

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

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

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.

NODE=M226

NODE=M226

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

NODE=M226M

NODE=M226M

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

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

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⁵ Superseded by AUBERT 09AR.

NODE=M226M;LINKAGE=A

NODE=M226M;LINKAGE=D

NODE=M226M;LINKAGE=E

NODE=M226M;LINKAGE=C

NODE=M226M;LINKAGE=B

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

NODE=M226W

NODE=M226W

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

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

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⁵ Superseded by AUBERT 09AR.

NODE=M226W;LINKAGE=A

NODE=M226W;LINKAGE=D

NODE=M226W;LINKAGE=E

NODE=M226W;LINKAGE=C

NODE=M226W;LINKAGE=B

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

NODE=M226215;NODE=M226

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

DESIG=1

DESIG=2;OUR EVAL;→ UNCHECKED ←

DESIG=3;OUR EVAL;→ UNCHECKED ←

DESIG=4

DESIG=5;OUR EVAL;→ UNCHECKED ←

DESIG=6;OUR EVAL;→ UNCHECKED ←

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

$\Gamma(D^*K)/\Gamma(DK)$					Γ_4/Γ_1
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
$1.10 \pm 0.15 \pm 0.19$	3122	¹ AUBERT	09AR BABR	$e^+e^- \rightarrow D^{(*)}KX$	
¹ From the average of the corresponding ratios with $D^{(*)0}K^+$ and $D^{(*)+}K_S^0$.					

NODE=M226225

NODE=M226R01
NODE=M226R01

NODE=M226R01;LINKAGE=AU

$\Gamma(D^{*0}K^+)/\Gamma(D^0K^+)$					Γ_5/Γ_2
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
$1.04 \pm 0.17 \pm 0.20$	2241	¹ AUBERT	09AR BABR	$e^+e^- \rightarrow D^{(*)}KX$	
¹ From the $D^{*0}K^+$ and D^0K^+ , where $D^{*0} \rightarrow D^0\pi^0$.					

NODE=M226R02
NODE=M226R02

NODE=M226R02;LINKAGE=AU

$\Gamma(D^{*+}K_S^0)/\Gamma(D^+K_S^0)$					Γ_6/Γ_3
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
$1.38 \pm 0.35 \pm 0.49$	881	¹ AUBERT	09AR BABR	$e^+e^- \rightarrow D^{(*)}KX$	
¹ From the $D^{*+}K_S^0$ and $D^+K_S^0$, where $D^{*+} \rightarrow D^+\pi^0$.					

NODE=M226R03
NODE=M226R03

NODE=M226R03;LINKAGE=AU

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

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	12AU JHEP 1210 151	R. Aaij <i>et al.</i>	(LHCb Collab.)
AUBERT	09AR PR D80 092003	B. Aubert <i>et al.</i>	(BABAR Collab.)
AUBERT,BE	06E PRL 97 222001	B. Aubert <i>et al.</i>	(BABAR Collab.)

NODE=M226

REFID=60464
REFID=56105
REFID=54735
REFID=53135
REFID=51512