

$B_{s1}(5830)^0$

$I(J^P) = 0(1^+)$
 I, J, P need confirmation.

Quantum numbers shown are quark-model predictions.

$B_{s1}(5830)^0$ MASS

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------------|----------|-----------------------|
| 5828.73±0.20 OUR FIT | | | |
| 5828.65±0.24 OUR AVERAGE | | | |
| 5828.78±0.09±0.29 | SIRUNYAN | 18DF CMS | $p\bar{p}$ at 8 TeV |
| 5828.40±0.04±0.41 | ¹ AAIJ | 130 LHCb | $p\bar{p}$ at 7 TeV |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 5829.4 ±0.7 | ² AALTONEN | 08k CDF | Repl. by AALTONEN 14l |
| ¹ Uses $B_{s1}(5830)^0 \rightarrow B^{*+} K^-$ decay. | | | |
| ² Uses two-body decays into K^- and B^+ mesons reconstructed as $B^+ \rightarrow J/\psi K^+$, $J/\psi \rightarrow \mu^+ \mu^-$ or $B^+ \rightarrow \bar{D}^0 \pi^+$, $\bar{D}^0 \rightarrow K^+ \pi^-$. | | | |

$m_{B_{s1}^0} - m_{B^{*+}}$

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------------|---------|------------------------|
| 503.98±0.17 OUR FIT | | | |
| 504.03±0.12±0.15 | ¹ AALTONEN | 14l CDF | $p\bar{p}$ at 1.96 TeV |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | |
| 504.41±0.21±0.14 | ² AALTONEN | 08k CDF | Repl. by AALTONEN 14l |
| ¹ AALTONEN 14l reports $m_{B_{s1}(5830)^0} - m_{B^{*+}} - m_{K^-} = 10.35 \pm 0.12 \pm 0.15$ MeV which we adjusted by the K^- mass. | | | |
| ² Uses two-body decays into K^- and B^+ mesons reconstructed as $B^+ \rightarrow J/\psi K^+$, $J/\psi \rightarrow \mu^+ \mu^-$ or $B^+ \rightarrow \bar{D}^0 \pi^+$, $\bar{D}^0 \rightarrow K^+ \pi^-$. | | | |

$B_{s1}(5830)^0$ WIDTH

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|--------------------|-------------|---------|------------------------|
| 0.5±0.3±0.3 | AALTONEN | 14l CDF | $p\bar{p}$ at 1.96 TeV |

$B_{s1}(5830)^0$ DECAY MODES

| Mode | Fraction (Γ_i/Γ) |
|-------------------------------|--------------------------------|
| $\Gamma_1 \quad B^{*+} K^-$ | seen |
| $\Gamma_2 \quad B^{*0} K_S^0$ | |

$B_{s1}(5830)^0$ BRANCHING RATIOS

| $\Gamma(B^{*+} K^-)/\Gamma_{\text{total}}$ | | | | Γ_1/Γ |
|--|--------------------|-------------|----------------|------------------------|
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | |
| seen | AALTONEN | 08k | CDF | $p\bar{p}$ at 1.96 TeV |

| $\Gamma(B^{*0} K_S^0)/\Gamma(B^{*+} K^-)$ | Γ_2/Γ_1 | | |
|--|-----------------------|----------|---------------|
| VALUE | DOCUMENT ID | TECN | COMMENT |
| $0.49 \pm 0.12 \pm 0.07$ | ¹ SIRUNYAN | 18DF CMS | pp at 8 TeV |

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

$B_{s1}(5830)^0$ REFERENCES

| | | | |
|----------|--------------------|-----------------------------|----------------|
| SIRUNYAN | 18DF EPJ C78 939 | A.M. Sirunyan <i>et al.</i> | (CMS Collab.) |
| AALTONEN | 14I PR D90 012013 | T. Aaltonen <i>et al.</i> | (CDF Collab.) |
| AAIJ | 13O PRL 110 151803 | R. Aaij <i>et al.</i> | (LHCb Collab.) |
| AALTONEN | 08K PRL 100 082001 | T. Aaltonen <i>et al.</i> | (CDF Collab.) |