



$$I(J^P) = 0(\frac{1}{2}^+) \text{ Status: } ***$$

The quantum numbers have not been measured, but are simply assigned in accord with the quark model, in which the  $\Omega_c^0$  is the ssc ground state.

### $\Omega_c^0$ MASS

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b>2695.2 ± 1.7</b>		<b>OUR FIT</b>		Error includes scale factor of 1.3.
<b>2695.2<sup>+1.8</sup><sub>-1.6</sub></b>		<b>OUR AVERAGE</b>		Error includes scale factor of 1.3. See the ideogram below.
2693.6 ± 0.3 <sup>+1.8</sup> <sub>-1.5</sub>	725 ± 45	SOLOVIEVA	09 BELL	$\Omega^- \pi^+$ in $e^+ e^- \rightarrow \Upsilon(4S)$
2694.6 ± 2.6 ± 1.9	40	<sup>1</sup> CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV
2699.9 ± 1.5 ± 2.5	42	<sup>2</sup> FRABETTI	94H E687	$\gamma$ Be, $\bar{E}_\gamma = 221$ GeV
• • • We do not use the following data for averages, fits, limits, etc. • • •				
2705.9 ± 3.3 ± 2.0	10	<sup>3</sup> FRABETTI	93 E687	$\gamma$ Be, $\bar{E}_\gamma = 221$ GeV
2719.0 ± 7.0 ± 2.5	11	<sup>4</sup> ALBRECHT	92H ARG	$e^+ e^- \approx 10.6$ GeV
2740 ± 20	3	BIAGI	85B SPEC	$\Sigma^-$ Be 135 GeV/c

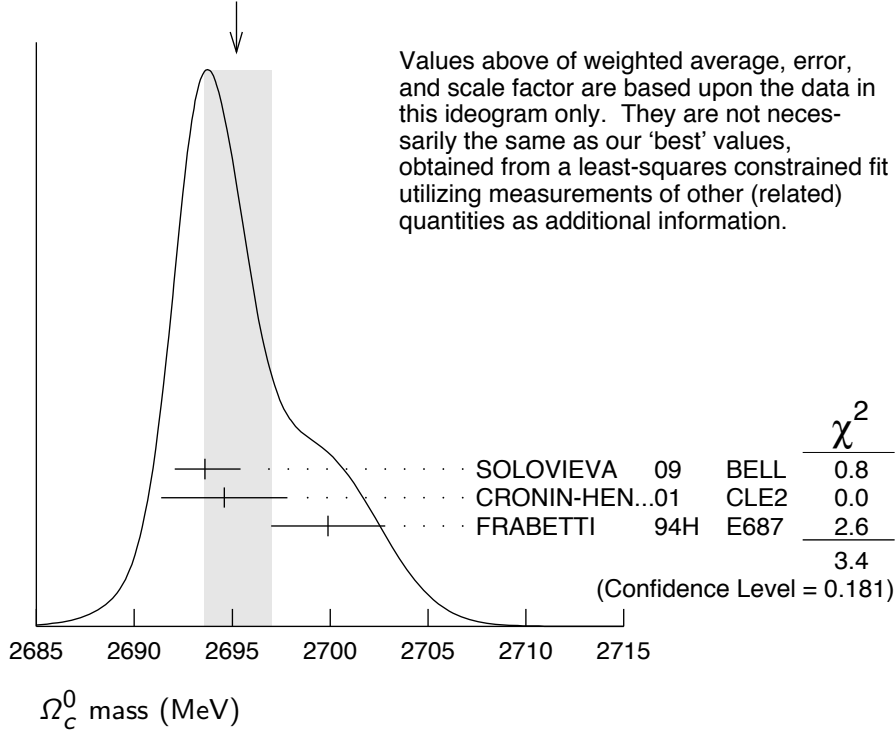
<sup>1</sup> CRONIN-HENNESSY 01 sees  $40.4 \pm 9.0$  events in a sum over five channels.

<sup>2</sup> FRABETTI 94H claims a signal of  $42.5 \pm 8.8 \Sigma^+ K^- K^- \pi^+$  events. The background is about 24 events.

<sup>3</sup> FRABETTI 93 claims a signal of  $10.3 \pm 3.9 \Omega^- \pi^+$  events above a background of 5.8 events.

<sup>4</sup> ALBRECHT 92H claims a signal of  $11.5 \pm 4.3 \Xi^- K^- \pi^+ \pi^+$  events. The background is about 5 events.

WEIGHTED AVERAGE  
2695.2+1.8-1.6 (Error scaled by 1.3)



### $\Omega_c^0$ MEAN LIFE

VALUE ( $10^{-15}$ s)	EVTS	DOCUMENT ID	TECN	COMMENT
<b><math>69 \pm 12</math> OUR AVERAGE</b>				
$72 \pm 11 \pm 11$	64	LINK	03C FOCS	$\Omega^- \pi^+, \Xi^- K^- \pi^+ \pi^+$
$55^{+13}_{-11} \pm 18$	86	ADAMOVICH	95B WA89	$\Omega^- \pi^- \pi^+ \pi^+, \Xi^- K^- \pi^+ \pi^+$
$86^{+27}_{-20} \pm 28$	25	FRABETTI	95D E687	$\Sigma^+ K^- K^- \pi^+$

### $\Omega_c^0$ DECAY MODES

No absolute branching fractions have been measured.

