$D_1(2420)^0$

$I(J^P) = \frac{1}{2}(1^+)$
I, J, P need confirmation.

Seen in $D^*(2010)^+\pi^-$. $J^P = 1^+$ according to ALBRECHT 89H.

$D_1(2420)^0$ MASS

VALUE (MeV)			*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
2422.2±1.8 OUR AVERAGE				Error includes scale factor of 1.2.			
2421	$^{+1}_{-2}$	±2	286	AVERY	94C	CLE2	$e^+e^- \to D^{*+}\pi^-X$
2422	±2	±2	51	FRABETTI	94B	E687	$\gamma\,\mathrm{Be} \to D^{*+}\pi^-X$
2428	±3	±2	279	AVERY	90	CLEO	$e^+e^- \to D^{*+}\pi^-X$
2414	±2	±5	171	ALBRECHT	89H	ARG	$e^+e^- \to D^{*+}\pi^-X$
2428	±8	±5	171	ANJOS	89C	TPS	$\gamma N \to D^{*+}\pi^-X$
• • • We do not use the following data for averages, fits, limits, etc. • • •							
2425	±3		235	[1] ABREU	98M	DLPH	e^+e^-

[1] No systematic error given.

$D_1(2420)^0$ WIDTH

VALUE (MeV)			*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
18.9$^{+\ 4.6}_{-\ 3.5}$ OUR AVERAGE							
20	$^{+\ 6}_{-\ 5}$	± 3	286	AVERY	94C	CLE2	$e^+e^- \to D^{*+}\pi^-X$
15	± 8	± 4	51	FRABETTI	94B	E687	$\gamma\,\mathrm{Be} \to D^{*+}\pi^-X$
23	$^{+\ 8}_{-\ 6}$	$^{+10}_{-\ 3}$	279	AVERY	90	CLEO	$e^+e^- \to D^{*+}\pi^-X$
13	± 6	$^{+10}_{-\ 5}$	171	ALBRECHT	89H	ARG	$e^+e^- \to D^{*+}\pi^-X$
• • • We do not use the following data for averages, fits, limits, etc. • • •							
58	±14	±10	171	ANJOS	89C	TPS	$\gamma N \to D^{*+}\pi^-X$

$D_1(2420)^0$ DECAY MODES

$\overline{D}_1(2420)^0$ modes are charge conjugates of modes below.

	Mode	Fraction (Γ_i/Γ)
Γ_1	$D^*(2010)^+\pi^-$	seen
Γ_2	$D^+\pi^-$	not seen

$D_1(2420)^0$ BRANCHING RATIOS

$\Gamma(D^*(2010)^+\pi^-)/\Gamma_{total}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ACKERSTAFF	97W	OPAL	$e^+e^- \rightarrow D^{*+}\pi^-X$
seen	AVERY	90	CLEO	$e^+e^- \rightarrow D^{*+}\pi^-X$
seen	ALBRECHT	89H	ARG	$e^+e^- \rightarrow D^*\pi^-X$
seen	ANJOS	89C	TPS	$\gamma N \rightarrow D^{*+}\pi^-X$

$\Gamma(D^+\pi^-)/\Gamma(D^*(2010)^+\pi^-)$ Γ_2/Γ_1

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.24	90	AVERY	90	CLEO	$e^+e^- \rightarrow D^+\pi^-X$

$D_1(2420)^0$ REFERENCES

ABREU	98M	PL B426 231	P. Abreu *et al.*	(DELPHI Collab.)
ACKERSTAFF	97W	ZPHY C76 425	K. Ackerstaff *et al.*	(OPAL Collab.)
AVERY	94C	PL B331 236	P. Avery *et al.*	(CLEO Collab.)
FRABETTI	94B	PRL 72 324	P.L. Frabetti *et al.*	(FNAL E687 Collab.)
AVERY	90	PR D41 774	P. Avery, D. Besson	(CLEO Collab.)
ALBRECHT	89H	PL B232 398	H. Albrecht *et al.*	(ARGUS Collab.) JP
ANJOS	89C	PRL 62 1717	J.C. Anjos *et al.*	(FNAL E691 Collab.)

OTHER RELATED PAPERS

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