NODE=S074

$D_s^{*\pm}$

$I(J^P) = 0(1^-)$

$J^P = 1^-$ established by ABLIKIM 23AZ.

NODE=S074

$D_s^{*\pm}$ MASS

NODE=S074M

The fit includes $D^\pm$, D^0, $D_s^\pm$, $D^{*\pm}$, D^{*0}, $D_s^{*\pm}$, $D_1(2420)^0$, $D_2^*(2460)^0$, and $D_{s1}(2536)^\pm$ mass and mass difference measurements.

NODE=S074M

NODE=S074M

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
2112.2±0.4 OUR FIT				
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.

NODE=S074M;LINKAGE=E

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

NODE=S074DM

The fit includes $D^\pm$, D^0, $D_s^\pm$, $D^{*\pm}$, D^{*0}, $D_s^{*\pm}$, $D_1(2420)^0$, $D_2^*(2460)^0$, and $D_{s1}(2536)^\pm$ mass and mass difference measurements.

NODE=S074DM

NODE=S074DM

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.

NODE=S074DM;LINKAGE=A

$D_s^{*\pm}$ WIDTH

NODE=S074W

NODE=S074W

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

NODE=S074215;NODE=S074

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

NODE=S074

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$D_s^+\gamma$	(93.6 ±0.4) %	DESIG=1
Γ_2	$D_s^+\pi^0$	(5.77±0.35) %	DESIG=2
Γ_3	$D_s^+e^+e^-$	(6.7 ±1.6) $\times 10^{-3}$	DESIG=3
Γ_4	$e^+\nu_e$	(2.1 $^{+1.2}_{-0.9}$) $\times 10^{-5}$	DESIG=4

CONSTRAINED FIT INFORMATION

An overall fit to 2 branching ratios uses 4 measurements and one constraint to determine 3 parameters. The overall fit has a $\chi^2 =$ 0.0 for 2 degrees of freedom.

The following *off-diagonal* array elements are the correlation coefficients $\left\langle \delta x_i \delta x_j \right\rangle / (\delta x_i \cdot \delta x_j)$, 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	−91	
x_3	−38	−4
	x_1	x_2

D_s^{*+} BRANCHING RATIOS

NODE=S074220

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

NODE=S074R1
NODE=S074R1

VALUE (%)	*DOCUMENT ID*		*TECN*	*COMMENT*
• • • 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

NODE=S074R2
NODE=S074R2

VALUE (units 10^{-2})	*DOCUMENT ID*		*TECN*	*COMMENT*
6.2 ±0.4 OUR FIT				
6.2 ±0.4 OUR AVERAGE				
6.16±0.43±0.18	ABLIKIM	23P	BES3	$e^+ e^-$
6.2 ±0.5 ±0.6	AUBERT,BE	05G	BABR	10.6 $e^+ e^- \rightarrow$ hadrons
6.2 $^{+2.0}_{-1.8}$ ±2.2	GRONBERG	95	CLE2	$e^+ e^-$

$\Gamma(D_s^+ e^+ e^-)/\Gamma(D_s^+ \gamma)$ Γ_3/Γ_1

NODE=S074R01
NODE=S074R01

VALUE (units 10^{-3})	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
7.2±1.7 OUR FIT					
7.2$^{+1.5}_{-1.3}$±1.0	38	CRONIN-HEN..	12	CLEO	4.17 $e^+ e^- \rightarrow$ hadrons

$\Gamma(e^+ \nu_e)/\Gamma_{\text{total}}$ Γ_4/Γ

NODE=S074R02
NODE=S074R02

VALUE (units 10^{-5})	*DOCUMENT ID*		*TECN*	*COMMENT*
2.1$^{+1.2}_{-0.9}$±0.2	ABLIKIM	23BF	BES3	$e^+ e^- \rightarrow D_s^- D_s^{*+}$

$D_s^{*\pm}$ REFERENCES

NODE=S074

ABLIKIM	23AZ	PL B846 138245	M. Ablikim *et al.*	(BESIII Collab.) JP	REFID=62420
ABLIKIM	23BF	PRL 131 141802	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62430
ABLIKIM	23P	PR D107 032011	M. Ablikim *et al.*	(BESIII Collab.)	REFID=62059
CRONIN-HEN...	12	PR D86 072005	D. Cronin-Hennessey *et al.*	(CLEO Collab.)	REFID=54627
AUBERT,BE	05G	PR D72 091101	B. Aubert *et al.*	(BABAR Collab.)	REFID=50942
GRONBERG	95	PRL 75 3232	J. Gronberg *et al.*	(CLEO Collab.)	REFID=44568
BROWN	94	PR D50 1884	D. Brown *et al.*	(CLEO Collab.)	REFID=43868
ASRATYAN	91	PL B257 525	A.E. Asratyan *et al.*	(ITEP, BELG, SACL+)	REFID=41582
ALBRECHT	88	PL B207 349	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40269
BLAYLOCK	87	PRL 58 2171	G.T. Blaylock *et al.*	(Mark III Collab.)	REFID=40005
ASRATYAN	85	PL 156B 441	A.E. Asratyan *et al.*	(ITEP, SERP)	REFID=22887
AIHARA	84D	PRL 53 2465	H. Aihara *et al.*	(TPC Collab.)	REFID=11561
ALBRECHT	84B	PL 146B 111	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=22886
BRANDELIK	79	PL 80B 412	R. Brandelik *et al.*	(DASP Collab.)	REFID=11442