\ \pm2.4\ \pm1.4$	11k	[4] ALBRECHT	92M	ARG	E^{ee}_{cm}= 9.4–10.6 GeV
	$1783\ {}^{+3}_{-4}$	692	[5] BACINO	78B	DLCO	E^{ee}_{cm}= 3.1–7.4 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	$1777.8\ \pm0.7\ \pm1.7$	35k	[6] BALEST	93	CLEO	Repl. by ANASTASSOV 97
	$1776.9\ {}^{+0.4}_{-0.5}\ \pm0.2$	14	[7] BAI	92	BES	Repl. by BAI 96

[1] BELOUS 07 fit τ pseudomass spectrum in $\tau \rightarrow \pi\pi^+\pi^-\nu_\tau$ decays. Result assumes $m_{\nu_\tau} = 0$. NODE=S035M;LINKAGE=BE

[2] ABBIENDI 00A fit τ pseudomass spectrum in $\tau \rightarrow \pi^\pm \leq 2\pi^0\nu_\tau$ and $\tau \rightarrow \pi^\pm\pi^+\pi^- \leq 1\pi^0\nu_\tau$ decays. Result assumes m_{ν_τ}=0. NODE=S035M;LINKAGE=BB

[3] BAI 96 fit $\sigma(e^+ e^- \rightarrow \tau^+\tau^-)$ at different energies near threshold. NODE=S035M;LINKAGE=F

[4] ALBRECHT 92M fit τ pseudomass spectrum in $\tau^- \rightarrow 2\pi^-\pi^+\nu_\tau$ decays. Result assumes m_{ν_τ}=0. NODE=S035M;LINKAGE=D

[5] BACINO 78B value comes from $e^\pm X^\mp$ threshold. Published mass 1782 MeV increased by 1 MeV using the high precision $\psi(2S)$ mass measurement of ZHOLENTZ 80 to eliminate the absolute SPEAR energy calibration uncertainty. NODE=S035M;LINKAGE=A

[6] BALEST 93 fit spectra of minimum kinematically allowed τ mass in events of the type $e^+ e^- \rightarrow \tau^+\tau^- \rightarrow (\pi^+ n\pi^0\nu_\tau)(\pi^- m\pi^0\nu_\tau)$ $n \leq 2$, $m \leq 2$, $1 \leq n+m \leq 3$. If $m_{\nu_\tau} \neq 0$, result increases by $(m^2_{\nu_\tau}/1100\ \text{MeV})$. NODE=S035M;LINKAGE=C

[7] BAI 92 fit $\sigma(e^+ e^- \rightarrow \tau^+\tau^-)$ near threshold using $e\mu$ events. NODE=S035M;LINKAGE=E

$(m_{\tau^+} - m_{\tau^-})/m_{\text{average}}$

NODE=S035MDF

A test of *CPT* invariance.

NODE=S035MDF

NODE=S035MDF

	VALUE	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
YOUR DATA	$<\mathbf{2.8 \times 10^{-4}}$	90	BELOUS	07	BELL	414 fb^{-1}, E^{ee}_{cm}=10.6 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	$<3.0 \times 10^{-3}$	90	ABBIENDI	00A	OPAL	1990–1995 LEP runs

τ REFERENCES

NODE=S035

	ANASHIN	07	JETPL 85 347	V.V. Anashin *et al.*	(KEDR Collab.)	REFID=51655
			Translated from ZETFP 85 429.			
YOUR PAPER	BELOUS	07	PRL 99 011801	K. Belous *et al.*	(BELLE Collab.)	REFID=51866
	ABBIENDI	00A	PL B492 23	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=47796
	ANASTASSOV	97	PR D55 2559	A. Anastassov *et al.*	(CLEO Collab.)	REFID=45273
	Also		PR D58 119903 (erratum)	A. Anastassov *et al.*	(CLEO Collab.)	REFID=46530
	BAI	96	PR D53 20	J.Z. Bai *et al.*	(BES Collab.)	REFID=44698
	BALEST	93	PR D47 R3671	R. Balest *et al.*	(CLEO Collab.)	REFID=43373
	ALBRECHT	92M	PL B292 221	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=42211
	BAI	92	PRL 69 3021	J.Z. Bai *et al.*	(BES Collab.)	REFID=43117
	ZHOLENTZ	80	PL 96B 214	A.A. Zholents *et al.*	(NOVO)	REFID=10320
	Also		SJNP 34 814	A.A. Zholents *et al.*	(NOVO)	REFID=10321
			Translated from YAF 34 1471.			

