



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

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
2112.4 ± 0.7 OUR FIT	Error includes scale factor of 1.1.		
2106.6 ± 2.1 ± 2.7	¹ BLAYLOCK	87 MRK3	$e^+e^- \rightarrow D_s^\pm \gamma X$

¹ Assuming D_s^\pm mass = 1968.7 ± 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
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		² 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, ν - ² H
110 ± 46		BRANDELIK	79 DASP	$e^+e^- \rightarrow D_s^\pm \gamma X$

² Result includes data of ALBRECHT 84B.

$D_s^{*\pm}$ WIDTH

VALUE (MeV)	CL%	DOCUMENT ID	TECN	COMMENT
< 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 (Γ_i/Γ)
$\Gamma_1 \quad D_s^+ \gamma$	(94.2±2.5) %
$\Gamma_2 \quad D_s^+ \pi^0$	(5.8±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 $\langle \delta x_i \delta x_j \rangle / (\delta x_i \cdot \delta x_j)$, 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	Γ_1/Γ
<u>VALUE</u>				
0.942±0.026 OUR FIT				
• • • 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	Γ_2/Γ_1
<u>VALUE</u>				
0.062±0.029 OUR FIT				
0.062^{+0.020}_{-0.018} ±0.022	GRONBERG	95	CLE2 $e^+ e^-$	

$D_s^{*\pm}$ REFERENCES

GRONBERG	95	PRL 75 3232	+Korte, Kutschke+	(CLEO Collab.)
BROWN	94	PR D50 1884	+Fast, McIlwain, Miao+	(CLEO Collab.)
ASRATYAN	91	PL B257 525	+Marage+(ITEP, BELG, SACL, SERP, CRAC, BARI, CERN)	
ALBRECHT	88	PL B207 349	+Binder, Boeckmann+	(ARGUS Collab.)
BLAYLOCK	87	PRL 58 2171	+Bolton, Brown, Bunnell+	(Mark III Collab.)
ASRATYAN	85	PL 156B 441	+Fedotov, Ammosov, Burtovoy+	(ITEP, SERP)
AIHARA	84D	PRL 53 2465	+Alston-Garnjost, Badtke, Bakken+	(TPC Collab.)
ALBRECHT	84B	PL 146B 111	+Drescher, Heller+	(ARGUS Collab.)
BRANDELIK	79	PL 80B 412	+Braunschweig, Martyn, Sander+	(DASP Collab.)

————— **OTHER RELATED PAPERS** —————

KAMAL	92	PL B284 421	+Xu	(ALBE)
BRANDELIK	78C	PL 76B 361	+Cords+	(DASP Collab.)
BRANDELIK	77B	PL 70B 132	+Braunschweig, Martyn, Sander+	(DASP Collab.)
