

$D_{s1}^*(2860)^\pm$

$I(J^P) = 0(1^-)$

OMITTED FROM SUMMARY TABLE

J^P consistent with 1^- 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.

 $D_{s1}^*(2860)^+$ MASS

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|------|-------------------------|-----------|---|
| 2859 ±12 ±24 | | 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. • • • | | | | |
| 2866.1 ± 1.0 ± 6.3 | 36k | ^{2,3} AAIJ | 12AU LHCB | $pp \rightarrow (DK)^+ X$ at 7 TeV |
| 2862 ± 2 ± $\frac{5}{2}$ | 3122 | ^{3,4} 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-3 component $D_{s3}^*(2860)^-$ 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 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 $D_{sJ}^*(2860)^+$.

³ Possible contribution from the $D_{s3}^*(2860)$ state.

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

⁵ Superseded by AUBERT 09AR.

 $D_{s1}^*(2860)^+$ WIDTH

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|------|-------------------------|-----------|---|
| 159 ±23 ±77 | | 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. • • • | | | | |
| 69.9 ± 3.2 ± 6.6 | 36k | ^{2,3} AAIJ | 12AU LHCB | $pp \rightarrow (DK)^+ X$ at 7 TeV |
| 48 ± 3 ± 6 | 3122 | ^{3,4} 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-3 component $D_{s3}^*(2860)^-$ 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 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 $D_{sJ}^*(2860)^+$.

³ Possible contribution from the $D_{s3}^*(2860)$ state.

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

⁵ Superseded by AUBERT 09AR.

$D_{s1}^*(2860)^\pm$ DECAY MODES

| Mode | |
|------------|----------------|
| Γ_1 | DK |
| Γ_2 | $D^0 K^+$ |
| Γ_3 | $D^+ K_S^0$ |
| Γ_4 | $D^* K$ |
| Γ_5 | $D^{*0} K^+$ |
| Γ_6 | $D^{*+} K_S^0$ |

 $D_{s1}^*(2860)^\pm$ 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 | $e^+ e^- \rightarrow D^{(*)} K X$ |
|--|------|---------------------|-----------|-----------------------------------|

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 |
|-------|------|-------------|------|---------|
|-------|------|-------------|------|---------|

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

| | | | | |
|--------------------------|------|---------------------|-----------|-----------------------------------|
| $1.04 \pm 0.17 \pm 0.20$ | 2241 | ¹ AUBERT | 09AR BABR | $e^+ e^- \rightarrow D^{(*)} K X$ |
|--------------------------|------|---------------------|-----------|-----------------------------------|

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

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

| VALUE | EVTS | DOCUMENT ID | TECN | COMMENT |
|-------|------|-------------|------|---------|
|-------|------|-------------|------|---------|

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

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|--------------------------|-----|---------------------|-----------|-----------------------------------|
| $1.38 \pm 0.35 \pm 0.49$ | 881 | ¹ AUBERT | 09AR BABR | $e^+ e^- \rightarrow D^{(*)} K X$ |
|--------------------------|-----|---------------------|-----------|-----------------------------------|

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

 $D_{s1}^*(2860)^\pm$ REFERENCES

| | | | |
|-----------|---------------------|-------------------------|-------------------|
| 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.) |