$B^*_{s2}(5840)^0$

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

Quantum numbers shown are quark-model predictions.

$B^*_{s2}(5840)^0$ MASS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
5839.85±0.17 OUR FIT Error includes scale factor of 1.1.				
5839.98±0.20 OUR AVERAGE				
5839.99±0.05±0.20	AAIJ	13O	LHCB	pp at 7 TeV
5839.6 ±1.1 ±0.7	[1] ABAZOV	08E	D0	$p\overline{p}$ at 1.96 TeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
5839.7 ±0.7	[2] AALTONEN	08K	CDF	Repl. by AALTONEN 14I

[1] Observed in $B^{*0}_{s2} \to B^+ K^-$. Measured production rate of B^{*0}_{s2} relative to B^+ to be $(1.15 \pm 0.23 \pm 0.13)\%$.

[2] Uses two-body decays into K^- and B^+ mesons reconstructed as $B^+ \to J/\psi K^+$, $J/\psi \to \mu^+\mu^-$ or $B^+ \to \overline{D}^0\pi^+$, $\overline{D}^0 \to K^+\pi^-$.

$m_{B^{*0}_{s2}} - m_{B^0_{s1}}$

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
• • • We do not use the following data for averages, fits, limits, etc. • • •				
10.5±0.6	[3] AALTONEN	08K	CDF	Repl. by AALTONEN 14I

[3] Uses two-body decays into K^- and B^+ mesons reconstructed as $B^+ \to J/\psi K^+$, $J/\psi \to \mu^+\mu^-$ or $B^+ \to \overline{D}^0\pi^+$, $\overline{D}^0 \to K^+\pi^-$.

$m_{B^{*0}_{s2}} - m_{B^+}$

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
560.53±0.17 OUR FIT Error includes scale factor of 1.1.				
560.41±0.13±0.14	[4] AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

[4] AALTONEN 14I reports $m_{B_{s2}(5840)^0} - m_{B^+} - m_{K^-} = 66.73 \pm 0.13 \pm 0.14$ MeV which we adjusted by the K^- mass.

$B^*_{s2}(5840)^0$ WIDTH

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
1.47±0.33 OUR AVERAGE				
1.4 ±0.4 ±0.2	AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV
1.56±0.13±0.47	[5] AAIJ	13O	LHCB	pp at 7 TeV

[5] Uses $B^*_{s2}(5840)^0 \to B^{*+} K^-$ decays.

$B^*_{s2}(5840)^0$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$B^+ K^-$	dominant
Γ_2	$B^{*+} K^-$	

$B^*_{s2}(5840)^0$ BRANCHING RATIOS

$\Gamma(B^+ K^-)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
dominant	AALTONEN	08K	CDF	$p\overline{p}$ at 1.96 TeV
dominant	[6] ABAZOV	08E	D0	$p\overline{p}$ at 1.96 TeV

[6] Measured production rate of B^{*0}_{s2} relative to B^+ to be $(1.15 \pm 0.23 \pm 0.13)\%$.

$\Gamma(B^{*+} K^-)/\Gamma(B^+ K^-)$ Γ_2/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
0.093±0.013±0.012	AAIJ	13O	LHCB	pp at 7 TeV

$B^*_{s2}(5840)^0$ REFERENCES

AALTONEN	14I	PR D90 012013	T. Aaltonen *et al.*	(CDF Collab.)
AAIJ	13O	PRL 110 151803	R. Aaij *et al.*	(LHCb Collab.)
AALTONEN	08K	PRL 100 082001	T. Aaltonen *et al.*	(CDF Collab.)
ABAZOV	08E	PRL 100 082002	V.M. Abazov *et al.*	(D0 Collab.)