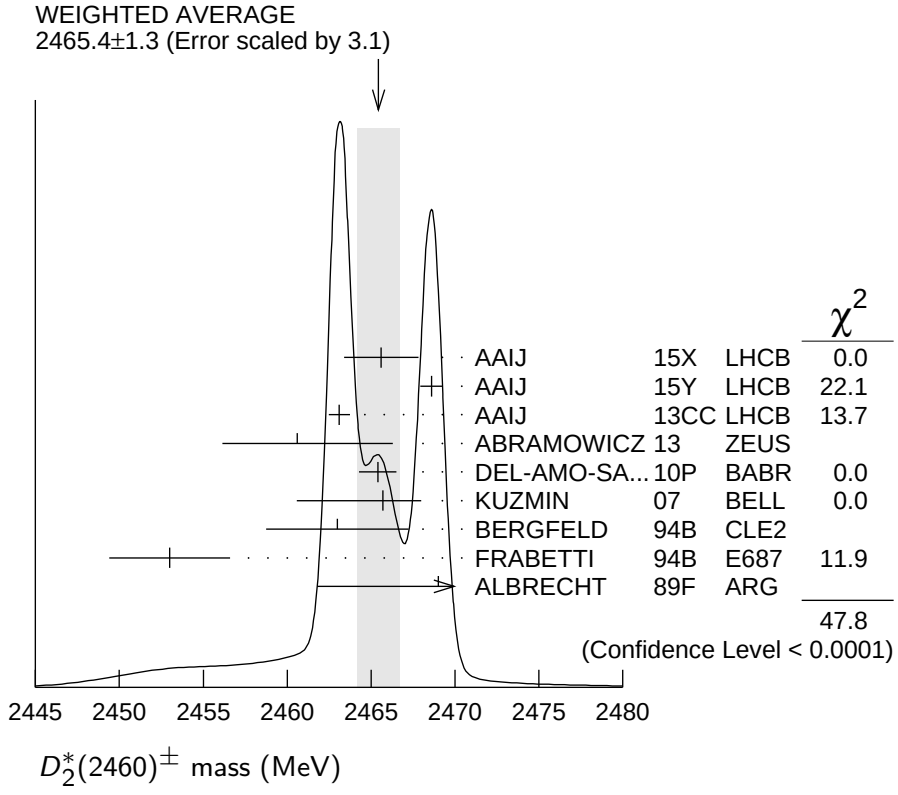
$D_2^*(2460)^\pm$

$I(J^P) = \frac{1}{2}(2^+)$

$J^P = 2^+$ assignment strongly favored(ALBRECHT 89B).

$D_2^*(2460)^\pm$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2465.4±1.3 OUR AVERAGE		Error includes scale factor of 3.1. See the ideogram below.			
2465.6±1.8±1.3		[1] AAIJ	15X	LHCB	$B^0 \to \overline{D}^0 K^+ \pi^-$
2468.6±0.6±0.3		[2] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0 \pi^+ \pi^-$
2463.1±0.2±0.6	342k	AAIJ	13CC	LHCB	$pp \to D^0 \pi^+ X$
$2460.6 \pm 4.4 ^{+3.6}_{-0.8}$	1371	[3] ABRAMOWICZ	13	ZEUS	$e^\pm p \to D^{(*)0} \pi^+ X$
2465.4±0.2±1.1	111k	[4] DEL-AMO-SA..	10P	BABR	$e^+ e^- \to D^0 \pi^+ X$
$2465.7 \pm 1.8 ^{+1.4}_{-4.8}$	2909	KUZMIN	07	BELL	$e^+ e^- \to$ hadrons
2463 ±3 ±3	310	BERGFELD	94B	CLE2	$e^+ e^- \to D^0 \pi^+ X$
2453 ±3 ±2	185	FRABETTI	94B	E687	γ Be $\to D^0 \pi^+ X$
2469 ±4 ±6		ALBRECHT	89F	ARG	$e^+ e^- \to D^0 \pi^+ X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2468.1±0.6±0.5		[5] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0 \pi^+ \pi^-$
2467.6±1.5±0.8	3.5k	[6] LINK	04A	FOCS	γ A



[1] From the Dalitz plot analysis including various K^* and D^{**} mesons as well as broad structures in the $K\pi$ S-wave and the $D\pi$ S- and P-waves.
[2] Modeling the $\pi^+\pi^-$ S-wave with the Isobar formalism.
[3] From the fit of the $M(D^0\pi^+)$ distribution. The widths of the D_1^+ and D_2^{*+} are fixed to 25 MeV and 37 MeV, and A_{D_1} and A_{D_2} are fixed to the theoretical predictions of 3 and -1, respectively.
[4] At a fixed width of 50.5 MeV.
[5] Modeling the $\pi^+\pi^-$ S-wave with the K-matrix formalism.
[6] Fit includes the contribution from $D_0^*(2400)^\pm$. Not independent of the corresponding mass difference measurement, $(m_{D_2^*(2460)^\pm}) - (m_{D_2^*(2460)^0})$.

