$\Gamma(\pi^- e^+ e^+)/\Gamma_{total}$ Γ_{114}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0039	90	[181] WEIR	90B	MRK2	e^+e^- 29 GeV

[181] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(\pi^- \mu^+ \mu^+)/\Gamma_{total}$ Γ_{115}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0091	90	[182] WEIR	90B	MRK2	e^+e^- 29 GeV

[182] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(\pi^- e^+ \mu^+)/\Gamma_{total}$ Γ_{116}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0064	90	[183] WEIR	90B	MRK2	e^+e^- 29 GeV

[183] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^- e^+ e^+)/\Gamma_{total}$ Γ_{117}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0039	90	[184] WEIR	90B	MRK2	e^+e^- 29 GeV

[184] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^- \mu^+ \mu^+)/\Gamma_{total}$ Γ_{118}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0091	90	[185] WEIR	90B	MRK2	e^+e^- 29 GeV

[185] WEIR 90B assumes B^+ production cross section from LUND.

$\Gamma(K^- e^+ \mu^+)/\Gamma_{total}$ Γ_{119}/Γ

Test of total lepton number conservation.

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.0064	90	[186] WEIR	90B	MRK2	e^+e^- 29 GeV

[186] WEIR 90B assumes B^+ production cross section from LUND.

For all of the decays below, the charge of the decaying B was not determined. Only the admixture of B^0, $\overline{B}^0$, B^+, and B^- at the $\Upsilon(4S)$ is used in the averages, except where no $\Upsilon(4S)$ data ave available.

$\Gamma(\ell^+ \nu_\ell \text{anything})/\Gamma_{total}$ Γ_{124}/Γ

Only the experiments at the $\Upsilon(4S)$ are used in the average.

These branching fraction values are model dependent. See the note on "Semileptonic Decays of D and B Mesons, Part II" at the beginning of the B^+ Full Listings.

VALUE	DOCUMENT ID		TECN	COMMENT
0.1043±0.0024 OUR AVERAGE	Includes data from the 2 datablocks that follow this one.			
0.108 ±0.002 ±0.0056	[187] HENDERSON	92	CLEO	$e^+e^- \to \Upsilon(4S)$

[187] HENDERSON 92 measurement employs e and μ. The systematic error contains 0.004 in quadrature from model dependence. The authors average a variation of the Isgur, Scora, Grinstein, and Wise model with that of the Altarelli-Cabibbo-Corbò-Maiani-Martinelli model for semileptonic decays to correct the acceptance.

$\Gamma(e^+ \nu_e \text{anything})/\Gamma_{total}$ Γ_{120}/Γ

Only the experiments at the $\Upsilon(4S)$ are used in the average.

These branching fraction values are model dependent. See the note on "Semileptonic Decays of D and B Mesons, Part II" at the beginning of the B^+ Full Listings.

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.					
0.104±0.004 OUR AVERAGE	Error includes scale factor of 1.3. See the ideogram below.				
0.097±0.005±0.004		[188] ALBRECHT	93H	ARG	$e^+e^- \to \Upsilon(4S)$
0.100±0.004±0.003		[189] YANAGISAWA	91	CSB2	$e^+e^- \to \Upsilon(4S)$
0.103±0.006±0.002		[190] ALBRECHT	90H	ARG	$e^+e^- \to \Upsilon(4S)$
0.117±0.004±0.010		[191] WACHS	89	CBAL	Direct e at $\Upsilon(4S)$
0.120±0.007±0.005		CHEN	84	CLEO	Direct e at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.086±0.027±0.008		[192] ABE	93E	VNS	E^{ee}_{cm}= 58 GeV
0.107±0.015±0.007	260	[193] ABREU	93C	DLPH	$e^+e^- \to Z$
$0.109^{+0.014}_{-0.013}$±0.0055	2719	[194] AKERS	93B	OPAL	$e^+e^- \to Z$
0.138±0.032±0.008		[195] ADEVA	91C	L3	Z decays
0.111±0.028±0.026		BEHREND	90D	CELL	E^{ee}_{cm}= 43 GeV
0.150±0.011±0.022		BEHREND	90D	CELL	E^{ee}_{cm}= 35 GeV
0.112±0.009±0.011		ONG	88	MRK2	E^{ee}_{cm}= 29 GeV
$0.149^{+0.022}_{-0.019}$		PAL	86	DLCO	E^{ee}_{cm}= 29 GeV
0.110±0.018±0.010		AIHARA	85	TPC	E^{ee}_{cm}= 29 GeV
0.111±0.034±0.040		ALTHOFF	84J	TASS	E^{ee}_{cm}= 34.6 GeV
0.146±0.028		KOOP	84	DLCO	Repl. by PAL 86
0.132±0.008±0.014		[196] KLOPFEN...	83B	CUSB	Direct e at $\Upsilon(4S)$
0.116±0.021±0.017		NELSON	83	MRK2	E^{ee}_{cm}= 29 GeV

[188] ALBRECHT 93H analysis performed using tagged semileptonic decays of the B. This technique is almost model independent for the lepton branching ratio.

[189] YANAGISAWA 91 also measures an average semileptonic branching ratio at the $\Upsilon(5S)$ of 9.6–10.5% depending on assumptions about the relative production of different B meson species.

[190] ALBRECHT 90H uses the model of ALTARELLI 82 to correct over all lepton momenta. 0.099 ± 0.006 is obtained using ISGUR 89B.

