



$I(J^P) = 1(\frac{1}{2}^+)$ Status: ***
 I, J, P need confirmation.

In the quark model $\Sigma_b^+, \Sigma_b^0, \Sigma_b^-$ are an isotriplet (uub, udb, ddb) state. The lowest Σ_b ought to have $J^P = 1/2^+$. None of $I, J,$ or P have actually been measured.

Σ_b MASS

Σ_b^+ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
5807.8 ± 2.7 OUR FIT			
5807.8^{+2.0}_{-2.2} ± 1.7	¹ AALTONEN	07K	CDF $p\bar{p}$ at 1.96 TeV

Σ_b^- MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
5815.2 ± 2.0 OUR FIT			
5815.2 ± 1.0 ± 1.7	¹ AALTONEN	07K	CDF $p\bar{p}$ at 1.96 TeV

¹ Observed four $\Lambda_b^0 \pi^\pm$ resonances in the fully reconstructed decay mode $\Lambda_b^0 \rightarrow \Lambda_c^+ \pi^-$, where $\Lambda_c^+ \rightarrow p K^- \pi^+$.

Σ_b DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \Lambda_b^0 \pi$	dominant

Σ_b BRANCHING RATIOS

$\Gamma(\Lambda_b^0 \pi)/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	Γ_1/Γ
dominant	AALTONEN	07K	CDF $p\bar{p}$ at 1.96 TeV	

Σ_b REFERENCES

AALTONEN 07K PRL 99 202001 T. Aaltonen *et al.* (CDF Collab.)