NODE=M150

$D_2^*(2460)^{\pm}$

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

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

NODE=M150

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

NODE=M150M

NODE=M150M

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	$p p \to D^0 \pi^+ X$
$2460.6 \pm 4.4 {}^{+3.6}_{-0.8}$	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

OCCUR=2

[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.

NODE=M150M;LINKAGE=A

[2] Modeling the $\pi^+\pi^-$ S-wave with the Isobar formalism.

NODE=M150M;LINKAGE=B

[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.

NODE=M150M;LINKAGE=AB

[4] At a fixed width of 50.5 MeV.

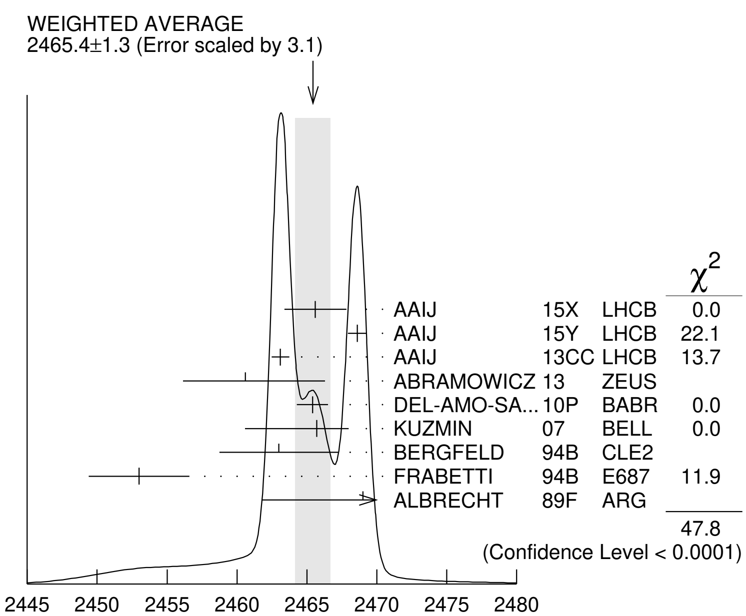
NODE=M150M;LINKAGE=DE

[5] Modeling the $\pi^+\pi^-$ S-wave with the K-matrix formalism.

NODE=M150M;LINKAGE=C

[6] Fit includes the contribution from $D_0^*(2400)^{\pm}$. Not independent of the corresponding mass difference measurement, $(m_{D_2^*(2460)^{\pm}}) - (m_{D_2^*(2460)^0})$.

NODE=M150M;LINKAGE=LI



$D_2^*(2460)^{\pm}$ mass (MeV)

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

NODE=M150DM

NODE=M150DM

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	γ Be $\to D\pi X$
14 ±5 ±8	ALBRECHT	89F	ARG	$e^+ e^- \to D^0 \pi^+ X$

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

NODE=M150W

NODE=M150W

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	$e^+ e^- \to$ 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	$B^0 \to \overline{D}^0 \pi^+ \pi^-$

OCCUR=2

[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.

NODE=M150W;LINKAGE=A

[2] Modeling the $\pi^+\pi^-$ S-wave with the Isobar formalism.

NODE=M150W;LINKAGE=B

[3] Fit includes the contribution from $D_0^*(2400)^{\pm}$.

NODE=M150W;LINKAGE=LI

[4] Modeling the $\pi^+\pi^-$ S-wave with the K-matrix formalism.

NODE=M150W;LINKAGE=C

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

NODE=M150215;NODE=M150

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

NODE=M150

	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

DESIG=1
DESIG=2;OUR EST;→ UNCHECKED ←
DESIG=3;OUR EST;→ UNCHECKED ←
DESIG=4;OUR EST;→ UNCHECKED ←

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

NODE=M150220

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

NODE=M150R1
NODE=M150R1

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

NODE=M150R2
NODE=M150R2

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
1.2±0.4 OUR AVERAGE					
1.1±0.4$^{+0.3}_{-0.2}$	1371	[1] ABRAMOWICZ	13	ZEUS	$e^{\pm} p \to D^{(*)0} \pi^+ X$
1.9±1.1±0.3		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.

NODE=M150R2;LINKAGE=AB

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

NODE=M150R01
NODE=M150R01

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •					
0.62±0.03±0.02	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.

NODE=M150R01;LINKAGE=AU

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

NODE=M150

AAIJ	15X	PR D92 012012	R. Aaij *et al.*	(LHCb Collab.)	REFID=56588
AAIJ	15Y	PR D92 032002	R. Aaij *et al.*	(LHCb Collab.)	REFID=56609
AAIJ	13CC	JHEP 1309 145	R. Aaij *et al.*	(LHCb Collab.)	REFID=55581
ABRAMOWICZ	13	NP B866 229	H. Abramowicz *et al.*	(ZEUS Collab.)	REFID=54743
DEL-AMO-SA...	10P	PR D82 111101	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53534
AUBERT	09Y	PRL 103 051803	B. Aubert *et al.*	(BABAR Collab.)	REFID=52929
KUZMIN	07	PR D76 012006	A. Kuzmin *et al.*	(BELLE Collab.)	REFID=51854
LINK	04A	PL B586 11	J.M. Link *et al.*	(FOCUS Collab.)	REFID=49775
BERGFELD	94B	PL B340 194	T. Bergfeld *et al.*	(CLEO Collab.)	REFID=44099
FRABETTI	94B	PRL 72 324	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=43687
ALBRECHT	89B	PL B221 422	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40736
ALBRECHT	89F	PL B231 208	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40931