KIRKBY	79	SLAC-PUB-2419	J. Kirkby	(SLAC) J	REFID=10283
Batavia Lepton Photon Conference.					
BACINO	78B	PRL 41 13	W.J. Bacino *et al.*	(DELCO Collab.) J	REFID=10304
Also		Tokyo Conf. 249	J. Kirz	(STON)	REFID=10305
Also		PL 96B 214	A.A. Zholents *et al.*	(NOVO)	REFID=10320
BRANDELIK	78	PL 73B 109	R. Brandelik *et al.*	(DASP Collab.) J	REFID=10280
FELDMAN	78	Tokyo Conf. 777	G.J. Feldman	(SLAC) J	REFID=10355
PERL	75	PRL 35 1489	M.L. Perl *et al.*	(LBL, SLAC)	REFID=10294

Reference = EPIFANOV 07; PL B654 65
Verifier code = BELLE

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LEPTONS

NODE=LXXX005

NODE=S035

τ

$J = \frac{1}{2}$

τ discovery paper was PERL 75. $e^+e^- \rightarrow \tau^+\tau^-$ cross-section threshold behavior and magnitude are consistent with pointlike spin-1/2 Dirac particle. BRANDELIK 78 ruled out pointlike spin-0 or spin-1 particle. FELDMAN 78 ruled out $J = 3/2$. KIRKBY 79 also ruled out J=integer, $J = 3/2$.

NODE=S035

τ^- BRANCHING RATIOS

NODE=S035220

NODE=S035220

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

NODE=S035B32

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.

NODE=S035B32

NODE=S035B32

	VALUE (%)		*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*	
	0.831±0.030 OUR AVERAGE			Error includes scale factor of 1.4. See the ideogram below.				
YOUR DATA	0.808±0.004±0.026	f&a	53k	EPIFANOV	07	BELL	351 fb^{-1} E^{ee}_{cm}=10.6 GeV	
	0.933±0.068±0.049	f&a	377	ABBIENDI	00C	OPAL	1991–1995 LEP runs	
	0.928±0.045±0.034	f&a	937	[1] BARATE	99K	ALEP	1991–1995 LEP runs	
	0.855±0.117±0.066	avg	509	[2] BARATE	98E	ALEP	1991–1995 LEP runs	NOTFITTED
	0.704±0.041±0.072	avg		[3] COAN	96	CLEO	$E^{ee}_{cm} \approx$ 10.6 GeV	NOTFITTED
	0.95 ±0.15 ±0.06	f&a		[4] ACCIARRI	95F	L3	1991–1993 LEP runs	
	• • • We do not use the following data for averages, fits, limits, etc. • • •							
	0.79 ±0.10 ±0.09		98	[5] BUSKULIC	96	ALEP	Repl. by BARATE 99K	

[1] BARATE 99K measure K^0's by detecting K^0_L's in their hadron calorimeter. NODE=S035B32;LINKAGE=9K

[2] BARATE 98E reconstruct K^0's using $K^0_S \rightarrow \pi^+\pi^-$ decays. Not independent of BARATE 98E B(K^0 particles$^-\nu_\tau$) value. NODE=S035B32;LINKAGE=B9

[3] Not independent of COAN 96 B($h^-K^0\nu_\tau$) and B($K^-K^0\nu_\tau$) measurements. NODE=S035B32;LINKAGE=B

[4] ACCIARRI 95F do not identify π^-/K^- and assume B($K^-K^0\nu_\tau$) = (0.29 ± 0.12)%. NODE=S035B32;LINKAGE=A

