$D_s^{*\pm}$

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

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
2111.9±0.7 OUR FIT Error includes scale factor of 1.1.				
2106.6±2.1±2.7	[1] BLAYLOCK	87	MRK3	$e^+e^- \to D_s^\pm \gamma X$

[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	$e^+e^- \to D_s^\pm \gamma X$
139.5 ± 8.3 ±9.7	60	AIHARA	84D	TPC	$e^+e^- \to$ 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	$e^+e^- \to D_s^\pm \gamma X$

[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	$e^+e^- \to D_s^\pm \gamma X$

D_s^{*+} DECAY MODES

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

	Mode	Fraction (Γ_i/Γ)
Γ_1	$D_s^+ \gamma$	(94.2±2.5) %
Γ_2	$D_s^+ \pi^0$	(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 χ^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, $x_i \equiv \Gamma_i/\Gamma_{total}$. The fit constrains the x_i whose labels appear in this array to sum to one.

	x_1
x_2	−100

D_s^{*+} BRANCHING RATIOS

$\Gamma(D_s^+ \gamma)/\Gamma_{total}$ — Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.942±0.026 OUR FIT				
• • • We do not use the following data for averages, fits, limits, etc. • • •				
seen	ASRATYAN	91	HLBC	$\overline{\nu}_\mu$ Ne
seen	ALBRECHT	88	ARG	$e^+ e^- \rightarrow D_s^\pm \gamma X$
seen	AIHARA	84D		
seen	ALBRECHT	84B		
seen	BRANDELIK	79		

$\Gamma(D_s^+ \pi^0)/\Gamma(D_s^+ \gamma)$ — Γ_2/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.062±0.029 OUR FIT				
$0.062^{+0.020}_{-0.018} \pm 0.022$	GRONBERG	95	CLE2	$e^+ e^-$

$D_s^{*\pm}$ REFERENCES

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

OTHER RELATED PAPERS

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