

$\Delta(\sim 3000 \text{ Region})$ Partial-Wave Analyses

OMITTED FROM SUMMARY TABLE

We list here miscellaneous high-mass candidates for isospin-3/2 resonances found in partial-wave analyses.

Our 1982 edition also had a $\Delta(2850)$ and a $\Delta(3230)$. The evidence for them was deduced from total cross-section and 180° elastic cross-section measurements. The $\Delta(2850)$ has been resolved into the $\Delta(2750) I_{3,13}$ and $\Delta(2950) K_{3,15}$. The $\Delta(3230)$ is perhaps related to the $K_{3,13}$ of HENDRY 78 and to the $L_{3,17}$ of KOCH 80.

$\Delta(\sim 3000)$ BREIT-WIGNER MASS

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|--------------------|-------------|--|
| ≈ 3000 OUR ESTIMATE | | | |
| 3300 | ¹ KOCH | 80 | IPWA $\pi N \rightarrow \pi N L_{3,17}$ wave |
| 3500 | ¹ KOCH | 80 | IPWA $\pi N \rightarrow \pi N M_{3,19}$ wave |
| 2850 ± 150 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N I_{3,11}$ wave |
| 3200 ± 200 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N K_{3,13}$ wave |
| 3300 ± 200 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N L_{3,17}$ wave |
| 3700 ± 200 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N M_{3,19}$ wave |
| 4100 ± 300 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N N_{3,21}$ wave |

$\Delta(\sim 3000)$ BREIT-WIGNER WIDTH

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------------|--------------------|-------------|--|
| 700 ± 200 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N I_{3,11}$ wave |
| 1000 ± 300 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N K_{3,13}$ wave |
| 1100 ± 300 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N L_{3,17}$ wave |
| 1300 ± 400 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N M_{3,19}$ wave |
| 1600 ± 500 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N N_{3,21}$ wave |

$\Delta(\sim 3000)$ DECAY MODES

| Mode |
|-----------------------|
| $\Gamma_1 \quad N\pi$ |

$\Delta(\sim 3000)$ BRANCHING RATIOS

| $\Gamma(N\pi)/\Gamma_{\text{total}}$ | <i>DOCUMENT ID</i> | <i>TECN</i> | <i>COMMENT</i> | Γ_1/Γ |
|--------------------------------------|--------------------|-------------|--|-------------------------------------|
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | <u>Γ_1/Γ</u> |
| 0.06 \pm 0.02 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N$ $I_{3,11}$ wave | |
| 0.045 \pm 0.02 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N$ $K_{3,13}$ wave | |
| 0.03 \pm 0.01 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N$ $L_{3,17}$ wave | |
| 0.025 \pm 0.01 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N$ $M_{3,19}$ wave | |
| 0.018 \pm 0.01 | HENDRY | 78 | MPWA $\pi N \rightarrow \pi N$ $N_{3,21}$ wave | |

$\Delta(\sim 3000)$ FOOTNOTES

¹ In addition, KOCH 80 reports some evidence for an S_{31} $\Delta(2700)$ and a P_{33} $\Delta(2800)$.

$\Delta(\sim 3000)$ REFERENCES

| | | | | |
|--------|----|-----------------|-------------|----------------|
| KOCH | 80 | Toronto Conf. 3 | R. Koch | |
| HENDRY | 78 | PRL 41 222 | A.W. Hendry | (KARLT) IJP |
| Also | | ANP 136 1 | A.W. Hendry | (IND, LBL) IJP |
| | | | | (IND) |