Δ BARYONS
($S = 0$, $I = 3/2$)

$\Delta^{++} = uuu$, $\Delta^{+} = uud$, $\Delta^{0} = udd$, $\Delta^{-} = ddd$

$\Delta(1232)$ P_{33}

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

Mass $m = 1230$ to 1234 (≈ 1232) MeV
Full width $\Gamma = 115$ to 125 (≈ 120) MeV

The following branching fractions are our estimates, not fits or averages.

$\Delta(1232)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$N\pi$	$>$99 %	227
$N\gamma$	0.55–0.61 %	259

$\Delta(1600)$ P_{33}

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

Mass $m = 1550$ to 1700 (≈ 1600) MeV
Full width $\Gamma = 250$ to 450 (≈ 350) MeV

The following branching fractions are our estimates, not fits or averages.

$\Delta(1600)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$N\pi$	10–25 %	512
$N\pi\pi$	75–90 %	473
$\quad\Delta\pi$	40–70 %	301
$\quad N\rho$	$<$25 %	†
$\quad N(1440)\pi$	10–35 %	74
$p\gamma$	$\sim$ 0 %	525

$\Delta(1620)$ S_{31}

$I(J^P) = \frac{3}{2}(\frac{1}{2}^-)$

Mass $m = 1615$ to 1675 (≈ 1620) MeV
Full width $\Gamma = 120$ to 180 (≈ 150) MeV

The following branching fractions are our estimates, not fits or averages.

$\Delta(1620)$ DECAY MODES	Fraction (Γ_i/Γ)	p (MeV/c)
$N\pi$	20–30 %	526
$N\pi\pi$	70–80 %	488
$\quad\Delta\pi$	30–60 %	318
$\quad N\rho$	7–25 %	†
$N\gamma$	0.02–0.06 %	538