$m_{D_2^*(2460)^\pm} - m_{D_2^*(2460)^0}$

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2.4±1.7 OUR AVERAGE				
3.1±1.9±0.9	LINK	04A	FOCS	γ A
− 2 ±4 ±4	BERGFELD	94B	CLE2	$e^+e^- \to$ hadrons
0 ±4	FRABETTI	94B	E687	γBe $\to D\pi$X
14 ±5 ±8	ALBRECHT	89F	ARG	$e^+e^- \to D^0\pi^+$X

$D_2^*(2460)^\pm$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
46.7± 1.2 OUR AVERAGE					
46.0± 3.4±3.2		[1] AAIJ	15X	LHCB	$B^0 \to \overline{D}^0 K^+\pi^-$
47.3± 1.5±0.7		[2] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0\pi^+\pi^-$
48.6± 1.3±1.9	342k	AAIJ	13CC	LHCB	$pp \to D^0\pi^+X$
49.7± 3.8±6.4	2909	KUZMIN	07	BELL	e^+e^- → hadrons
34.1± 6.5±4.2	3.5k	[3] LINK	04A	FOCS	γ A
27 $^{+11}_{-8}$ ±5	310	BERGFELD	94B	CLE2	$e^+e^- \to D^0\pi^+$X
23 ± 9 ±5	185	FRABETTI	94B	E687	γBe $\to D^0\pi^+$X
• • • We do not use the following data for averages, fits, limits, etc. • • •					
46.0± 1.4±1.8		[4] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0\pi^+\pi^-$

[1] From the Dalitz plot analysis including various K^* and D^{**} mesons as well as broad structures in the $K\pi$ S-wave and the $D\pi$ S- and P-waves.
[2] Modeling the $\pi^+\pi^-$ S-wave with the Isobar formalism.
[3] Fit includes the contribution from $D_0^*(2400)^\pm$.
[4] Modeling the $\pi^+\pi^-$ S-wave with the K-matrix formalism.

$D_2^*(2460)^\pm$ DECAY MODES

$D_2^*(2460)^-$ modes are charge conjugates of modes below.

	Mode	Fraction (Γ_i/Γ)
Γ_1	$D^0\pi^+$	seen
Γ_2	$D^{*0}\pi^+$	seen
Γ_3	$D^+\pi^+\pi^-$	not seen
Γ_4	$D^{*+}\pi^+\pi^-$	not seen

$D_2^*(2460)^\pm$ BRANCHING RATIOS

$\Gamma(D^0\pi^+)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ALBRECHT	89F	ARG	$e^+e^- \to D^0\pi^+X$

$\Gamma(D^0\pi^+)/\Gamma(D^{*0}\pi^+)$ Γ_1/Γ_2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.2±0.4 OUR AVERAGE					
$1.1\pm0.4^{+0.3}_{-0.2}$	1371	[1] ABRAMOWICZ13		ZEUS	$e^\pm p \to D^{(*)0}\pi^+X$
$1.9\pm1.1\pm0.3$		BERGFELD	94B	CLE2	$e^+e^- \to$ hadrons

[1] From the fit of the $M(D^0\pi^+)$ distribution. The widths of the D_1^+ and D_2^{*+} are fixed to 25 MeV and 37 MeV, and A_{D_1} and A_{D_2} are fixed to the theoretical predictions of 3 and -1, respectively.

$\Gamma(D^0\pi^+)/[\Gamma(D^0\pi^+)+\Gamma(D^{*0}\pi^+)]$ $\Gamma_1/(\Gamma_1+\Gamma_2)$

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$0.62\pm0.03\pm0.02$	3361	[1] AUBERT	09Y	BABR	$\overline{B}^0 \to D_2^{*+}\ell^-\nu_\ell$

[1] Assuming $\Gamma(\Upsilon(4S) \to B^+B^-)$ / $\Gamma(\Upsilon(4S) \to B^0\overline{B}^0) = 1.065 \pm 0.026$ and equal partial widths for charged and neutral D_2^* mesons.

$D_2^*(2460)^\pm$ REFERENCES

AAIJ	15X	PR D92 012012	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	15Y	PR D92 032002	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13CC	JHEP 1309 145	R. Aaij *et al.*	(LHCb Collab.)
ABRAMOWICZ	13	NP B866 229	H. Abramowicz *et al.*	(ZEUS Collab.)
DEL-AMO-SA...	10P	PR D82 111101	P. del Amo Sanchez *et al.*	(BABAR Collab.)
AUBERT	09Y	PRL 103 051803	B. Aubert *et al.*	(BABAR Collab.)
KUZMIN	07	PR D76 012006	A. Kuzmin *et al.*	(BELLE Collab.)
LINK	04A	PL B586 11	J.M. Link *et al.*	(FOCUS Collab.)
BERGFELD	94B	PL B340 194	T. Bergfeld *et al.*	(CLEO Collab.)
FRABETTI	94B	PRL 72 324	P.L. Frabetti *et al.*	(FNAL E687 Collab.)
ALBRECHT	89B	PL B221 422	H. Albrecht *et al.*	(ARGUS Collab.)
ALBRECHT	89F	PL B231 208	H. Albrecht *et al.*	(ARGUS Collab.)