



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

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 |
|-------------|-------------|------|---------|
|-------------|-------------|------|---------|

2112.0 ± 0.6 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 -²H

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) |
|-------------------------------|--------------------------------|
| $\Gamma_1 \quad D_s^+ \gamma$ | $(94.2 \pm 2.5) \%$ |
| $\Gamma_2 \quad D_s^+ \pi^0$ | $(5.8 \pm 2.5) \%$ |

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 | 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 | | | | |
| $0.062^{+0.020}_{-0.018} \pm 0.022$ | 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.) |
