

**$B_{s2}^*(5840)^0$**

$I(J^P) = 0(2^+)$  Status: \*\*\*  
 $I, J, P$  need confirmation.

Quantum numbers shown are quark-model predictions.

### $B_{s2}^*(5840)^0$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>5839.96 ± 0.20 OUR AVERAGE</b>			
5839.99 ± 0.05 ± 0.20	AAIJ	130	LHCB $pp$ at 7 TeV
5839.7 ± 0.7	<sup>1</sup> AALTONEN	08K	CDF $p\bar{p}$ at 1.96 TeV
5839.6 ± 1.1 ± 0.7	<sup>2</sup> ABAZOV	08E	D0 $p\bar{p}$ at 1.96 TeV

<sup>1</sup> Uses two-body decays into  $K^-$  and  $B^+$  mesons reconstructed as  $B^+ \rightarrow J/\psi K^+$ ,  $J/\psi \rightarrow \mu^+ \mu^-$  or  $B^+ \rightarrow \bar{D}^0 \pi^+$ ,  $\bar{D}^0 \rightarrow K^+ \pi^-$ .

<sup>2</sup> Observed in  $B_{s2}^{*0} \rightarrow B^+ K^-$ . Measured production rate of  $B_{s2}^{*0}$  relative to  $B^+$  to be  $(1.15 \pm 0.23 \pm 0.13)\%$ .

$$m_{B_{s2}^{*0}} - m_{B_{s1}^0}$$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>10.5 ± 0.6</b>	<sup>3</sup> AALTONEN	08K	CDF $p\bar{p}$ at 1.96 TeV

<sup>3</sup> Uses two-body decays into  $K^-$  and  $B^+$  mesons reconstructed as  $B^+ \rightarrow J/\psi K^+$ ,  $J/\psi \rightarrow \mu^+ \mu^-$  or  $B^+ \rightarrow \bar{D}^0 \pi^+$ ,  $\bar{D}^0 \rightarrow K^+ \pi^-$ .

### $B_{s2}^*(5840)^0$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>1.56 ± 0.13 ± 0.47</b>	<sup>4</sup> AAIJ	130	LHCB $pp$ at 7 TeV

<sup>4</sup> Uses  $B_{s2}^*(5840)^0 \rightarrow B^{*+} K^-$  decays.

### $B_{s2}^*(5840)^0$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $B^+ K^-$	dominant
$\Gamma_2$ $B^{*+} K^-$	

### $B_{s2}^*(5840)^0$ BRANCHING RATIOS

$\Gamma(B^+ K^-)/\Gamma_{\text{total}}$	$\Gamma_1/\Gamma$
<b>dominant</b>	
<b>dominant</b>	

VALUE	DOCUMENT ID	TECN	COMMENT
	AALTONEN	08K	CDF $p\bar{p}$ at 1.96 TeV
	<sup>5</sup> ABAZOV	08E	D0 $p\bar{p}$ at 1.96 TeV

<sup>5</sup> Measured production rate of  $B_{s2}^{*0}$  relative to  $B^+$  to be  $(1.15 \pm 0.23 \pm 0.13)\%$ .

$\Gamma(B^{*+} K^-)/\Gamma(B^+ K^-)$

$\Gamma_2/\Gamma_1$

<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<b>0.093±0.013±0.012</b>	AAIJ	130 LHCB	<i>pp</i> at 7 TeV

**$B_{s2}^*(5840)^0$  REFERENCES**

AAIJ	130	PRL 110 151803	R. Aaij <i>et al.</i>	(LHCb Collab.)
AALTONEN	08K	PRL 100 082001	T. Aaltonen <i>et al.</i>	(CDF Collab.)
ABAZOV	08E	PRL 100 082002	V.M. Abazov <i>et al.</i>	(D0 Collab.)