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

Ω^- DECAY MODES		Fraction (Γ_i/Γ)	Scale factor/ Confidence level	p (MeV/c)
ΛK^-		(67.7 ±0.7) %		211
$\Xi^0 \pi^-$		(24.3 ±0.7) %	S=1.5	294
$\Xi^- \pi^0$		(8.55±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 ±2.8) $\times 10^{-3}$		319
$\Xi^- \gamma$		$< 4.6 \times 10^{-4}$	CL=90%	314
$\Delta S = 2$ forbidden ($S2$) modes				
$\Lambda \pi^-$	$S2$	$< 2.9 \times 10^{-6}$	CL=90%	449

$\Omega(2012)^-$

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

Mass $m = 2012.4 \pm 0.9$ 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)	Confidence level	p (MeV/c)
$\Xi^0 K^-$	**DEFINED AS 1**		403
$\Xi^- \overline{K}^0$	0.83 ± 0.21		392
$\Xi^0 \pi^0 K^-$	<0.30	90%	245
$\Xi^0 \pi^- \overline{K}^0$	<0.21	90%	230
$\Xi^- \pi^0 \overline{K}^0$	<0.7	90%	226
$\Xi^- \pi^+ K^-$	<0.08	90%	224

$\Omega(2250)^-$

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

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