NODE=M148

$D_{s2}^*(2573)$

$I(J^P) = 0(2^+)$

J^P is natural, width and decay modes consistent with 2^+. AAIJ 14AW confirms $J^P = 2^+$.

NODE=M148

$D_{s2}^*(2573)$ MASS

NODE=M148M

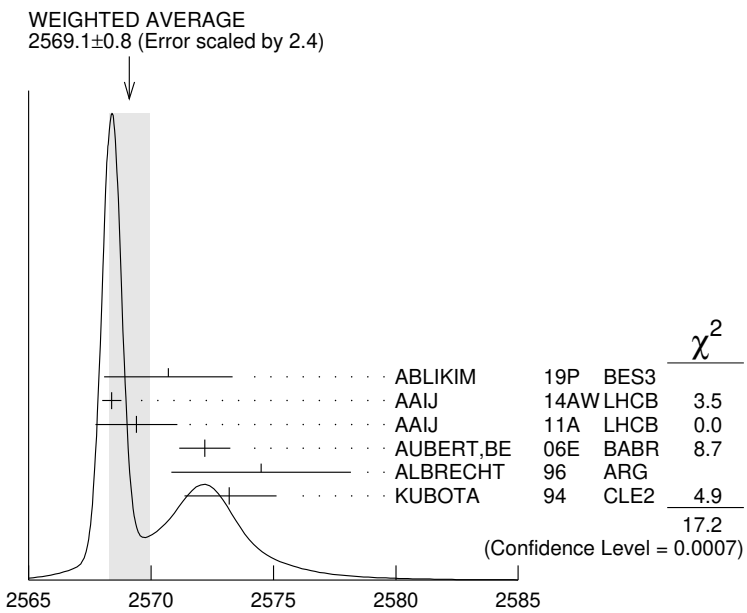
NODE=M148M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2569.1 ±0.8 OUR AVERAGE Error includes scale factor of 2.4. See the ideogram below.					
2570.7 ±2.0 ±1.7	62	[1] ABLIKIM	19P	BES3	4.6 $e^+e^- \to D_s^+ \overline{D}^0 K^-$
2568.39±0.29±0.26		AAIJ	14AW	LHCB	$B_s^0 \to \overline{D}^0 K^- \pi^+$
2569.4 ±1.6 ±0.5	82	AAIJ	11A	LHCB	$B_s \to D_{s2}^*(2573) \mu \overline{\nu} X$
2572.2 ±0.3 ±1.0		AUBERT,BE	06E	BABR	$e^+e^- \to D K X$
2574.5 ±3.3 ±1.6		ALBRECHT	96	ARG	$e^+e^- \to D^0 K^+ X$
2573.2 $^{+1.7}_{-1.6}$ ±0.9	217	KUBOTA	94	CLE2	$e^+e^- \sim$ 10.5 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2570.0 ±4.3	25	[2] EVDOKIMOV	04	SELX	600 $\Sigma^- A \to D^0 K^+ X$
2568.6 ±3.2	64	[3] HEISTER	02B	ALEP	$e^+e^- \to D^0 K^+ X$

[1] From a fit of the D_s^+ recoil mass distribution . NODE=M148M;LINKAGE=A

[2] Not independent of the mass difference below. NODE=M148M;LINKAGE=EV

[3] Calculated using m_{D^0}= 1864.5 ± 0.5 MeV and the mass difference below. NODE=M148M;LINKAGE=HI



$m_{D_{s2}^*(2573)} - m_{D^0}$

NODE=M148DM

NODE=M148DM

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
704 ±3 ±1	64	HEISTER	02B	ALEP	$e^+e^- \to D^0 K^+ X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
705.4±4.3	25	[1] EVDOKIMOV	04	SELX	600 $\Sigma^- A \to D^0 K^+ X$

[1] Systematic errors not estimated. NODE=M148DM;LINKAGE=EV

$D_{s2}^*(2573)$ WIDTH

NODE=M148W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
16.9±0.7 OUR AVERAGE					
17.2±3.6±1.1	62	[1] ABLIKIM	19P	BES3	4.6 $e^+e^- \to D_s^+ \overline{D}^0 K^-$
16.9±0.5±0.6		AAIJ	14AW	LHCB	$B_s^0 \to \overline{D}^0 K^- \pi^+$
12.1±4.5±1.6	82	AAIJ	11A	LHCB	$B_s \to D_{s2}^*(2573) \mu \overline{\nu} X$
27.1±0.6±5.6		AUBERT,BE	06E	BABR	$e^+e^- \to D K X$
10.4±8.3±3.0		ALBRECHT	96	ARG	$e^+e^- \to D^0 K^+ X$
$16 \; {}^{+5}_{-4} \pm 3$	217	KUBOTA	94	CLE2	$e^+e^- \sim$ 10.5 GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •					
$14 \; {}^{+9}_{-6}$	25	[2] EVDOKIMOV	04	SELX	600 $\Sigma^- A \to D^0 K^+ X$

[1] From a fit of the D_s^+ recoil mass distribution . NODE=M148W;LINKAGE=A

[2] Systematic errors not estimated. NODE=M148W;LINKAGE=EV

NODE=M148W

$D_{s2}^*(2573)^+$ DECAY MODES

NODE=M148215;NODE=M148

$D_{s2}^*(2573)^-$ modes are charge conjugates of the modes below. NODE=M148

	Mode	Fraction (Γ_i/Γ)	
Γ_1	$D^0 K^+$	seen	DESIG=1
Γ_2	$D^*(2007)^0 K^+$	not seen	DESIG=2;OUR EVAL;→ UNCHECKED ←
Γ_3	$D^+ K_S^0$		DESIG=4
Γ_4	$D^{*+} K_S^0$		DESIG=5

$D_{s2}^*(2573)^+$ BRANCHING RATIOS

NODE=M148220

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

NODE=M148R2
NODE=M148R2

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

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

NODE=M148R1
NODE=M148R1

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

$\Gamma(D^{*+} K_S^0)/\Gamma(D^+ K_S^0)$ — Γ_4/Γ_3

NODE=M148R00
NODE=M148R00

VALUE	EVTS	DOCUMENT ID		TECN	COMMENT
0.044±0.005±0.011	2000	[1] AAIJ	16AW	LHCB	$pp \to D^{*+} K_S^0 X$ at 7, 8 TeV

[1] First observation of the $D_{s2}^*(2573)^+ \to D^{*+} K_S^0$ decay with a significance of 6.9 σ. NODE=M148R00;LINKAGE=A

$D_{s2}^*(2573)$ REFERENCES

NODE=M148

ABLIKIM	19P	CP C43 031001	M. Ablikim *et al.*	(BESIII Collab.)	REFID=59617
AAIJ	16AW	JHEP 1602 133	R. Aaij *et al.*	(LHCb Collab.)	REFID=60464
AAIJ	14AW	PRL 113 162001	R. Aaij *et al.*	(LHCb Collab.) JP	REFID=56105
AAIJ	11A	PL B698 14	R. Aaij *et al.*	(LHCb Collab.)	REFID=16665
AUBERT,BE	06E	PRL 97 222001	B. Aubert *et al.*	(BABAR Collab.)	REFID=51512
EVDOKIMOV	04	PRL 93 242001	A.V. Evdokimov *et al.*	(SELEX Collab.)	REFID=50337
HEISTER	02B	PL B526 34	A. Heister *et al.*	(ALEPH Collab.)	REFID=48562
ALBRECHT	96	ZPHY C69 405	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=44631
KUBOTA	94	PRL 72 1972	Y. Kubota *et al.*	(CLEO Collab.)	REFID=43781