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

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

Quantum numbers shown are quark-model predictions.

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

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
5839.86±0.12 OUR FIT				
5839.92±0.14 OUR AVERAGE				
5839.86±0.09±0.17	SIRUNYAN	18DF	CMS	pp at 8 TeV
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	[1] AALTONEN	08K	CDF	Repl. by AALTONEN 14I

[1] 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*
560.52±0.14 OUR FIT				
560.41±0.13±0.14	[1] AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV

[1] 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*
1.49±0.27 OUR AVERAGE				
1.52±0.34±0.30	SIRUNYAN	18DF	CMS	pp at 8 TeV
1.4 ±0.4 ±0.2	AALTONEN	14I	CDF	$p\overline{p}$ at 1.96 TeV
1.56±0.13±0.47	[1] AAIJ	13O	LHCB	pp at 7 TeV

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

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

Branching fractions are given relative to the one **DEFINED AS 1**.

	Mode	Fraction (Γ_i/Γ)
Γ_1	$B^+ K^-$	**DEFINED AS 1**
Γ_2	$B^{*+} K^-$	0.093 ± 0.018
Γ_3	$B^0 K^0_S$	0.43 ± 0.11
Γ_4	$B^{*0} K^0_S$	0.04 ± 0.04

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

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

VALUE	DOCUMENT ID		TECN	COMMENT
seen	AALTONEN	08K	CDF	$p\overline{p}$ at 1.96 TeV
seen	[1] ABAZOV	08E	D0	$p\overline{p}$ at 1.96 TeV

[1] 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
$0.093 \pm 0.013 \pm 0.012$	AAIJ	13O	LHCB	pp at 7 TeV

$\Gamma(B^{*0} K^0_S)/\Gamma(B^0 K^0_S)$ Γ_4/Γ_3

VALUE	DOCUMENT ID		TECN	COMMENT
$0.093 \pm 0.086 \pm 0.014$	[1] SIRUNYAN	18DF	CMS	pp at 8 TeV

[1] With the branching fraction $B(B^0 \to J/\psi K^{*0}) = (1.28 \pm 0.05) \times 10^{-3}$.

$\Gamma(B^0 K^0_S)/\Gamma(B^+ K^-)$ Γ_3/Γ_1

VALUE	DOCUMENT ID		TECN	COMMENT
$0.432 \pm 0.077 \pm 0.078$	[1] SIRUNYAN	18DF	CMS	pp at 8 TeV

[1] With the branching fractions $B(B^+ \to J/\psi K^+) = (1.026 \pm 0.031) \times 10^{-3}$ and $B(B^0 \to J/\psi K^{*0}) = (1.28 \pm 0.05) \times 10^{-3}$.

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

VALUE	DOCUMENT ID		TECN	COMMENT
$0.081 \pm 0.021 \pm 0.015$	[1] SIRUNYAN	18DF	CMS	pp at 8 TeV

[1] With the branching fraction $B(B^+ \to J/\psi K^+) = (1.026 \pm 0.031) \times 10^{-3}$.

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

SIRUNYAN	18DF	EPJ C78 939	A.M. Sirunyan *et al.*	(CMS Collab.)
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.)