[5] BUSKULIC 96 measure K^0's by detecting K^0_L's in their hadron calorimeter. NODE=S035B32;LINKAGE=B6

$\Gamma(\pi^-\overline{K}^0(\text{non-}K^*(892)^-)\nu_\tau)/\Gamma_{total}$ — Γ_{36}/Γ

NODE=S035B52

NODE=S035B52

	VALUE (units 10^{-4})	*CL%*	*DOCUMENT ID*		*TECN*	*COMMENT*
YOUR DATA	**5.4±2.1**		[1] EPIFANOV	07	BELL	351 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	<17	95	ACCIARRI	95F	L3	1991–1993 LEP runs

[1] EPIFANOV 07 quote B($\tau^- \rightarrow K^*(892)^-\nu_\tau$) B($K^*(892)^- \rightarrow K^0_S\pi^-$) / B($\tau^- \rightarrow K^0_S\pi^-\nu_\tau$) = 0.933 ± 0.027. We multiply their B($\tau^- \rightarrow \overline{K}^0\pi^-\nu_\tau$) by [1−(0.933 ± 0.027)] to obtain this result. NODE=S035B52;LINKAGE=EP

$\Gamma(K^*(892)^-\nu_\tau)/\Gamma_{total}$ — Γ_{112}/Γ

NODE=S035R9

NODE=S035R9

	VALUE (%)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
	1.20 ±0.07 OUR AVERAGE		Error includes scale factor of 1.8. See the ideogram below.			
YOUR DATA	1.131±0.006±0.051	49k	[1] EPIFANOV	07	BELL	351 fb^{-1} E^{ee}_{cm}=10.6 GeV
	1.326±0.063		BARATE	99R	ALEP	1991–1995 LEP runs
	1.11 ±0.12		[2] COAN	96	CLEO	$E^{ee}_{cm} \approx$ 10.6 GeV
	1.42 ±0.22 ±0.09		[3] ACCIARRI	95F	L3	1991–1993 LEP runs
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	1.39 ±0.09 ±0.10		[4] BUSKULIC	96	ALEP	Repl. by BARATE 99R
	1.45 ±0.13 ±0.11	273	[5] BUSKULIC	94F	ALEP	Repl. by BUSKULIC 96
	1.23 ±0.21 $^{+0.11}_{-0.21}$	54	[6] ALBRECHT	88L	ARG	E^{ee}_{cm}= 10 GeV
	1.9 ±0.3 ±0.4	44	[7] TSCHIRHART	88	HRS	E^{ee}_{cm}= 29 GeV
	1.5 ±0.4 ±0.4	15	[8] AIHARA	87C	TPC	E^{ee}_{cm}= 29 GeV
	1.3 ±0.3 ±0.3	31	YELTON	86	MRK2	E^{ee}_{cm}= 29 GeV
	1.7 ±0.7	11	DORFAN	81	MRK2	E^{ee}_{cm}= 4.2–6.7 GeV

[1] EPIFANOV 07 quote B($\tau^- \rightarrow K^*(892)^- \nu_\tau$) B($K^*(892)^- \rightarrow K^0_S \pi^-$) = (3.77 ± 0.02(stat) ±0.12(syst) ±0.12(mod)) × 10^{-3}. We add the systematic and model uncertainties in quadrature and divide by B($K^*(892)^- \rightarrow K^0_S \pi^-$) = 0.3333. NODE=S035R9;LINKAGE=EP

[2] 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. NODE=S035R9;LINKAGE=E

[3] This result is obtained from their B($\pi^- \overline{K}^0 \nu_\tau$) assuming all those decays originate in $K^*(892)^-$ decays. NODE=S035R9;LINKAGE=C

[4] Not independent of BUSKULIC 96 B($\pi^- \overline{K}^0 \nu_\tau$) and B($K^- \pi^0 \nu_\tau$) measurements. NODE=S035R9;LINKAGE=D

[5] 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. NODE=S035R9;LINKAGE=B

[6] The authors divide by Γ_2/Γ = 0.865 to obtain this result. NODE=S035R9;LINKAGE=AL

