Meson Full Listings

$D_s^{*\pm}$, $D_{s1}(2536)^{\pm}$, $D_{sJ}(2573)^{\pm}$

D_s^{*+} DECAY MODES

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

	Mode	Fraction (Γ_i/Γ)
Γ_1	$D_s^+\gamma$	dominant

D_s^{*+} BRANCHING RATIOS

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

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

$D_s^{*\pm}$ REFERENCES

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.)

$D_{s1}(2536)^{\pm}$

$I(J^P) = 0(1^+)$
I, J, P need confirmation.

Seen in $D^*(2010)^+K^0$. Not seen in D^+K^0 or D^0K^+. $J^P = 1^+$ assignment strongly favored.

$D_{s1}(2536)^{\pm}$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2535.35 ± 0.34 OUR AVERAGE					
2534.2 ± 1.2	9	ASRATYAN	94	BEBC	$\nu N \to D^*K^0X, D^{*0}K^{\pm}X$
2535.0 ± 0.6 ±1.0	75 ± 14	FRABETTI	94B	E687	γ Be $\to D^{*+}K^0X$, $D^{*0}K^+X$
2535.3 ± 0.2 ±0.5	134 ± 22	ALEXANDER	93	CLE2	$e^+e^- \to D^{*0}K^+X$
2534.8 ± 0.6 ±0.6	44 ± 8	ALEXANDER	93	CLE2	$e^+e^- \to D^{*+}K^0X$
2535.2 ± 0.5 ±1.5	28	ALBRECHT	92R	ARG	10.4 $e^+e^- \to D^{*0}K^+X$
2536.6 ± 0.7 ±0.4		AVERY	90	CLEO	$e^+e^- \to D^{*+}K^0X$
2535.9 ± 0.6 ±2.0		ALBRECHT	89E	ARG	$D_{s1}^* \to D^*(2010)K^0$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2535 ±28		[1] ASRATYAN	88	HLBC	$\nu N \to D_s\gamma\gamma X$

[1] Not seen in D^*K.

$m_{D_{s1}(2536)^{\pm}} - m_{D_s^{*\pm}(2111)}$

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
424±28	ASRATYAN	88	HLBC	$D_s^{*\pm}\gamma$

$D_{s1}(2536)^{\pm}$ WIDTH

VALUE (MeV)	CL%	EVTS	DOCUMENT ID		TECN	COMMENT
<2.3	90		ALEXANDER	93	CLEO	$e^+e^- \to D^{*0}K^+X$
• • • We do not use the following data for averages, fits, limits, etc. • • •						
<3.2	90	75 ± 14	FRABETTI	94B	E687	γ Be $\to D^{*+}K^0X$, $D^{*0}K^+X$
<3.9	90		ALBRECHT	92R	ARG	10.4 $e^+e^- \to D^{*0}K^+X$
<5.44	90		AVERY	90	CLEO	$e^+e^- \to D^{*+}K^0X$
<4.6	90		ALBRECHT	89E	ARG	$D_{s1}^* \to D^*(2010)K^0$

$D_{s1}(2536)^+$ DECAY MODES

$D_{s1}(2536)^-$ modes are charge conjugates of the modes below.

	Mode	Fraction (Γ_i/Γ)
Γ_1	$D^*(2010)^+K^0$	seen
Γ_2	$D^*(2007)^0K^+$	seen
Γ_3	D^+K^0	not seen
Γ_4	D^0K^+	not seen
Γ_5	$D_s^{*+}\gamma$	possibly seen

$D_{s1}(2536)^+$ BRANCHING RATIOS

$\Gamma(D^+K^0)/\Gamma(D^*(2010)^+K^0)$ **Γ_3/Γ_1**

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.40	90	ALEXANDER	93	CLEO	$e^+e^- \to D^{*+}K^0X$
<0.43	90	ALBRECHT	89E	ARG	$D_{s1}^* \to D^*(2010)K^0$

$\Gamma(D_s^{*+}\gamma)/\Gamma_{\text{total}}$ **Γ_5/Γ**

VALUE	DOCUMENT ID		TECN	COMMENT
possibly seen	ASRATYAN	88	HLBC	$\nu N \to D_s\gamma\gamma X$

$\Gamma(D^0K^+)/\Gamma(D^*(2007)^0K^+)$ **Γ_4/Γ_2**

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.12	90	ALEXANDER	93	CLEO	$e^+e^- \to D^{*0}K^+X$

$\Gamma(D_s^{*+}\gamma)/\Gamma(D^*(2007)^0K^+)$ **Γ_5/Γ_2**

VALUE	CL%	DOCUMENT ID		TECN	COMMENT
<0.42	90	ALEXANDER	93	CLEO	$e^+e^- \to D^{*0}K^+X$

$D_{s1}(2536)^{\pm}$ REFERENCES

ASRATYAN	94	ZPHY C 61 563	+Aderholz+ (BIRM, BELG, CERN, SERP, ITEP, RAL)
FRABETTI	94B	PRL 72 324	+Cheung, Cumalat+ (FNAL E687 Collab.)
ALEXANDER	93	PL B303 377	+Bebek+ (CLEO Collab.)
ALBRECHT	92R	PL B297 425	+Ehrlichmann+ (ARGUS Collab.)
AVERY	90	PR D41 774	+Besson (CLEO Collab.)
ALBRECHT	89E	PL B230 162	+Glaser, Harder+ (ARGUS Collab.)
ASRATYAN	88	ZPHY C40 483	+Fedotov+ (ITEP, SERP)

$D_{sJ}(2573)^{\pm}$

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

OMITTED FROM SUMMARY TABLE

J^P is natural, width and decay modes consistent with 2^+. Needs confirmation.

$D_{sJ}(2573)^{\pm}$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
$2573.2^{+1.7}_{-1.6}\pm0.9$	217	KUBOTA	94	CLE2	+	$e^+e^-\sim$ 10.5 GeV

$D_{sJ}(2573)^{\pm}$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
$16^{+5}_{-4}\pm3$	217	KUBOTA	94	CLE2	+	$e^+e^-\sim$ 10.5 GeV

$D_{sJ}(2573)^+$ DECAY MODES

$D_{sJ}(2573)^-$ modes are charge conjugates of the modes below.

	Mode	Fraction (Γ_i/Γ)
Γ_1	D^0K^+	seen
Γ_2	$D^*(2007)^0K^+$	not seen

$D_{sJ}(2573)^+$ BRANCHING RATIOS

$\Gamma(D^0K^+)/\Gamma_{\text{total}}$ **Γ_1/Γ**

VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
seen	217	KUBOTA	94	CLE2	±	$e^+e^-\sim$ 10.5 GeV

$\Gamma(D^*(2007)^0K^+)/\Gamma(D^0K^+)$ **Γ_2/Γ_1**

VALUE	CL%	DOCUMENT ID		TECN	CHG	COMMENT
<0.33	90	KUBOTA	94	CLE2	+	$e^+e^-\sim$ 10.5 GeV

$D_{sJ}(2573)^{\pm}$ REFERENCES

KUBOTA	94	PRL 72 1972	+Lattery, Nelson, Patton+ (CLEO II Collab.)