[191] Using data above $p(e)$ = 2.4 GeV, WACHS 89 determine $\sigma(B \to e\nu \text{up})/\sigma(B \to e\nu \text{charm}) <$ 0.065 at 90% CL.

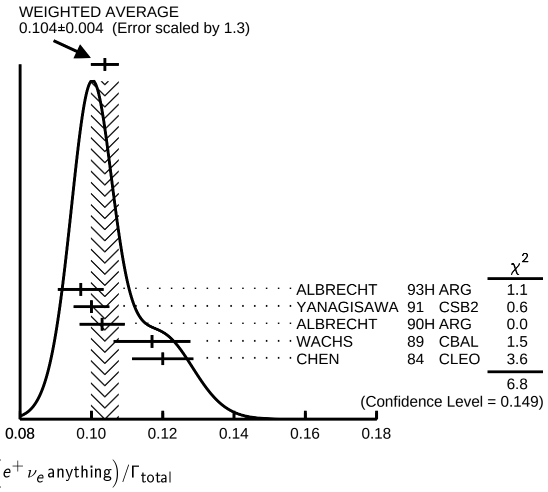
[192] ABE 93E experiment also measures forward-backward asymmetries and fragmentation functions for b and c.

[193] ABREU 93C event count includes ee events. Combining ee, $\mu\mu$, and $e\mu$ events, they obtain 0.100 ± 0.007 ± 0.007.

[194] AKERS 93B analysis performed using single and dilepton events.

[195] ADEVA 91C measure the average B($b \to eX$) branching ratio using single and double tagged b enhanced Z events. Combining e and μ results, they obtain 0.113 ± 0.010 ± 0.006. Constraining the initial number of b quarks by the Standard Model prediction (378 ± 3 MeV) for the decay of the Z into $b\overline{b}$, the electron result gives 0.112 ± 0.004 ± 0.008. They obtain 0.119 ± 0.003 ± 0.006 when e and μ results are combined. Used to measure the $b\overline{b}$ width itself, this electron result gives 370 ± 12 ± 24 MeV and combined with the muon result gives 385 ± 7 ± 22 MeV.

[196] Ratio $\sigma(b \to e\nu \text{up})/\sigma(b \to e\nu \text{charm})$ <0.055 at CL = 90%.



$\Gamma(\mu^+ \nu_\mu \text{anything})/\Gamma_{total}$ Γ_{123}/Γ

Only the experiments at the $\Upsilon(4S)$ are used in the average.

These branching fraction values are model dependent. See the note on "Semileptonic Decays of D and B Mesons, Part II" at the beginning of the B^+ Full Listings.

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
The data in this block is included in the average printed for a previous datablock.					
0.103±0.005 OUR AVERAGE					
0.100±0.006±0.002		[197] ALBRECHT	90H	ARG	$e^+e^- \to \Upsilon(4S)$
0.108±0.006±0.01		CHEN	84	CLEO	Direct μ at $\Upsilon(4S)$
0.112±0.009±0.01		LEVMAN	84	CUSB	Direct μ at $\Upsilon(4S)$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.110±0.012±0.007	656	[198] ABREU	93C	DLPH	$e^+e^- \to Z$
$0.101^{+0.010}_{-0.009}$±0.0055	4248	[199] AKERS	93B	OPAL	$e^+e^- \to Z$
0.113±0.012±0.006		[200] ADEVA	91C	L3	Z decays
0.104±0.023±0.016		BEHREND	90D	CELL	E^{ee}_{cm}= 43 GeV
0.148±0.010±0.016		BEHREND	90D	CELL	E^{ee}_{cm}= 35 GeV
0.118±0.012±0.010		ONG	88	MRK2	E^{ee}_{cm}= 29 GeV
0.117±0.016±0.015		BARTEL	87	JADE	E^{ee}_{cm}= 34.6 GeV
0.114±0.018±0.025		BARTEL	85J	JADE	Repl. by BARTEL 87
0.117±0.028±0.010		ALTHOFF	84G	TASS	E^{ee}_{cm}= 34.5 GeV
0.105±0.015±0.013		ADEVA	83B	MRKJ	E^{ee}_{cm}= 33–38.5 GeV
$0.155^{+0.054}_{-0.029}$		FERNANDEZ	83D	MAC	E^{ee}_{cm}= 29 GeV

[197] ALBRECHT 90H uses the model of ALTARELLI 82 to correct over all lepton momenta. 0.097 ± 0.006 is obtained using ISGUR 89B.

[198] ABREU 93C event count includes $\mu\mu$ events. Combining ee, $\mu\mu$, and $e\mu$ events, they obtain 0.100 ± 0.007 ± 0.007.

[199] AKERS 93B analysis performed using single and dilepton events.

[200] ADEVA 91C measure the average B($b \to eX$) branching ratio using single and double tagged b enhanced Z events. Combining e and μ results, they obtain 0.113 ± 0.010 ± 0.006. Constraining the initial number of b quarks by the Standard Model prediction (378 ± 3 MeV) for the decay of the Z into $b\overline{b}$, the muon result gives 0.123 ± 0.003 ± 0.006. They obtain 0.119 ± 0.003 ± 0.006 when e and μ results are combined. Used to measure the $b\overline{b}$ width itself, this muon result gives 394 ± 9 ± 22 MeV and combined with the electron result gives 385 ± 7 ± 22 MeV.

$\Gamma(\overline{D}^*(2010) e^+ \nu_e)/\Gamma_{total}$ Γ_{121}/Γ

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
0.070±0.018±0.014	90	ANTREASYAN	90B	CBAL	$e^+e^- \to \Upsilon(4S)$