[7] Not independent of TSCHIRHART 88 $\Gamma(\tau^- \rightarrow h^- \overline{K}^0 \geq 0$ neutrals $\geq 0 K^0_L \nu_\tau$) / Γ. NODE=S035R9;LINKAGE=A

[8] Decay π^- identified in this experiment, is assumed in the others. NODE=S035R9;LINKAGE=AI

$\Gamma(K^*(892)^- \nu_\tau \rightarrow \pi^- \overline{K}^0 \nu_\tau)/\Gamma(\pi^- \overline{K}^0 \nu_\tau)$ Γ_{113}/Γ_{35}

NODE=S035C68
NODE=S035C68

	VALUE	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
YOUR DATA	**0.933±0.027**	49k	EPIFANOV	07	BELL	351 fb^{-1} E^{ee}_{cm}= 10.6 GeV

τ REFERENCES

NODE=S035

YOUR PAPER	EPIFANOV	07	PL B654 65	D. Epifanov *et al.*	(BELLE Collab.)	REFID=51929
	ABBIENDI	00C	EPJ C13 213	G. Abbiendi *et al.*	(OPAL Collab.)	REFID=47440
	BARATE	99K	EPJ C10 1	R. Barate *et al.*	(ALEPH Collab.)	REFID=47181
	BARATE	99R	EPJ C11 599	R. Barate *et al.*	(ALEPH Collab.)	REFID=47366
	BARATE	98E	EPJ C4 29	R. Barate *et al.*	(ALEPH Collab.)	REFID=45917
	BUSKULIC	96	ZPHY C70 579	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=44588
	COAN	96	PR D53 6037	T.E. Coan *et al.*	(CLEO Collab.)	REFID=44667
	ACCIARRI	95F	PL B352 487	M. Acciarri *et al.*	(L3 Collab.)	REFID=44280
	BATTLE	94	PRL 73 1079	M. Battle *et al.*	(CLEO Collab.)	REFID=43918
	BUSKULIC	94E	PL B332 209	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43898
	BUSKULIC	94F	PL B332 219	D. Buskulic *et al.*	(ALEPH Collab.)	REFID=43899
	ALBRECHT	88L	ZPHY C41 1	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40861
	TSCHIRHART	88	PL B205 407	R. Tschirhart *et al.*	(HRS Collab.)	REFID=40640
	AIHARA	87C	PRL 59 751	H. Aihara *et al.*	(TPC Collab.)	REFID=40428
	YELTON	86	PRL 56 812	J.M. Yelton *et al.*	(Mark II Collab.)	REFID=10351
	DORFAN	81	PRL 46 215	J.M. Dorfan *et al.*	(Mark II Collab.)	REFID=10323
	KIRKBY	79	SLAC-PUB-2419 Batavia Lepton Photon Conference.	J. Kirkby	(SLAC) J	REFID=10283
	BRANDELIK	78	PL 73B 109	R. Brandelik *et al.*	(DASP Collab.) J	REFID=10280
	FELDMAN	78	Tokyo Conf. 777	G.J. Feldman	(SLAC) J	REFID=10355
	PERL	75	PRL 35 1489	M.L. Perl *et al.*	(LBL, SLAC)	REFID=10294

Reference = MIYAZAKI 08; PL B660 154
Verifier code = BELLE

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FAX: 49-33762 77330
EMAIL: klaus.monig@cern.ch

LEPTONS

NODE=LXXX005

NODE=S035

τ

$J = \frac{1}{2}$

NODE=S035

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τ^- BRANCHING RATIOS

NODE=S035220

NODE=S035220

$\Gamma(e^- e^+ e^-)/\Gamma_{total}$ Γ_{172}/Γ

NODE=S035R58

Test of lepton family number conservation.

