

$\Sigma(1385) P_{13}$ $I(J^P) = 1(\frac{3}{2}^+)$ Status: ****

Discovered by ALSTON 60. Early measurements of the mass and width for combined charge states have been omitted. They may be found in our 1984 edition *Reviews of Modern Physics* **56** S1 (1984).

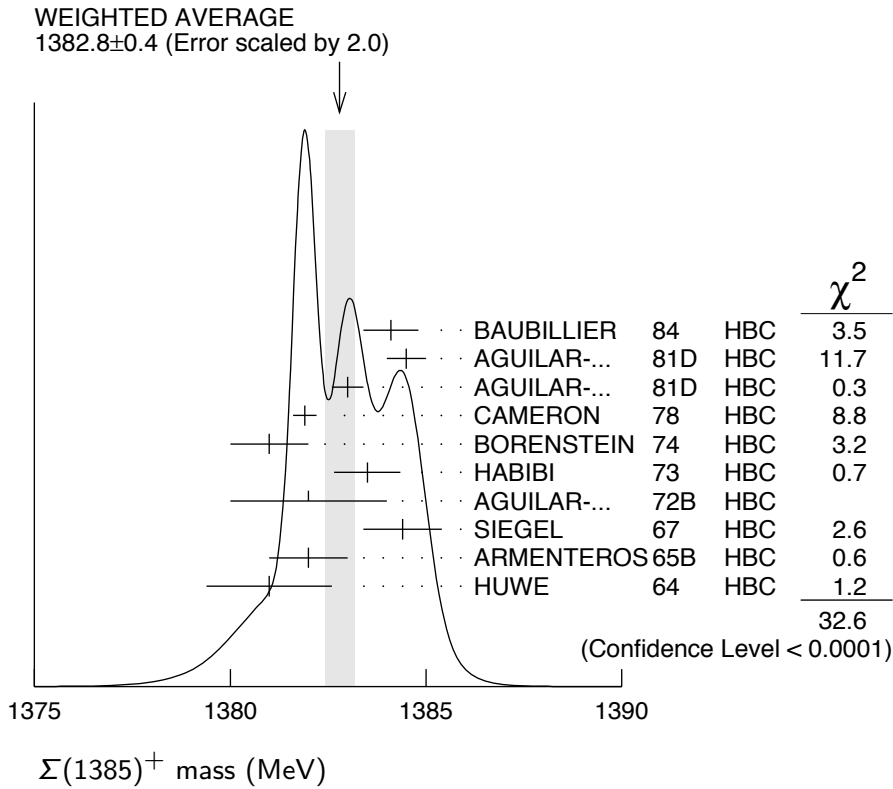
We average only the most significant determinations. We do not average results from inclusive experiments with large backgrounds or results which are not accompanied by some discussion of experimental resolution. Nevertheless systematic differences between experiments remain. (See the ideograms in the Listings below.) These differences could arise from interference effects that change with production mechanism and/or beam momentum. They can also be accounted for in part by differences in the parametrizations employed. (See BORENSTEIN 74 for a discussion on this point.) Thus BORENSTEIN 74 uses a Breit-Wigner with energy-independent width, since a P -wave was found to give unsatisfactory fits. CAMERON 78 uses the same form. On the other hand HOLMGREN 77 obtains a good fit to their $\Lambda\pi$ spectrum with a P -wave Breit-Wigner, but includes the partial width for the $\Sigma\pi$ decay mode in the parametrization. AGUILAR-BENITEZ 81D gives masses and widths for five different Breit-Wigner shapes. The results vary considerably. Only the best-fit S -wave results are given here.

