

$D_{s0}^*(2317)^\pm$  $I(J^P) = 0(0^+)^\pm$   
 $J, P$  need confirmation.AUBERT 06P does not observe neutral and doubly charged partners of the  $D_{s0}^*(2317)^\pm$ . **$D_{s0}^*(2317)^\pm$  MASS**The fit includes  $D^\pm, D^0, D_s^\pm, D^{*\pm}, D^{*0}, D_s^{*\pm}, D_1(2420)^0, D_2^*(2460)^0$ , and  $D_{s1}(2536)^\pm$  mass and mass difference measurements.

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>2317.8±0.6 OUR FIT</b>	Error includes scale factor of 1.1.			
<b>2318.0±1.0 OUR AVERAGE</b>	Error includes scale factor of 1.4.			
2319.6±0.2±1.4	3180	AUBERT	06P BABR	10.6 $e^+e^- \rightarrow D_s^+ \pi^0 X$
2317.3±0.4±0.8	1022	<sup>1</sup> AUBERT	04E BABR	10.6 $e^+e^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
2317.2±1.3	88	<sup>2</sup> AUBERT,B	04S BABR	$B \rightarrow D_{s0}^{(*)}(2317)^+ \bar{D}^{(*)}$
2317.2±0.5±0.9	761	<sup>3</sup> MIKAMI	04 BELL	10.6 $e^+e^-$
2316.8±0.4±3.0	1267 ± 53	<sup>3,4</sup> AUBERT	03G BABR	10.6 $e^+e^-$
2317.6±1.3	273 ± 33	<sup>3,5</sup> AUBERT	03G BABR	10.6 $e^+e^-$
2319.8±2.1±2.0	24	<sup>3</sup> KROKOVNY	03B BELL	10.6 $e^+e^-$

<sup>1</sup> Supersedes AUBERT 03G.<sup>2</sup> Systematic errors not evaluated.<sup>3</sup> Not independent of the corresponding  $m_{D_{s0}^*(2317)} - m_{D_s}$ .<sup>4</sup> From  $D_s^+ \rightarrow K^+ K^- \pi^+$  decay.<sup>5</sup> From  $D_s^+ \rightarrow K^+ K^- \pi^+ \pi^0$  decay. **$m_{D_{s0}^*(2317)^\pm} - m_{D_s^\pm}$** The fit includes  $D^\pm, D^0, D_s^\pm, D^{*\pm}, D^{*0}, D_s^{*\pm}, D_1(2420)^0, D_2^*(2460)^0$ , and  $D_{s1}(2536)^\pm$  mass and mass difference measurements.

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>349.3±0.6 OUR FIT</b>	Error includes scale factor of 1.1.			
<b>349.2±0.7 OUR AVERAGE</b>				
348.7±0.5±0.7	761	MIKAMI	04 BELL	10.6 $e^+e^-$
350.0±1.2±1.0	135	BESSON	03 CLE2	10.6 $e^+e^-$
351.3±2.1±1.9	24	<sup>6</sup> KROKOVNY	03B BELL	10.6 $e^+e^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
349.6±0.4±3.0	1267	<sup>7,8</sup> AUBERT	03G BABR	10.6 $e^+e^-$
350.2±1.3	273	<sup>9,10</sup> AUBERT	03G BABR	10.6 $e^+e^-$

<sup>6</sup> Recalculated by us using  $m_{D_s^+} = 1968.5 \pm 0.6$  MeV.

<sup>7</sup> From  $D_s^+ \rightarrow K^+ K^- \pi^+$  decay.

<sup>8</sup> Recalculated by us using  $m_{D_s^+} = 1967.20 \pm 0.03$  MeV.

<sup>9</sup> From  $D_s^+ \rightarrow K^+ K^- \pi^+ \pi^0$  decay.

<sup>10</sup> Recalculated by us using  $m_{D_s^+} = 1967.4 \pm 0.2$  MeV. Systematic errors not estimated.