NODE=S035R58
NODE=S035R58

	VALUE	CL%	DOCUMENT ID		TECN	COMMENT
YOUR DATA	**$< 3.6 \times 10^{-8}$**	90	MIYAZAKI	08	BELL	535 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	$< 4.3 \times 10^{-8}$	90	AUBERT	07BK	BABR	376 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 2.0 \times 10^{-7}$	90	AUBERT	04J	BABR	91.5 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 3.5 \times 10^{-7}$	90	YUSA	04	BELL	87.1 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 2.9 \times 10^{-6}$	90	BLISS	98	CLEO	E^{ee}_{cm}= 10.6 GeV
	$< 0.33 \times 10^{-5}$	90	[1] BARTELT	94	CLEO	Repl. by BLISS 98
	$< 1.3 \times 10^{-5}$	90	ALBRECHT	92K	ARG	E^{ee}_{cm}= 10 GeV
	$< 2.7 \times 10^{-5}$	90	BOWCOCK	90	CLEO	E^{ee}_{cm}= 10.4–10.9
	$< 40 \times 10^{-5}$	90	HAYES	82	MRK2	E^{ee}_{cm}= 3.8–6.8 GeV

[1] BARTELT 94 assume phase space decays.

NODE=S035R58;LINKAGE=B9

$\Gamma(e^- \mu^+ \mu^-)/\Gamma_{total}$ Γ_{173}/Γ

NODE=S035R56

Test of lepton family number conservation.

NODE=S035R56
NODE=S035R56

	VALUE	CL%	DOCUMENT ID		TECN	COMMENT
	$< 3.7 \times 10^{-8}$	90	AUBERT	07BK	BABR	376 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA	$< 4.1 \times 10^{-8}$	90	MIYAZAKI	08	BELL	535 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 3.3 \times 10^{-7}$	90	AUBERT	04J	BABR	91.5 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 2.0 \times 10^{-7}$	90	YUSA	04	BELL	87.1 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 1.8 \times 10^{-6}$	90	BLISS	98	CLEO	E^{ee}_{cm}= 10.6 GeV
	$< 0.36 \times 10^{-5}$	90	[1] BARTELT	94	CLEO	Repl. by BLISS 98
	$< 1.9 \times 10^{-5}$	90	ALBRECHT	92K	ARG	E^{ee}_{cm}= 10 GeV
	$< 2.7 \times 10^{-5}$	90	BOWCOCK	90	CLEO	E^{ee}_{cm}= 10.4–10.9
	$< 33 \times 10^{-5}$	90	HAYES	82	MRK2	E^{ee}_{cm}= 3.8–6.8 GeV

[1] BARTELT 94 assume phase space decays.

NODE=S035R56;LINKAGE=B9

$\Gamma(e^+ \mu^- \mu^-)/\Gamma_{total}$ Γ_{174}/Γ

NODE=S035R75

Test of lepton family number conservation.

NODE=S035R75
NODE=S035R75

	VALUE	CL%	DOCUMENT ID		TECN	COMMENT
YOUR DATA	**$< 2.3 \times 10^{-8}$**	90	MIYAZAKI	08	BELL	535 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	$< 5.6 \times 10^{-8}$	90	AUBERT	07BK	BABR	376 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 1.3 \times 10^{-7}$	90	AUBERT	04J	BABR	91.5 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 2.0 \times 10^{-7}$	90	YUSA	04	BELL	87.1 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	$< 1.5 \times 10^{-6}$	90	BLISS	98	CLEO	E^{ee}_{cm}= 10.6 GeV
	$< 0.35 \times 10^{-5}$	90	[1] BARTELT	94	CLEO	Repl. by BLISS 98
	$< 1.8 \times 10^{-5}$	90	ALBRECHT	92K	ARG	E^{ee}_{cm}= 10 GeV
	$< 1.6 \times 10^{-5}$	90	BOWCOCK	90	CLEO	E^{ee}_{cm}= 10.4–10.9

[1] BARTELT 94 assume phase space decays.

NODE=S035R75;LINKAGE=B9

$\Gamma(\mu^- e^+ e^-)/\Gamma_{total}$ Γ_{175}/Γ

NODE=S035R57

Test of lepton family number conservation.

