NODE=B137

$\Delta(2150)\ 1/2^-$

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

OMITTED FROM SUMMARY TABLE

The latest GWU analysis (ARNDT 06) finds no evidence for this resonance. NODE=B137

$\Delta(2150)$ BREIT-WIGNER MASS

NODE=B137M

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
≈ 2150 OUR ESTIMATE				
2047.4 ± 27.0	[1] CHEW	80	BPWA	$\pi^+ p \to \pi^+ p$
2203.2 ± 8.4	[1] CHEW	80	BPWA	$\pi^+ p \to \pi^+ p$
2150 ±100	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

NODE=B137M
→ UNCHECKED ←
OCCUR=2

$\Delta(2150)$ BREIT-WIGNER WIDTH

NODE=B137W

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
121.6 ± 62.0	[1] CHEW	80	BPWA	$\pi^+ p \to \pi^+ p$
120.5 ± 45.0	[1] CHEW	80	BPWA	$\pi^+ p \to \pi^+ p$
200 ±100	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

NODE=B137W
OCCUR=2

$\Delta(2150)$ POLE POSITION

NODE=B137215

REAL PART

NODE=B137RE
NODE=B137RE

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
2140 ± 80	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

−2×IMAGINARY PART

NODE=B137IM
NODE=B137IM

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
200 ± 80	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

$\Delta(2150)$ ELASTIC POLE RESIDUE

NODE=B137220

MODULUS $|r|$

NODE=B137RER
NODE=B137RER

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
7 ± 2	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

PHASE θ

NODE=B137IMR
NODE=B137IMR

VALUE (°)	DOCUMENT ID		TECN	COMMENT
−60 ± 90	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

$\Delta(2150)$ DECAY MODES

NODE=B137225;NODE=B137

	Mode	
Γ_1	$N\pi$	DESIG=1
Γ_2	ΣK	DESIG=2

$\Delta(2150)$ BRANCHING RATIOS

NODE=B137230

$\Gamma(N\pi)/\Gamma_{total}$ — Γ_1/Γ

NODE=B137R1
NODE=B137R1

VALUE (%)	DOCUMENT ID		TECN	COMMENT
41	[1] CHEW	80	BPWA	$\pi^+ p \to \pi^+ p$
37	[1] CHEW	80	BPWA	$\pi^+ p \to \pi^+ p$
8 ± 2	CUTKOSKY	80	IPWA	$\pi N \to \pi N$

OCCUR=2

$(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{total}$ in $N\pi \to \Delta(2150) \to \Sigma K$ — $(\Gamma_1\Gamma_2)^{1/2}/\Gamma$

NODE=B137R2
NODE=B137R2

VALUE	DOCUMENT ID		TECN	COMMENT
<0.03	CANDLIN	84	DPWA	$\pi^+ p \to \Sigma^+ K^+$

$\Delta(2150)$ FOOTNOTES

NODE=B137

[1] CHEW 80 reports two S_{31} resonances in this mass region. Problems with this analysis are discussed in section 2.1.11 of HOEHLER 83. NODE=B137;LINKAGE=A

Δ(2150) REFERENCES

NODE=B137

ARNDT	06	PR C74 045205	R.A. Arndt *et al.*	(GWU)	REFID=51535
CANDLIN	84	NP B238 477	D.J. Candlin *et al.*	(EDIN, RAL, LOWC)	REFID=40339
HOEHLER	83	Landolt-Boernstein 1/9B2	G. Hohler	(KARLT)	REFID=31158
CHEW	80	Toronto Conf. 123	D.M. Chew	(LBL) IJP	REFID=31151
CUTKOSKY	80	Toronto Conf. 19	R.E. Cutkosky *et al.*	(CMU, LBL) IJP	REFID=30064
Also		PR D20 2839	R.E. Cutkosky *et al.*	(CMU, LBL)	REFID=40096