

$\Sigma_c(2520)$ 
 $I(J^P) = 1(?^?)$  Status: \*\*\*

Seen in the  $\Lambda_c^+ \pi^\pm$  mass spectrum. The natural assignment is that this is the  $J^P = 3/2^+$  excitation of the  $\Sigma_c(2455)$ , the charm counterpart of the  $\Sigma(1385)$ .

### $\Sigma_c(2520)$ MASSES

The masses are obtained from the mass-difference measurements that follow.

#### $\Sigma_c(2520)^{++}$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>2519.4 ± 1.5 OUR FIT</b>				

• • • We do not use the following data for averages, fits, limits, etc. • • •

2530 ± 5 ± 5	6	<sup>1</sup> AMMOSOV 93	HLBC	$\nu p \rightarrow \mu^- \Sigma_c(2530)^{++}$
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<sup>1</sup> AMMOSOV 93 sees a cluster of 6 events and estimates the background to be 1 event.

#### $\Sigma_c(2520)^0$ MASS

VALUE (MeV)	DOCUMENT ID
<b>2517.5 ± 1.4 OUR FIT</b>	

### $\Sigma_c(2520)$ MASS DIFFERENCES

#### $m_{\Sigma_c(2520)^{++}} - m_{\Lambda_c^+}$

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>234.5 ± 1.4 OUR FIT</b>				
<b>234.5 ± 1.1 ± 0.8</b>	677	BRANDENB...	97 CLE2	$e^+ e^- \approx \gamma(4S)$

#### $m_{\Sigma_c(2520)^0} - m_{\Lambda_c^+}$

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>232.6 ± 1.3 OUR FIT</b>				
<b>232.6 ± 1.0 ± 0.8</b>	504	BRANDENB...	97 CLE2	$e^+ e^- \approx \gamma(4S)$

#### $m_{\Sigma_c(2520)^{++}} - m_{\Sigma_c(2520)^0}$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>1.9 ± 1.9 OUR FIT</b>			

• • • We do not use the following data for averages, fits, limits, etc. • • •

1.9 ± 1.4 ± 1.0	<sup>2</sup> BRANDENB...	97 CLE2	$e^+ e^- \approx \gamma(4S)$
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<sup>2</sup> This BRANDENBURG 97 result is redundant with measurements in earlier entries.

### $\Sigma_c(2520)$ WIDTHS

#### $\Sigma_c(2520)^{++}$ WIDTH

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>17.9<sup>+3.8</sup><sub>-3.2</sub> ± 4.0</b>	677	BRANDENB...	97 CLE2	$e^+ e^- \approx \gamma(4S)$

**$\Sigma_c(2520)^0$  WIDTH**

<u>VALUE (MeV)</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
$13.0^{+3.7}_{-3.0} \pm 4.0$	504	BRANDENB... 97	CLE2	$e^+e^- \approx \gamma(4S)$

**$\Sigma_c(2520)$  REFERENCES**

BRANDENB... 97	PRL 78 2304	Brandenburg, Briere, Kim, Liu+	(CLEO Collab.)
AMMOSOV 93	JETPL 58 247	+Vasil'ev, Ivanilov, Ivanov+	(SERP)
	Translated from ZETFP 58 241.		