### $D_{s0}^*(2317)^\pm$ WIDTH

VALUE (MeV)	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
<b>&lt; 3.8</b>	95	3180	AUBERT	06P BABR	$10.6 e^+ e^- \rightarrow D_s^+ \pi^0 X$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
< 4.6	90	761	MIKAMI	04 BELL	$10.6 e^+ e^-$
<10			AUBERT	03G BABR	$10.6 e^+ e^-$
< 7	90	135	BESSON	03 CLE2	$10.6 e^+ e^-$

### $D_{s0}^*(2317)^\pm$ DECAY MODES

$D_{s0}^*(2317)^-$  modes are charge conjugates of modes below.

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $D_s^+ \pi^0$	seen
$\Gamma_2$ $D_s^+ \gamma$	
$\Gamma_3$ $D_s^*(2112)^+ \gamma$	
$\Gamma_4$ $D_s^+ \gamma \gamma$	
$\Gamma_5$ $D_s^*(2112)^+ \pi^0$	
$\Gamma_6$ $D_s^+ \pi^+ \pi^-$	
$\Gamma_7$ $D_s^+ \pi^0 \pi^0$	not seen

### $D_{s0}^*(2317)^\pm$ BRANCHING RATIOS

$\Gamma(D_s^+ \pi^0)/\Gamma_{\text{total}}$	$\Gamma_1/\Gamma$			
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
<b>seen</b>	$1540 \pm 62$	AUBERT	03G BABR	$10.6 e^+ e^-$

$\Gamma(D_s^+ \gamma)/\Gamma(D_s^+ \pi^0)$	$\Gamma_2/\Gamma_1$			
VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<b>&lt;0.05</b>	90	MIKAMI	04 BELL	$10.6 e^+ e^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<0.14	95	AUBERT	06P BABR	$10.6 e^+ e^-$
<0.052	90	BESSON	03 CLE2	$10.6 e^+ e^-$

$\Gamma(D_s^*(2112)^+ \gamma) / \Gamma(D_s^+ \pi^0)$   $\Gamma_3 / \Gamma_1$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;0.059</b>	90	BESSION	03	CLE2 10.6 $e^+ e^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<0.16	95	AUBERT	06P	BABR 10.6 $e^+ e^-$
<0.18	90	MIKAMI	04	BELL 10.6 $e^+ e^-$

$\Gamma(D_s^+ \gamma \gamma) / \Gamma(D_s^+ \pi^0)$   $\Gamma_4 / \Gamma_1$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;0.18</b>	95	AUBERT	06P	BABR 10.6 $e^+ e^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
not seen		AUBERT	03G	BABR 10.6 $e^+ e^-$

$\Gamma(D_s^*(2112)^+ \pi^0) / \Gamma(D_s^+ \pi^0)$   $\Gamma_5 / \Gamma_1$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;0.11</b>	90	BESSION	03	CLE2 10.6 $e^+ e^-$

$\Gamma(D_s^+ \pi^+ \pi^-) / \Gamma(D_s^+ \pi^0)$   $\Gamma_6 / \Gamma_1$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;0.004</b>	90	MIKAMI	04	BELL 10.6 $e^+ e^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<0.005	95	AUBERT	06P	BABR 10.6 $e^+ e^-$
<0.019	90	BESSION	03	CLE2 10.6 $e^+ e^-$

$\Gamma(D_s^+ \pi^0 \pi^0) / \Gamma(D_s^+ \pi^0)$   $\Gamma_7 / \Gamma_1$

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>&lt;0.25</b>	95	AUBERT	06P	BABR 10.6 $e^+ e^-$

**$D_{s0}^*(2317)^\pm$  REFERENCES**

AUBERT	06P	PR D74 032007	B. Aubert <i>et al.</i>	(BABAR Collab.)
AUBERT	04E	PR D69 031101R	B. Aubert <i>et al.</i>	(BABAR Collab.)
AUBERT,B	04S	PRL 93 181801	B. Aubert <i>et al.</i>	(BABAR Collab.)
MIKAMI	04	PRL 92 012002	Y. Mikami <i>et al.</i>	(BELLE Collab.)
AUBERT	03G	PRL 90 242001	B. Aubert <i>et al.</i>	(BaBar Collab.)
BESSION	03	PR D68 032002	D. Besson <i>et al.</i>	(CLEO Collab.)
KROKOVNY	03B	PRL 91 262002	P. Krokovny <i>et al.</i>	(BELLE Collab.)