

$D_{s2}^*(2573)$

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

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

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 $e^+e^- \rightarrow D_s^+ \bar{D}^0 K^-$
2568.39 ± 0.29 ± 0.26		AAIJ	14AW LHCb	$B_s^0 \rightarrow \bar{D}^0 K^- \pi^+$
2569.4 ± 1.6 ± 0.5	82	AAIJ	11A LHCb	$B_s \rightarrow D_{s2}^*(2573) \mu \bar{\nu} X$
2572.2 ± 0.3 ± 1.0		AUBERT, BE	06E BABR	$e^+e^- \rightarrow DKX$
2574.5 ± 3.3 ± 1.6		ALBRECHT	96 ARG	$e^+e^- \rightarrow D^0 K^+ X$
2573.2 $\begin{smallmatrix} +1.7 \\ -1.6 \end{smallmatrix}$ ± 0.9	217	KUBOTA	94 CLE2	$e^+e^- \sim 10.5$ GeV

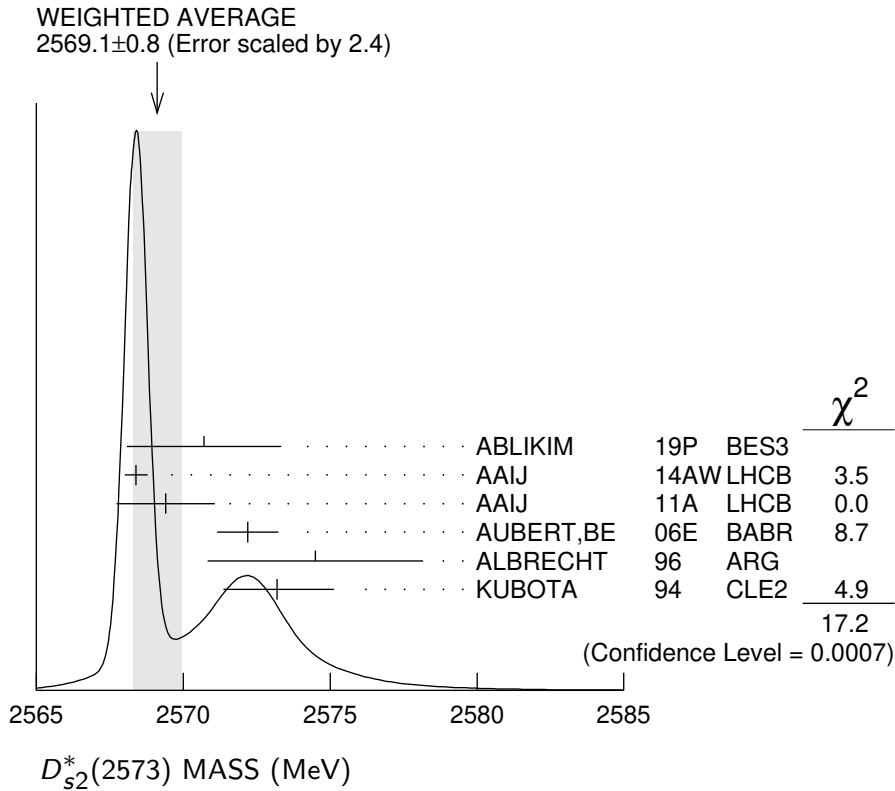
• • • We do not use the following data for averages, fits, limits, etc. • • •

2570.0 ± 4.3	25	² EVDOKIMOV	04 SELX	600 $\Sigma^- A \rightarrow D^0 K^+ X$
2568.6 ± 3.2	64	³ HEISTER	02B ALEP	$e^+e^- \rightarrow D^0 K^+ X$

¹ From a fit of the D_s^+ recoil mass distribution.

² Not independent of the mass difference below.

³ Calculated using $m_{D^0} = 1864.5 \pm 0.5$ MeV and the mass difference below.