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $\Sigma^+ K^- K^- \pi^+$	seen
$\Gamma_2$ $\Xi^0 K^- \pi^+$	seen
$\Gamma_3$ $\Xi^- K^- \pi^+ \pi^+$	seen
$\Gamma_4$ $\Omega^- e^+ \nu_e$	seen
$\Gamma_5$ $\Omega^- \pi^+$	seen
$\Gamma_6$ $\Omega^- \pi^+ \pi^0$	seen
$\Gamma_7$ $\Omega^- \pi^- \pi^+ \pi^+$	seen

## $\Omega_c^0$ BRANCHING RATIOS

$\Gamma(\Sigma^+ K^- K^- \pi^+)/\Gamma_{\text{total}}$					$\Gamma_1/\Gamma$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
<b>seen</b>	42	FRABETTI	94H E687	$\gamma$ Be, $\bar{E}_\gamma = 221$ GeV	

$\Gamma(\Sigma^+ K^- K^- \pi^+)/\Gamma(\Omega^- \pi^+)$					$\Gamma_1/\Gamma_5$
<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	

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$<4.8$	90	CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV
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$\Gamma(\Xi^0 K^- \pi^+)/\Gamma(\Omega^- \pi^+)$					$\Gamma_2/\Gamma_5$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	

<b>4.0±2.5±0.4</b>	9	CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV
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$\Gamma(\Xi^- K^- \pi^+ \pi^+)/\Gamma_{\text{total}}$					$\Gamma_3/\Gamma$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	

<b>seen</b>	11	ALBRECHT	92H ARG	$e^+ e^- \approx 10.6$ GeV
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<b>seen</b>	3	BIAGI	85B SPEC	$\Sigma^-$ Be 135 GeV/c
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$\Gamma(\Xi^- K^- \pi^+ \pi^+)/\Gamma(\Omega^- \pi^+)$					$\Gamma_3/\Gamma_5$
<u>VALUE</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>

<b>0.46±0.13±0.03</b>	45 ± 12	AUBERT	07AH BABR	$e^+ e^- \approx \Upsilon(4S)$
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• • • We do not use the following data for averages, fits, limits, etc. • • •

$1.6 \pm 1.1 \pm 0.4$	7	CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV
$<2.8$	90	FRABETTI	93 E687	$\gamma$ Be, $\bar{E}_\gamma = 221$ GeV

$\Gamma(\Omega^- \pi^+)/\Gamma(\Omega^- e^+ \nu_e)$					$\Gamma_5/\Gamma_4$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	

<b>0.41±0.19±0.04</b>	11	AMMAR	02 CLE2	$e^+ e^- \approx \Upsilon(4S)$
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$\Gamma(\Omega^- \pi^+ \pi^0)/\Gamma(\Omega^- \pi^+)$					$\Gamma_6/\Gamma_5$
<u>VALUE</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	

<b>1.27±0.31±0.11</b>	64 ± 15	AUBERT	07AH BABR	$e^+ e^- \approx \Upsilon(4S)$
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• • • We do not use the following data for averages, fits, limits, etc. • • •

$4.2 \pm 2.2 \pm 0.9$	12	CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV
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$\Gamma(\Omega^- \pi^- \pi^+ \pi^+)/\Gamma(\Omega^- \pi^+)$					$\Gamma_7/\Gamma_5$
<u>VALUE</u>	<u>CL%</u>	<u>EVTS</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>

<b>0.28±0.09±0.01</b>	25 ± 8	AUBERT	07AH BABR	$e^+ e^- \approx \Upsilon(4S)$
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• • • We do not use the following data for averages, fits, limits, etc. • • •

$<0.56$	90	CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV
seen		ADAMOVICH	95B WA89	$\Sigma^-$ 340 GeV
$<1.6$	90	FRABETTI	93 E687	$\gamma$ Be, $\bar{E}_\gamma = 221$ GeV

## $\Omega_c^0$ REFERENCES

SOLOVIEVA	09	PL B672 1	E. Solovieva <i>et al.</i>	(BELLE Collab.)
AUBERT	07AH	PRL 99 062001	B. Aubert <i>et al.</i>	(BABAR Collab.)
LINK	03C	PL B561 41	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)
AMMAR	02	PRL 89 171803	R. Ammar <i>et al.</i>	(CLEO Collab.)
CRONIN-HEN...	01	PRL 86 3730	D. Cronin-Hennessy <i>et al.</i>	(CLEO Collab.)
ADAMOVICH	95B	PL B358 151	M.I. Adamovich <i>et al.</i>	(CERN WA89 Collab.)
FRABETTI	95D	PL B357 678	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)
FRABETTI	94H	PL B338 106	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)
FRABETTI	93	PL B300 190	P.L. Frabetti <i>et al.</i>	(FNAL E687 Collab.)
ALBRECHT	92H	PL B288 367	H. Albrecht <i>et al.</i>	(ARGUS Collab.)
BIAGI	85B	ZPHY C28 175	S.F. Biagi <i>et al.</i>	(CERN WA62 Collab.)

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