



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

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

Ω_c^0 MASS

VALUE (MeV) EVTS DOCUMENT ID TECN COMMENT
2695.2 ± 1.7 OUR FIT Error includes scale factor of 1.3.

2695.2^{+1.8}_{-1.6} OUR AVERAGE Error includes scale factor of 1.3. See the ideogram below.

2693.6 ± 0.3 ^{+1.8} _{-1.5}	725 ± 45	SOLOVIEVA 09 BELL	$\Omega^- \pi^+$ in $e^+ e^- \rightarrow \Upsilon(4S)$
2694.6 ± 2.6 ± 1.9	40	¹ CRONIN-HEN..01 CLE2	$e^+ e^- \approx 10.6$ GeV
2699.9 ± 1.5 ± 2.5	42	² FRABETTI 94H E687	γ Be, $\overline{E}_\gamma = 221$ GeV
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
2705.9 ± 3.3 ± 2.0	10	³ FRABETTI 93 E687	γ Be, $\overline{E}_\gamma = 221$ GeV
2719.0 ± 7.0 ± 2.5	11	⁴ ALBRECHT 92H ARG	$e^+ e^- \approx 10.6$ GeV
2740 ± 20	3	BIAGI 85B SPEC	Σ^- Be 135 GeV/c

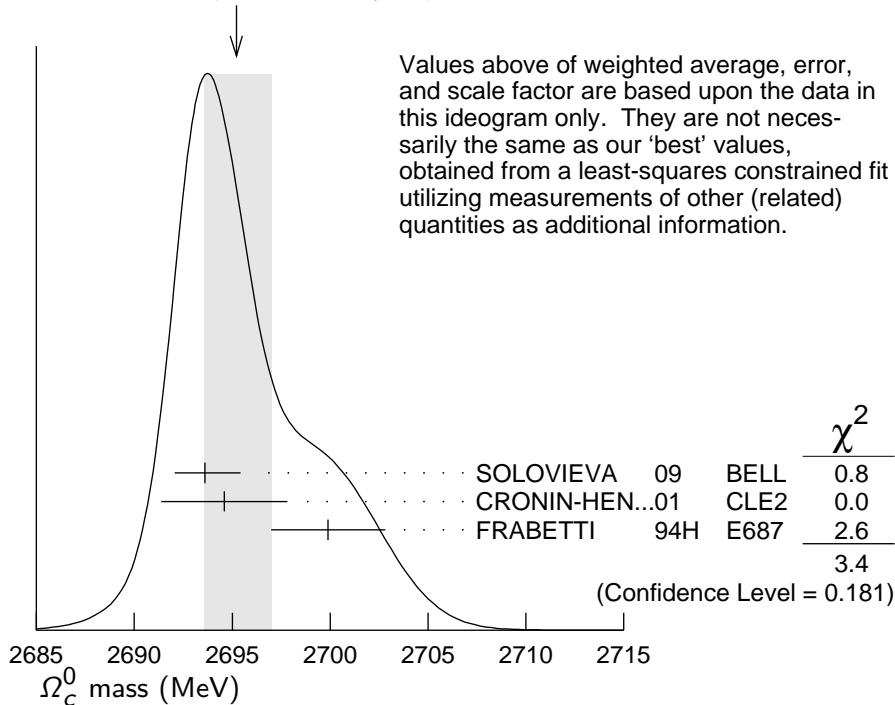
¹ CRONIN-HENNESSY 01 sees 40.4 ± 9.0 events in a sum over five channels.

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

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

⁴ 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)



Ω_c^0 MEAN LIFE

VALUE (10^{-15} s)	EVTS	DOCUMENT ID	TECN	COMMENT
69 ± 12	OUR AVERAGE			
$72 \pm 11 \pm 11$	64	LINK	03C FOCS	$\Omega^- \pi^+, \Xi^- K^- \pi^+ \pi^+$
55^{+13+18}_{-11-23}	86	ADAMOVICH	95B WA89	$\Omega^- \pi^- \pi^+ \pi^+, \Xi^- K^- \pi^+ \pi^+$
$86^{+27}_{-20} \pm 28$	25	FRABETTI	95D E687	$\Sigma^+ K^- K^- \pi^+$

Ω_c^0 DECAY MODES

No absolute branching fractions have been measured.

Mode	Fraction (Γ_j/Γ)
Γ_1 $\Sigma^+ K^- K^- \pi^+$	seen
Γ_2 $\Xi^0 K^- \pi^+$	seen
Γ_3 $\Xi^- K^- \pi^+ \pi^+$	seen
Γ_4 $\Omega^- e^+ \nu_e$	seen
Γ_5 $\Omega^- \pi^+$	seen
Γ_6 $\Omega^- \pi^+ \pi^0$	seen
Γ_7 $\Omega^- \pi^- \pi^+ \pi^+$	seen

Ω_c^0 BRANCHING RATIOS

$\Gamma(\Sigma^+ K^- K^- \pi^+)/\Gamma_{\text{total}}$					Γ_1/Γ
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
seen	42	FRABETTI	94H E687	γ Be, $\overline{E}_\gamma = 221$ GeV	

$\Gamma(\Sigma^+ K^- K^- \pi^+)/\Gamma(\Omega^- \pi^+)$					Γ_1/Γ_5
VALUE	CL%	DOCUMENT ID	TECN	COMMENT	
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●					
<4.8	90	CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV	

$\Gamma(\Xi^0 K^- \pi^+)/\Gamma(\Omega^- \pi^+)$					Γ_2/Γ_5
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
$4.0 \pm 2.5 \pm 0.4$	9	CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV	

$\Gamma(\Xi^- K^- \pi^+ \pi^+)/\Gamma_{\text{total}}$					Γ_3/Γ
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT	
seen	11	ALBRECHT	92H ARG	$e^+ e^- \approx 10.6$ GeV	
seen	3	BIAGI	85B SPEC	Σ^- Be 135 GeV/c	

$\Gamma(\Xi^- K^- \pi^+ \pi^+)/\Gamma(\Omega^- \pi^+)$						Γ_3/Γ_5
VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT	
$0.46 \pm 0.13 \pm 0.03$		45 ± 12	AUBERT	07AH BABR	$e^+ e^- \approx \Upsilon(4S)$	
● ● ● 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	γ Be, $\overline{E}_\gamma = 221$ GeV	

$\Gamma(\Omega^- \pi^+)/\Gamma(\Omega^- e^+ \nu_e)$ Γ_5/Γ_4

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
0.41±0.19±0.04	11	AMMAR	02 CLE2	$e^+ e^- \approx \Upsilon(4S)$

$\Gamma(\Omega^- \pi^+ \pi^0)/\Gamma(\Omega^- \pi^+)$ Γ_6/Γ_5

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
1.27±0.31±0.11	64 ± 15	AUBERT	07AH BABR	$e^+ e^- \approx \Upsilon(4S)$

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

4.2 ± 2.2 ± 0.9	12	CRONIN-HEN..01	CLE2	$e^+ e^- \approx 10.6$ GeV
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$\Gamma(\Omega^- \pi^- \pi^+ \pi^+)/\Gamma(\Omega^- \pi^+)$ Γ_7/Γ_5

VALUE	CL%	EVTS	DOCUMENT ID	TECN	COMMENT
0.28±0.09±0.01		25 ± 8	AUBERT	07AH BABR	$e^+ e^- \approx \Upsilon(4S)$

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

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

Ω_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.)