$\Sigma(1385)$ MASSES

$\Sigma(1385)^+$ MASS

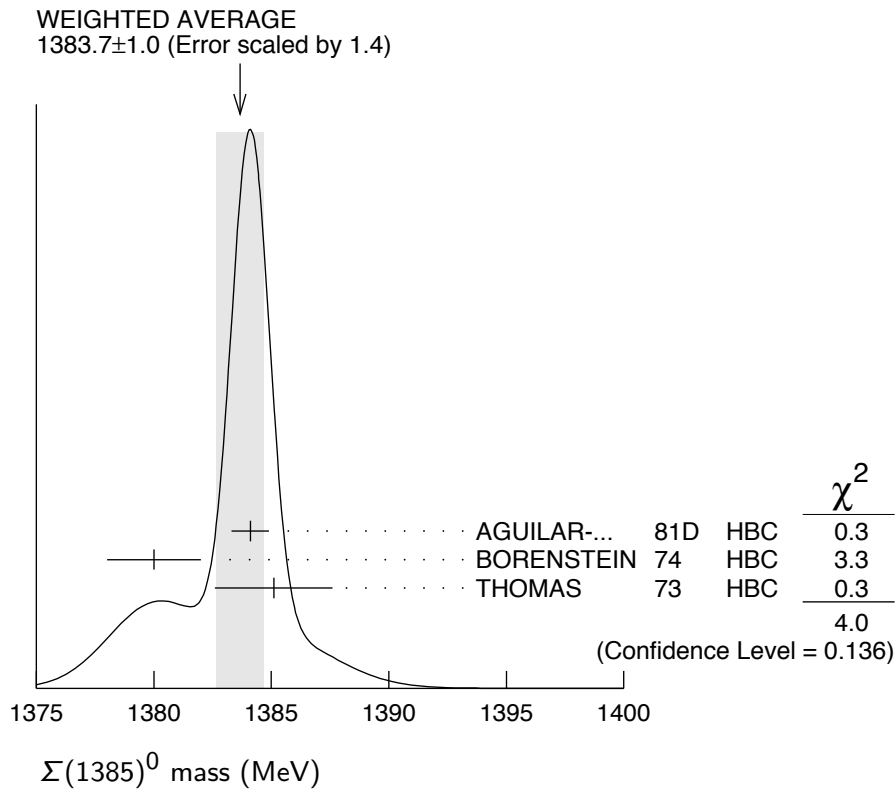
| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|-------------------|---|---|------|---|
| 1382.8±0.4 | OUR AVERAGE | Error includes scale factor of 2.0. See the ideogram below. | | |
| 1384.1±0.7 | 1897 | BAUBILLIER 84 | HBC | $K^- p$ 8.25 GeV/c |
| 1384.5±0.5 | 5256 | AGUILAR-... 81D | HBC | $K^- p \rightarrow \Lambda\pi\pi$ 4.2 GeV/c |
| 1383.0±0.4 | 9361 | AGUILAR-... 81D | HBC | $K^- p \rightarrow \Lambda 3\pi$ 4.2 GeV/c |
| 1381.9±0.3 | 6900 | CAMERON 78 | HBC | $K^- p$ 0.96–1.36 GeV/c |
| 1381 ±1 | 6846 | BORENSTEIN 74 | HBC | $K^- p$ 2.18 GeV/c |
| 1383.5±0.85 | 2300 | HABIBI 73 | HBC | $K^- p \rightarrow \Lambda\pi\pi$ |
| 1382 ±2 | 400 | AGUILAR-... 72B | HBC | $K^- p \rightarrow \Lambda\pi$'s |
| 1384.4±1.0 | 1260 | SIEGEL 67 | HBC | $K^- p$ 2.1 GeV/c |
| 1382 ±1 | 750 | ARMENTEROS65B | HBC | $K^- p$ 0.9–1.2 GeV/c |
| 1381.0±1.6 | 859 | HUWE 64 | HBC | $K^- p$ 1.22 GeV/c |
| ● ● ● | We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 1385.1±1.2 | 600 | BAKER 80 | HYBR | $\pi^+ p$ 7 GeV/c |
| 1383.2±1.0 | 750 | BAKER 80 | HYBR | $K^- p$ 7 GeV/c |
| 1381 ±2 | 7k | ¹ BAUBILLIER 79B | HBC | $K^- p$ 8.25 GeV/c |
| 1391 ±2 | 2k | CAUTIS 79 | HYBR | $\pi^+ p/K^- p$ 11.5 GeV |
| 1390 ±2 | 100 | ¹ SUGAHARA 79B | HBC | $\pi^- p$ 6 GeV/c |
| 1385 ±3 | 22k | ^{1,2} BARREIRO 77B | HBC | $K^- p$ 4.2 GeV/c |
| 1385 ±1 | 2594 | HOLMGREN 77 | HBC | See AGUILAR-BENITEZ 81D |

