

$\Delta(2150) 1/2^-$ $I(J^P) = \frac{3}{2}(\frac{1}{2}^-)$ Status: *

OMITTED FROM SUMMARY TABLE

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

 $\Delta(2150)$ BREIT-WIGNER MASS

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|--------------------|-------------|------------------------------------|
| ≈ 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 $\pi N \rightarrow \pi N$ |

 $\Delta(2150)$ BREIT-WIGNER WIDTH

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------------|--------------------|-------------|------------------------------------|
| 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 $\pi N \rightarrow \pi N$ |

 $\Delta(2150)$ POLE POSITION**REAL PART**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------------|--------------------|-------------|--------------------------------|
| 2140 ± 80 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

-2×IMAGINARY PART

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------------|--------------------|-------------|--------------------------------|
| 200 ± 80 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

 $\Delta(2150)$ ELASTIC POLE RESIDUE**MODULUS $|r|$**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------------|--------------------|-------------|--------------------------------|
| 7 ± 2 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

PHASE θ

| <u>VALUE (°)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|------------------|--------------------|-------------|--------------------------------|
| -60 ± 90 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ |

 $\Delta(2150)$ DECAY MODES

| <u>Mode</u> |
|---------------------------|
| $\Gamma_1 \quad N\pi$ |
| $\Gamma_2 \quad \Sigma K$ |

$\Delta(2150)$ BRANCHING RATIOS

| $\Gamma(N\pi)/\Gamma_{\text{total}}$ | | | | Γ_1/Γ |
|--------------------------------------|--------------------|-------------|------------------------------------|-------------------|
| <u>VALUE (%)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | |
| 41 | ¹ CHEW | 80 | BPWA $\pi^+ p \rightarrow \pi^+ p$ | |
| 37 | ¹ CHEW | 80 | BPWA $\pi^+ p \rightarrow \pi^+ p$ | |
| 8 ± 2 | CUTKOSKY | 80 | IPWA $\pi N \rightarrow \pi N$ | |

| $(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\pi \rightarrow \Delta(2150) \rightarrow \Sigma K$ | | | | $(\Gamma_1 \Gamma_2)^{1/2}/\Gamma$ |
|---|--------------------|-------------|---|------------------------------------|
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | |
| <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

| | | | | |
|----------|----|--------------------------|-----------------------------|-------------------|
| ARNDT | 06 | PR C74 045205 | R.A. Arndt <i>et al.</i> | (GWU) |
| CANDLIN | 84 | NP B238 477 | D.J. Candlin <i>et al.</i> | (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 <i>et al.</i> | (CMU, LBL) IJP |
| Also | | PR D20 2839 | R.E. Cutkosky <i>et al.</i> | (CMU, LBL) |