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

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

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

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 $e^+ e^- \rightarrow D_s^+ \bar{D}^0 K^-$
16.9 ±0.5 ±0.6		AAIJ	14AW LHCb	$B_s^0 \rightarrow \bar{D}^0 K^- \pi^+$
12.1 ±4.5 ±1.6	82	AAIJ	11A LHCb	$B_s \rightarrow D_{s2}^*(2573) \mu \bar{\nu} X$
27.1 ±0.6 ±5.6		AUBERT, BE	06E BABR	$e^+ e^- \rightarrow D K X$
10.4 ±8.3 ±3.0		ALBRECHT	96 ARG	$e^+ e^- \rightarrow D^0 K^+ X$
16 $\begin{smallmatrix} +5 \\ -4 \end{smallmatrix}$ ±3	217	KUBOTA	94 CLE2	$e^+ e^- \sim 10.5$ GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
14 $\begin{smallmatrix} +9 \\ -6 \end{smallmatrix}$	25	² EVDOKIMOV 04	SELX	600 $\Sigma^- A \rightarrow D^0 K^+ X$
¹ From a fit of the D_s^+ recoil mass distribution.				
² Systematic errors not estimated.				

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

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

Mode	Fraction (Γ_i/Γ)
Γ_1 $D^0 K^+$	(37 ±6) %
Γ_2 $D^*(2007)^0 K^+$	not seen
Γ_3 $D^+ K_S^0$	seen
Γ_4 $D^{*+} K_S^0$	seen

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

$\Gamma(D^0 K^+)/\Gamma_{\text{total}}$	Γ_1/Γ				
VALUE (%)	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
37.4 ±3.1 ±4.6		¹ ABLIKIM	24BN BES3		$e^+ e^- \rightarrow D_s^+ D_{s2}^*(2573)^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
seen	217	KUBOTA	94 CLE2	±	$e^+ e^- \sim 10.5$ GeV
¹ Determined as ratio of exclusive $e^+ e^- \rightarrow D_s^+ [\bar{D}^0 K^-]$ and inclusive $e^+ e^- \rightarrow D_s^+ X$ measurements.					

$\Gamma(D^*(2007)^0 K^+)/\Gamma(D^0 K^+)$						Γ_2/Γ_1
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>CHG</u>	<u>COMMENT</u>	
<0.33	90	KUBOTA	94	CLE2	+	$e^+ e^- \sim 10.5$ GeV

$\Gamma(D^+ K_S^0)/\Gamma(D^0 K^+)$				Γ_3/Γ_1
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
$0.49 \pm 0.10 \pm 0.02$	GAO	23	BELL	$e^+ e^-$ at 10.52 GeV

$\Gamma(D^{*+} K_S^0)/\Gamma(D^+ K_S^0)$					Γ_4/Γ_3
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
$0.044 \pm 0.005 \pm 0.011$	2000	¹ AAIJ	16AW LHCB	$pp \rightarrow D^{*+} K_S^0 X$ at 7, 8 TeV	

¹ First observation of the $D_{s2}^*(2573)^+ \rightarrow D^{*+} K_S^0$ decay with a significance of 6.9 σ .

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

ABLIKIM	24BN	PRL 133 171903	M. Ablikim <i>et al.</i>	(BESIII Collab.)
GAO	23	PR D108 112015	B.S. Gao <i>et al.</i>	(BELLE Collab.)
ABLIKIM	19P	CP C43 031001	M. Ablikim <i>et al.</i>	(BESIII Collab.)
AAIJ	16AW	JHEP 1602 133	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	14AW	PRL 113 162001	R. Aaij <i>et al.</i>	(LHCb Collab.) JP
AAIJ	11A	PL B698 14	R. Aaij <i>et al.</i>	(LHCb Collab.)
AUBERT,BE	06E	PRL 97 222001	B. Aubert <i>et al.</i>	(BABAR Collab.)
EVDOKIMOV	04	PRL 93 242001	A.V. Evdokimov <i>et al.</i>	(SELEX Collab.)
HEISTER	02B	PL B526 34	A. Heister <i>et al.</i>	(ALEPH Collab.)
ALBRECHT	96	ZPHY C69 405	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
KUBOTA	94	PRL 72 1972	Y. Kubota <i>et al.</i>	(CLEO Collab.)