

$D_0^*(2300)$

$$I(J^P) = \frac{1}{2}(0^+)$$

was $D_0^*(2400)$

$J^P = 0^+$ assignment favored (ABE 04D).

$D_0^*(2300)$ MASS

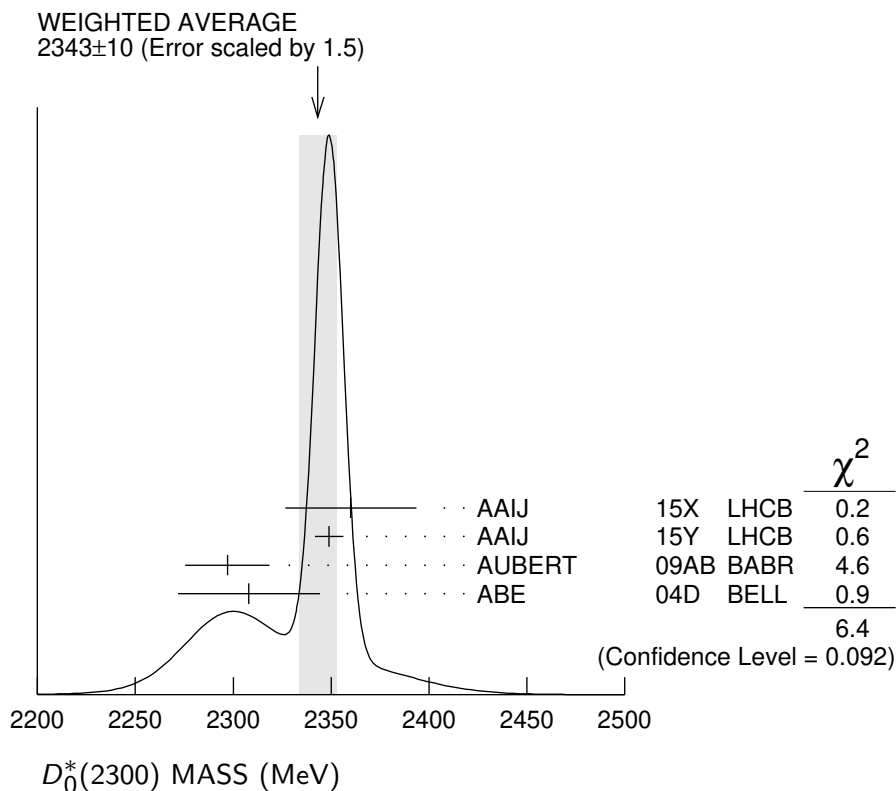
VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
2343±10 OUR AVERAGE	Error	includes scale factor of 1.5.	See the	ideogram	below.
2360±15±30		1 AAIJ	15X LHCb	+	$B^0 \rightarrow \bar{D}^0 K^+ \pi^-$
2349±6±4		2 AAIJ	15Y LHCb	+	$B^0 \rightarrow \bar{D}^0 \pi^+ \pi^-$
2297±8±20	3.4k	AUBERT	09AB BABR	0	$B^- \rightarrow D^+ \pi^- \pi^-$
2308±17±32		ABE	04D BELL	0	$B^- \rightarrow D^+ \pi^- \pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2354±7±11		3 AAIJ	15Y LHCb	+	$B^0 \rightarrow \bar{D}^0 \pi^+ \pi^-$
2403±14±35	18.8k	4 LINK	04A FOCS	+	γA
2407±21±35	9.8k	4 LINK	04A FOCS	0	γA

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

⁴ Possibly the feed-down from another state.



$D_0^*(2300)$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
229 ± 16 OUR AVERAGE					
255 ± 26 ± 51		¹ AAIJ	15X LHCb	+	$B^0 \rightarrow \bar{D}^0 K^+ \pi^-$
217 ± 13 ± 13		² AAIJ	15Y LHCb	+	$B^0 \rightarrow \bar{D}^0 \pi^+ \pi^-$
273 ± 12 ± 48	3.4k	AUBERT	09AB BABR	0	$B^- \rightarrow D^+ \pi^- \pi^-$
276 ± 21 ± 63		ABE	04D BELL	0	$B^- \rightarrow D^+ \pi^- \pi^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
230 ± 15 ± 21		³ AAIJ	15Y LHCb	+	$B^0 \rightarrow \bar{D}^0 \pi^+ \pi^-$
283 ± 24 ± 34	18.8k	⁴ LINK	04A FOCS	+	γA
240 ± 55 ± 59	9.8k	⁴ LINK	04A FOCS	0	γA

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

⁴ Possibly the feed-down from another state.

$D_0^*(2300)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $D\pi^\pm$	seen

$\Gamma(D\pi^\pm)/\Gamma_{\text{total}}$						Γ_1/Γ
VALUE	EVTS	DOCUMENT ID	TECN	CHG	COMMENT	
seen		AAIJ	15X LHCb	+	$D^*(2300)^+ \rightarrow D^0 \pi^+$	
seen		AAIJ	15Y LHCb	+	$D^*(2300)^+ \rightarrow D^0 \pi^+$	
seen	3.4k	AUBERT	09AB BABR	0	$D^*(2300)^0 \rightarrow D^+ \pi^-$	
seen		ABE	04D BELL	0	$D^*(2300)^0 \rightarrow D^+ \pi^-$	
seen	18.8k	LINK	04A FOCS	+	$D^*(2300)^+ \rightarrow D^0 \pi^+$	

$D_0^*(2300)$ REFERENCES

AAIJ	15X	PR D92 012012	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	15Y	PR D92 032002	R. Aaij <i>et al.</i>	(LHCb Collab.)
AUBERT	09AB	PR D79 112004	B. Aubert <i>et al.</i>	(BABAR Collab.)
ABE	04D	PR D69 112002	K. Abe <i>et al.</i>	(BELLE Collab.)
LINK	04A	PL B586 11	J.M. Link <i>et al.</i>	(FOCUS Collab.)