$D_1(2420)^0$

$I(J^P) = \frac{1}{2}(1^+)$
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.					
$2421\ ^{+1}_{-2}\ \pm2$	286	AVERY	94C	CLE2	$e^+e^- \to D^{*+}\pi^-X$
$2422\ \pm2\ \pm2$	51	FRABETTI	94B	E687	$\gamma\,\mathrm{Be} \to D^{*+}\pi^-X$
$2428\ \pm3\ \pm2$	279	AVERY	90	CLEO	$e^+e^- \to D^{*+}\pi^-X$
$2414\ \pm2\ \pm5$	171	ALBRECHT	89H	ARG	$e^+e^- \to D^{*+}\pi^-X$
$2428\ \pm8\ \pm5$	171	ANJOS	89C	TPS	$\gamma N \to D^{*+}\pi^-X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$2425\ \pm3$	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					
$20\ ^{+\ 6}_{-\ 5}\ \pm\ 3$	286	AVERY	94C	CLE2	$e^+e^- \to D^{*+}\pi^-X$
$15\ \pm\ 8\ \pm\ 4$	51	FRABETTI	94B	E687	$\gamma\,\mathrm{Be} \to D^{*+}\pi^-X$
$23\ ^{+\ 8}_{-\ 6}\ ^{+10}_{-\ 3}$	279	AVERY	90	CLEO	$e^+e^- \to D^{*+}\pi^-X$
$13\ \pm\ 6\ ^{+10}_{-\ 5}$	171	ALBRECHT	89H	ARG	$e^+e^- \to D^{*+}\pi^-X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$58\ \pm14\ \pm10$	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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