$\Delta(2150)\ S_{31}$

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

OMITTED FROM SUMMARY TABLE

Δ(2150) BREIT-WIGNER MASS

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

Δ(2150) BREIT-WIGNER WIDTH

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

Δ(2150) POLE POSITION

REAL PART

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

−2×IMAGINARY PART

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

Δ(2150) ELASTIC POLE RESIDUE

MODULUS $|r|$

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

PHASE θ

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

Δ(2150) DECAY MODES

	Mode
Γ_1	$N\pi$
Γ_2	ΣK

$\Delta(2150)$ BRANCHING RATIOS

$\Gamma(N\pi)/\Gamma_{total}$ Γ_1/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
0.41	[1] CHEW	80	BPWA	$\pi^+ p \rightarrow \pi^+ p$
0.37	[1] CHEW	80	BPWA	$\pi^+ p \rightarrow \pi^+ p$
0.08 ± 0.02	CUTKOSKY	80	IPWA	$\pi N \rightarrow \pi N$

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

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

$\Delta(2150)$ FOOTNOTES

[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.

$\Delta(2150)$ REFERENCES

CANDLIN	84	NP B238 477	D.J. Candlin *et al.*	(EDIN, RAL, LOWC)
HOEHLER	83	Landolt-Boernstein 1/9B2	G. Hohler	(KARLT)
CHEW	80	Toronto Conf. 123	D.M. Chew	(LBL) IJP
CUTKOSKY	80	Toronto Conf. 19	R.E. Cutkosky *et al.*	(CMU, LBL) IJP
Also		PR D20 2839	R.E. Cutkosky *et al.*	(CMU, LBL)