Σ_b

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

In the quark model Σ_b^+, Σ_b^0, Σ_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	$p\overline{p}$ 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	$p\overline{p}$ at 1.96 TeV

[1] Observed four $\Lambda_b^0\pi^\pm$ resonances in the fully reconstructed decay mode $\Lambda_b^0 \to \Lambda_c^+\pi^-$, where $\Lambda_c^+ \to pK^-\pi^+$.

Σ_b DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\Lambda_b^0\pi$	dominant

Σ_b BRANCHING RATIOS

$\Gamma(\Lambda_b^0\pi)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
dominant	AALTONEN	07K	CDF	$p\overline{p}$ at 1.96 TeV

Σ_b REFERENCES

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