

# $D_1(2420)^0$

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

$I, J, P$  need confirmation.

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

## $D_1(2420)^0$ MASS

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>2422.2 ± 1.8 OUR AVERAGE</b>		Error includes scale factor of 1.2.		
2421 $\begin{smallmatrix} +1 \\ -2 \end{smallmatrix} \pm 2$	286	AVERY	94C CLE2	$e^+ e^- \rightarrow D^{*+} \pi^- X$
2422 $\pm 2 \pm 2$	51	FRABETTI	94B E687	$\gamma Be \rightarrow D^{*+} \pi^- X$
2428 $\pm 3 \pm 2$	279	AVERY	90 CLEO	$e^+ e^- \rightarrow D^{*+} \pi^- X$
2414 $\pm 2 \pm 5$	171	ALBRECHT	89H ARG	$e^+ e^- \rightarrow D^{*+} \pi^- X$
2428 $\pm 8 \pm 5$	171	ANJOS	89C TPS	$\gamma N \rightarrow D^{*+} \pi^- X$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
2425 $\pm 3$	235	<sup>1</sup> ABREU	98M DLPH	$e^+ e^-$
<sup>1</sup> No systematic error given.				

## $D_1(2420)^0$ WIDTH

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

## $D_1(2420)^0$ DECAY MODES

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

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $D^*(2010)^+ \pi^-$	seen
$\Gamma_2$ $D^+ \pi^-$	not seen

## $D_1(2420)^0$ BRANCHING RATIOS

$\Gamma(D^*(2010)^+ \pi^-)/\Gamma_{\text{total}}$	$\Gamma_1/\Gamma$		
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>seen</b>	AVERY	90 CLEO	$e^+ e^- \rightarrow D^{*+} \pi^- X$
<b>seen</b>	ALBRECHT	89H ARG	$e^+ e^- \rightarrow D^* \pi^- X$
<b>seen</b>	ANJOS	89C TPS	$\gamma N \rightarrow D^{*+} \pi^- X$

$\Gamma(D^+ \pi^-) / \Gamma(D^{*(2010)^+} \pi^-)$					$\Gamma_2 / \Gamma_1$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>&lt;0.24</b>	90	AVERY	90 CLEO	$e^+ e^- \rightarrow D^+ \pi^- X$	

### $D_1(2420)^0$ REFERENCES

ABREU	98M	PL B426 231	P. Abreu <i>et al.</i>	(DELPHI Collab.)
AVERY	94C	PL B331 236	P. Avery <i>et al.</i>	(CLEO Collab.)
FRABETTI	94B	PRL 72 324	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)
AVERY	90	PR D41 774	P. Avery, D. Besson	(CLEO Collab.)
ALBRECHT	89H	PL B232 398	H. Albrecht <i>et al.</i>	(ARGUS Collab.) JP
ANJOS	89C	PRL 62 1717	J.C. Anjos <i>et al.</i>	(FNAL E691 Collab.)

### OTHER RELATED PAPERS

SEMENOV	99	SPU 42 847	S.V. Semenov	
		Translated from UFN 42 937.		