NODE=S035R57
NODE=S035R57

	VALUE	CL%	DOCUMENT ID		TECN	COMMENT
YOUR DATA	**< 2.7 × 10^{-8}**	90	MIYAZAKI	08	BELL	535 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	< 8.0 × 10^{-8}	90	AUBERT	07BK	BABR	376 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	< 2.7 × 10^{-7}	90	AUBERT	04J	BABR	91.5 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	< 1.9 × 10^{-7}	90	YUSA	04	BELL	87.1 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	< 1.7 × 10^{-6}	90	BLISS	98	CLEO	E^{ee}_{cm}= 10.6 GeV
	< 0.34 × 10^{-5}	90	[1] BARTELT	94	CLEO	Repl. by BLISS 98
	< 1.4 × 10^{-5}	90	ALBRECHT	92K	ARG	E^{ee}_{cm}= 10 GeV
	< 2.7 × 10^{-5}	90	BOWCOCK	90	CLEO	E^{ee}_{cm}= 10.4–10.9
	<44 × 10^{-5}	90	HAYES	82	MRK2	E^{ee}_{cm}= 3.8–6.8 GeV

[1] BARTELT 94 assume phase space decays.

NODE=S035R57;LINKAGE=B9

$\Gamma(\mu^+ e^- e^-)/\Gamma_{total}$ Γ_{176}/Γ

NODE=S035R76

Test of lepton family number conservation.

NODE=S035R76
NODE=S035R76

	VALUE	CL%	DOCUMENT ID		TECN	COMMENT
YOUR DATA	**<2.0 × 10^{-8}**	90	MIYAZAKI	08	BELL	535 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	<5.8 × 10^{-8}	90	AUBERT	07BK	BABR	376 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	<1.1 × 10^{-7}	90	AUBERT	04J	BABR	91.5 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	<2.0 × 10^{-7}	90	YUSA	04	BELL	87.1 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	<1.5 × 10^{-6}	90	BLISS	98	CLEO	E^{ee}_{cm}= 10.6 GeV
	<0.34 × 10^{-5}	90	[1] BARTELT	94	CLEO	Repl. by BLISS 98
	<1.4 × 10^{-5}	90	ALBRECHT	92K	ARG	E^{ee}_{cm}= 10 GeV
	<1.6 × 10^{-5}	90	BOWCOCK	90	CLEO	E^{ee}_{cm}= 10.4–10.9

[1] BARTELT 94 assume phase space decays.

NODE=S035R76;LINKAGE=B9

$\Gamma(\mu^- \mu^+ \mu^-)/\Gamma_{total}$ Γ_{177}/Γ

NODE=S035R55

Test of lepton family number conservation.

NODE=S035R55
NODE=S035R55

	VALUE	CL%	DOCUMENT ID		TECN	COMMENT
YOUR DATA	**< 3.2 × 10^{-8}**	90	MIYAZAKI	08	BELL	535 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	< 5.3 × 10^{-8}	90	AUBERT	07BK	BABR	376 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	< 1.9 × 10^{-7}	90	AUBERT	04J	BABR	91.5 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	< 2.0 × 10^{-7}	90	YUSA	04	BELL	87.1 fb^{-1} E^{ee}_{cm}= 10.6 GeV
	< 1.9 × 10^{-6}	90	BLISS	98	CLEO	E^{ee}_{cm}= 10.6 GeV
	< 0.43 × 10^{-5}	90	[1] BARTELT	94	CLEO	Repl. by BLISS 98
	< 1.9 × 10^{-5}	90	ALBRECHT	92K	ARG	E^{ee}_{cm}= 10 GeV
	< 1.7 × 10^{-5}	90	BOWCOCK	90	CLEO	E^{ee}_{cm}= 10.4–10.9
	<49 × 10^{-5}	90	HAYES	82	MRK2	E^{ee}_{cm}= 3.8–6.8 GeV

[1] BARTELT 94 assume phase space decays.

NODE=S035R55;LINKAGE=B9

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	YUSA	04	PL B589 103	Y. Yusa *et al.*	(BELLE Collab.)	REFID=49905
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