

Ω^- BARYONS
 $(S = -3, I = 0)$
 $\Omega^- = sss$

Ω^-

$$I(J^P) = 0(\frac{3}{2}^+)$$

$J^P = \frac{3}{2}^+$ is the quark-model prediction; and $J = 3/2$ is fairly well established.

Mass $m = 1672.45 \pm 0.29$ MeV
 $(m_{\Omega^-} - m_{\overline{\Omega}^+}) / m_{\Omega^-} = (-1 \pm 8) \times 10^{-5}$
Mean life $\tau = (0.821 \pm 0.011) \times 10^{-10}$ s
 $c\tau = 2.461$ cm
 $(\tau_{\Omega^-} - \tau_{\overline{\Omega}^+}) / \tau_{\Omega^-} = 0.00 \pm 0.05$
Magnetic moment $\mu = -2.02 \pm 0.05 \mu_N$

Decay parameters

$\alpha(\Omega^-) \alpha_-(\Lambda)$ FOR $\Omega^- \rightarrow \Lambda K^- = 0.0115 \pm 0.0015$
 $\Lambda K^- \quad \alpha = 0.0154 \pm 0.0020$
 $\Lambda K^-, \overline{\Lambda} K^+ \quad (\alpha + \overline{\alpha}) / (\alpha - \overline{\alpha}) = -0.02 \pm 0.13$
 $\Xi^0 \pi^- \quad \alpha = 0.09 \pm 0.14$
 $\Xi^- \pi^0 \quad \alpha = 0.05 \pm 0.21$

Ω^- DECAY MODES	Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
ΛK^-	$(67.7 \pm 0.7) \%$		211
$\Xi^0 \pi^-$	$(24.3 \pm 0.7) \%$	S=1.5	294
$\Xi^- \pi^0$	$(8.55 \pm 0.33) \%$		289
$\Xi^- \pi^+ \pi^-$	$(3.7^{+0.7}_{-0.6}) \times 10^{-4}$		189
$\Xi(1530)^0 \pi^-$	$< 7 \times 10^{-5}$	CL=90%	17
$\Xi^0 e^- \overline{\nu}_e$	$(5.6 \pm 2.8) \times 10^{-3}$		319
$\Xi^- \gamma$	$< 4.6 \times 10^{-4}$	CL=90%	314
$\Delta S = 2$ forbidden ($S2$) modes			
$\Lambda \pi^-$	$S2 \quad < 2.9 \times 10^{-6}$	CL=90%	449
$\Sigma^0 \pi^-$	$< 5.4 \times 10^{-4}$	CL=90%	393
$n K^-$	$< 2.4 \times 10^{-4}$	CL=90%	415

$\Omega(2012)^-$

$$I(J^P) = 0(?^-)$$

Mass $m = 2012.5 \pm 0.6$ MeV
Full width $\Gamma = 6.4^{+3.0}_{-2.6}$ MeV

Branching fractions are given relative to the one **DEFINED AS 1**.

$\Omega(2012)^-$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi^0 K^-$	DEFINED AS 1	403
$\Xi^- \bar{K}^0$	0.83 ± 0.21	392

$\Omega(2250)^-$	$I(J^P) = 0(?^?)$
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Mass $m = 2252 \pm 9$ MeV
Full width $\Gamma = 55 \pm 18$ MeV

$\Omega(2250)^-$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$\Xi^- \pi^+ K^-$	seen	532
$\Xi(1530)^0 K^-$	seen	437