



$$I(J^P) = 0(?^?)$$

$J^P$  is natural, width and decay modes consistent with  $1^-$ .

### $D_s^{*\pm}$ MASS

The fit includes  $D^\pm$ ,  $D^0$ ,  $D_s^\pm$ ,  $D^{*\pm}$ ,  $D^{*0}$ , and  $D_s^{*\pm}$  mass and mass difference measurements.

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
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**2112.4 ± 0.7 OUR FIT** Error includes scale factor of 1.1.

**2106.6 ± 2.1 ± 2.7** <sup>1</sup>BLAYLOCK 87 MRK3  $e^+e^- \rightarrow D_s^\pm \gamma X$

<sup>1</sup> Assuming  $D_s^\pm$  mass =  $1968.7 \pm 0.9$  MeV.

### $m_{D_s^{*\pm}} - m_{D_s^\pm}$

The fit includes  $D^\pm$ ,  $D^0$ ,  $D_s^\pm$ ,  $D^{*\pm}$ ,  $D^{*0}$ , and  $D_s^{*\pm}$  mass and mass difference measurements.

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
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**143.8 ± 0.4 OUR FIT**

**143.9 ± 0.4 OUR AVERAGE**

143.76 ± 0.39 ± 0.40

GRONBERG 95 CLE2  $e^+e^-$

144.22 ± 0.47 ± 0.37

BROWN 94 CLE2  $e^+e^-$

142.5 ± 0.8 ± 1.5

<sup>2</sup>ALBRECHT 88 ARG  $e^+e^- \rightarrow D_s^\pm \gamma X$

139.5 ± 8.3 ± 9.7 60

AIHARA 84D TPC  $e^+e^- \rightarrow$  hadrons

• • • We do not use the following data for averages, fits, limits, etc. • • •

143.0 ± 18.0 8

ASRATYAN 85 HLBC FNAL 15-ft,  $\nu$ -<sup>2</sup>H

110 ± 46

BRANDELIK 79 DASP  $e^+e^- \rightarrow D_s^\pm \gamma X$

<sup>2</sup> Result includes data of ALBRECHT 84B.

### $D_s^{*\pm}$ WIDTH

VALUE (MeV)	CL%	DOCUMENT ID	TECN	COMMENT
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< 1.9

90 GRONBERG 95 CLE2  $e^+e^-$

< 4.5

90 ALBRECHT 88 ARG  $E_{cm}^{ee} = 10.2$  GeV

• • • We do not use the following data for averages, fits, limits, etc. • • •

< 4.9

90 BROWN 94 CLE2  $e^+e^-$

< 22

90 BLAYLOCK 87 MRK3  $e^+e^- \rightarrow D_s^\pm \gamma X$

## $D_s^{*+}$ DECAY MODES

$D_s^{*-}$  modes are charge conjugates of the modes below.

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad D_s^+ \gamma$	$(94.2 \pm 2.5) \%$
$\Gamma_2 \quad D_s^+ \pi^0$	$(5.8 \pm 2.5) \%$

### CONSTRAINED FIT INFORMATION

An overall fit to a branching ratio uses 1 measurements and one constraint to determine 2 parameters. The overall fit has a  $\chi^2 = 0.0$  for 0 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients  $\langle \delta x_i \delta x_j \rangle / (\delta x_i \delta x_j)$ , in percent, from the fit to the branching fractions,  $x_i \equiv \Gamma_i / \Gamma_{\text{total}}$ . The fit constrains the  $x_i$  whose labels appear in this array to sum to one.

$$x_2 \begin{vmatrix} & -100 \\ & x_1 \end{vmatrix}$$

### $D_s^{*+}$ BRANCHING RATIOS

$\Gamma(D_s^+ \gamma) / \Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	$\Gamma_1/\Gamma$
<u>VALUE</u>				
<b>0.942 ± 0.026 OUR FIT</b>				
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
seen	ASRATYAN	91	HLBC	$\bar{\nu}_\mu \text{ Ne}$
seen	ALBRECHT	88	ARG	$e^+ e^- \rightarrow D_s^\pm \gamma X$
seen	AIHARA	84D		
seen	ALBRECHT	84B		
seen	BRANDELIK	79		
$\Gamma(D_s^+ \pi^0) / \Gamma(D_s^+ \gamma)$	DOCUMENT ID	TECN	COMMENT	$\Gamma_2/\Gamma_1$
<u>VALUE</u>				
<b>0.062 ± 0.029 OUR FIT</b>				
<b>0.062<sup>+0.020</sup><sub>-0.018</sub> ± 0.022</b>	GRONBERG	95	CLE2	$e^+ e^-$

### $D_s^{*\pm}$ REFERENCES

GRONBERG	95	PRL 75 3232	J. Gronberg <i>et al.</i>	(CLEO Collab.)
BROWN	94	PR D50 1884	D. Brown <i>et al.</i>	(CLEO Collab.)
ASRATYAN	91	PL B257 525	A.E. Asratyan <i>et al.</i>	(ITEP, BELG, SACL+)
ALBRECHT	88	PL B207 349	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
BLAYLOCK	87	PRL 58 2171	G.T. Blaylock <i>et al.</i>	(Mark III Collab.)
ASRATYAN	85	PL 156B 441	A.E. Asratyan <i>et al.</i>	(ITEP, SERP)
AIHARA	84D	PRL 53 2465	H. Aihara <i>et al.</i>	(TPC Collab.)
ALBRECHT	84B	PL 146B 111	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
BRANDELIK	79	PL 80B 412	R. Brandelik <i>et al.</i>	(DASP Collab.)

————— **OTHER RELATED PAPERS** —————

KAMAL	92	PL B284 421	A.N. Kamal, Q.P. Xu	(ALBE)
BRANDELIK	78C	PL 76B 361	R. Brandelik <i>et al.</i>	(DASP Collab.)
BRANDELIK	77B	PL 70B 132	R. Brandelik <i>et al.</i>	(DASP Collab.)

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