$D_{s3}^*(2860)^\pm$

$I(J^P) = 0(3^-)$

J^P consistent with 3^- from angular analysis of AAIJ 14AW. Observed by AUBERT,BE 06E and AUBERT 09AR in inclusive production of DK and D^*K in e^+e^- annihilation.

$D_{s3}^*(2860)^+$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
2860.5±2.6±6.5		[1] AAIJ		14AW LHCB	$B_s^0 \to \overline{D}^0 K^- \pi^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2867.1±4.3±1.9	3.1k	AAIJ		16AW LHCB	$pp \to D^{*+} K_S^0 X$ at 7, 8 TeV
2866.1±1.0±6.3	36k	[2,3] AAIJ		12AU LHCB	$pp \to (DK)^+ X$ at 7 TeV
2862 ± 2 $^{+5}_{-2}$	3122	[2,4] AUBERT		09AR BABR	$e^+e^- \to D^{(*)} K X$
2856.6±1.5±5.0		[5] AUBERT,BE		06E BABR	$e^+e^- \to DKX$

[1] Separated from the spin-1 component $D_{s1}^*(2860)^-$ by a fit of the helicity angle of the $\overline{D}^0 K^-$ system, with a statistical significance of the spin-3 and spin-1 components in excess of 10 σ.

[2] Possible contribution from the $D_{s1}^*(2860)$ state.

[3] From the combined fit of the $D^+ K_S^0$ and $D^0 K^+$ modes in the model including the $D_{s2}^*(2573)^+$, $D_{s1}^*(2700)^+$ and spin-0 $D_{sJ}^*(2860)^+$.

[4] From simultaneous fits to the two DK mass spectra and to the total D^*K mass spectrum.

[5] Superseded by AUBERT 09AR.

$D_{s3}^*(2860)^+$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
53 ± 7 ± 7		[1] AAIJ		14AW LHCB	$B_s^0 \to \overline{D}^0 K^- \pi^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
50 ±11 ±13	3.1k	AAIJ		16AW LHCB	$pp \to D^{*+} K_S^0 X$ at 7, 8 TeV
69.9± 3.2± 6.6	36k	[2,3] AAIJ		12AU LHCB	$pp \to (DK)^+ X$ at 7 TeV
48 ± 3 ± 6	3122	[2,4] AUBERT		09AR BABR	$e^+e^- \to D^{(*)} K X$
47 ± 7 ±10		[5] AUBERT,BE		06E BABR	$e^+e^- \to DKX$

[1] Separated from the spin-1 component $D_{s1}^*(2860)^-$ by a fit of the helicity angle of the $\overline{D}^0 K^-$ system, with a statistical significance of the spin-3 and spin-1 components in excess of 10 σ.

[2] Possible contribution from the $D_{s1}^*(2860)$ state.

[3] From the combined fit of the $D^+ K_S^0$ and $D^0 K^+$ modes in the model including the $D_{s2}^*(2573)^+$, $D_{s1}^*(2700)^+$ and spin-0 $D_{sJ}^*(2860)^+$.

[4] From simultaneous fits to the two DK mass spectra and to the total D^*K mass spectrum.

[5] Superseded by AUBERT 09AR.

$D_{s3}^*(2860)^\pm$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	DK	
Γ_2	$D^0 K^+$	seen
Γ_3	$D^+ K_S^0$	seen
Γ_4	$D^* K$	
Γ_5	$D^{*0} K^+$	seen
Γ_6	$D^{*+} K_S^0$	seen

$D_{s3}^*(2860)^\pm$ BRANCHING RATIOS

$\Gamma(D^* K)/\Gamma(D K)$ Γ_4/Γ_1

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
1.10±0.15±0.19	3122	[1] AUBERT 09AR	BABR	$e^+ e^- \to D^{(*)} K X$

[1] From the average of the corresponding ratios with $D^{(*)0} K^+$ and $D^{(*)+} K_S^0$.

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

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
1.04±0.17±0.20	2241	[1] AUBERT 09AR	BABR	$e^+ e^- \to D^{(*)} K X$

[1] From the $D^{*0} K^+$ and $D^0 K^+$, where $D^{*0} \to D^0 \pi^0$.

$\Gamma(D^{*+} K_S^0)/\Gamma(D^+ K_S^0)$ Γ_6/Γ_3

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
1.38±0.35±0.49	881	[1] AUBERT 09AR	BABR	$e^+ e^- \to D^{(*)} K X$

[1] From the $D^{*+} K_S^0$ and $D^+ K_S^0$, where $D^{*+} \to D^+ \pi^0$.

$D_{s3}^*(2860)^\pm$ REFERENCES

AAIJ	16AW	JHEP 1602 133	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	14AW	PRL 113 162001	R. Aaij *et al.*	(LHCb Collab.) JP
AAIJ	12AU	JHEP 1210 151	R. Aaij *et al.*	(LHCb Collab.)
AUBERT	09AR	PR D80 092003	B. Aubert *et al.*	(BABAR Collab.)
AUBERT,BE	06E	PRL 97 222001	B. Aubert *et al.*	(BABAR Collab.)