

$\Sigma_c(2800)$ $I(J^P) = 1(?^?)$ Status: ***Seen in the $\Lambda_c^+ \pi^+$, $\Lambda_c^+ \pi^0$, and $\Lambda_c^+ \pi^-$ mass spectra. **$\Sigma_c(2800)$ MASSES**

The charged ++ and + masses are obtained from the mass-difference measurements that follow. The neutral mass is dominated by the mass-difference measurement, but is pulled up somewhat by the less well-determined but considerably higher direct-mass measurement. It is possible, in fact, that AUBERT 08BN is seeing a different Σ_c .

 $\Sigma_c(2800)^{++}$ MASS

VALUE (MeV)	DOCUMENT ID
-------------	-------------

2801⁺⁴₋₆ OUR FIT **$\Sigma_c(2800)^+$ MASS**

VALUE (MeV)	DOCUMENT ID
-------------	-------------

2792⁺¹⁴₋₅ OUR FIT **$\Sigma_c(2800)^0$ MASS**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
-------------	-------------	------	---------

2806⁺⁵₋₇ OUR FIT Error includes scale factor of 1.3.2846 \pm 8 \pm 10 AUBERT 08BN BABR $B^- \rightarrow \bar{p} \Lambda_c^+ \pi^-$ **$\Sigma_c(2800)$ MASS DIFFERENCES** **$m_{\Sigma_c(2800)^{++}} - m_{\Lambda_c^+}$**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
-------------	------	-------------	------	---------

514⁺⁴₋₆ OUR FIT514.5^{+3.4+2.8}_{-3.1-4.9} 2810⁺¹⁰⁹⁰₋₇₇₅ MIZUK 05 BELL $e^+ e^- \approx \gamma(4S)$ **$m_{\Sigma_c(2800)^+} - m_{\Lambda_c^+}$**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
-------------	------	-------------	------	---------

505⁺¹⁴₋₅ OUR FIT505.4^{+5.8+12.4}_{-4.6-2.0} 1540⁺¹⁷⁵⁰₋₁₀₅₀ MIZUK 05 BELL $e^+ e^- \approx \gamma(4S)$ **$m_{\Sigma_c(2800)^0} - m_{\Lambda_c^+}$**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
-------------	------	-------------	------	---------

519⁺⁵₋₇ OUR FIT Error includes scale factor of 1.3.515.4^{+3.2+2.1}_{-3.1-6.0} 2240⁺¹³⁰⁰₋₇₄₀ MIZUK 05 BELL $e^+ e^- \approx \gamma(4S)$

$\Sigma_c(2800)$ WIDTHS $\Sigma_c(2800)^{++}$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
75^{+18+12}_{-13-11}	2810^{+1090}_{-775}	MIZUK	05	BELL $e^+e^- \approx \gamma(4S)$

 $\Sigma_c(2800)^+$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
62^{+37+52}_{-23-38}	1540^{+1750}_{-1050}	MIZUK	05	BELL $e^+e^- \approx \gamma(4S)$

 $\Sigma_c(2800)^0$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
72^{+22}_{-15} OUR AVERAGE				
$86^{+33}_{-22} \pm 12$		AUBERT	08BN BABR	$B^- \rightarrow \bar{p}\Lambda_c^+\pi^-$
61^{+18+22}_{-13-13}	2240^{+1300}_{-740}	MIZUK	05	BELL $e^+e^- \approx \gamma(4S)$

 $\Sigma_c(2800)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \Lambda_c^+\pi$	seen

 $\Sigma_c(2800)$ REFERENCES

AUBERT	08BN PR D78 112003	B. Aubert <i>et al.</i>	(BABAR Collab.)
MIZUK	05 PRL 94 122002	R. Mizuk <i>et al.</i>	(BELLE Collab.)