| | | | | | | | |
|--------------|------|---|--------------|-----|------|-----------------------------------|-----------------|
| 1380 ± 2 | | 1 | BARDADIN-... | 75 | HBC | $K^- p$ | 14.3 GeV/c |
| 1382 ± 1 | 3740 | 3 | BERTHON | 74 | HBC | $K^- p$ | 1263–1843 MeV/c |
| 1390 ± 6 | 46 | | AGUILAR-... | 70B | HBC | $K^- p \rightarrow \Sigma \pi$'s | 4 GeV/c |
| 1383 ± 8 | 62 | 4 | BIRMINGHAM | 66 | HBC | $K^- p$ | 3.5 GeV/c |
| 1378 ± 5 | 135 | | LONDON | 66 | HBC | $K^- p$ | 2.24 GeV/c |
| 1384.3 ± 1.9 | 250 | 4 | SMITH | 65 | HBC | $K^- p$ | 1.8 GeV/c |
| 1382.6 ± 2.1 | 250 | 4 | SMITH | 65 | HBC | $K^- p$ | 1.95 GeV/c |
| 1375.0 ± 3.9 | 170 | | COOPER | 64 | HBC | $K^- p$ | 1.45 GeV/c |
| 1376.0 ± 3.9 | 154 | 4 | ELY | 61 | HLBC | $K^- p$ | 1.11 GeV/c |



$\Sigma(1385)^0$ MASS

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|---|------|---|---------|---|
| 1383.7 ± 1.0 OUR AVERAGE | | Error includes scale factor of 1.4. See the ideogram below. | | |
| 1384.1 ± 0.8 | 5722 | AGUILAR-... | 81D HBC | $K^- p \rightarrow \Lambda 3\pi$ 4.2 GeV/c |
| 1380 ± 2 | 3100 | ⁵ BORENSTEIN | 74 HBC | $K^- p \rightarrow \Lambda 3\pi$ 2.18 GeV/c |
| 1385.1 ± 2.5 | 240 | ⁴ THOMAS | 73 HBC | $\pi^- p \rightarrow \Lambda \pi^0 K^0$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 1389 ± 3 | 500 | ⁶ BAUBILLIER | 79B HBC | $K^- p$ 8.25 GeV/c |

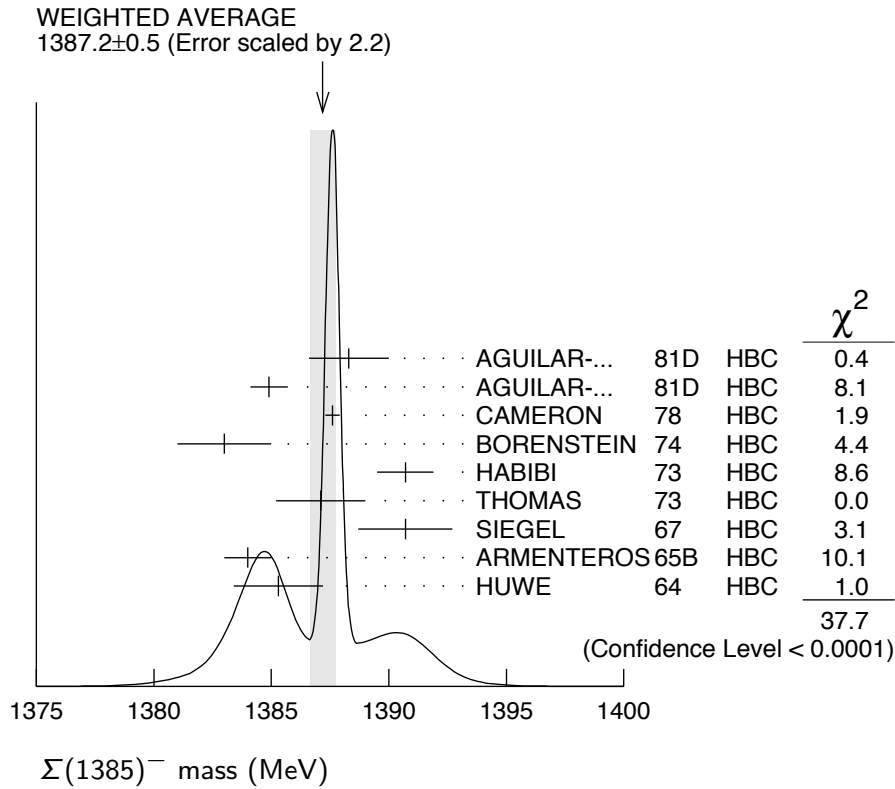


$\Sigma(1385)^-$ MASS

| <u>VALUE (MeV)</u> | <u>EVTS</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-------------------------------|-------------|---|-------------|---|
| 1387.2±0.5 OUR AVERAGE | | Error includes scale factor of 2.2. See the ideogram below. | | |
| 1388.3±1.7 | 620 | AGUILAR-... | 81D HBC | $K^- p \rightarrow \Lambda \pi \pi$ 4.2 GeV/c |
| 1384.9±0.8 | 3346 | AGUILAR-... | 81D HBC | $K^- p \rightarrow \Lambda 3\pi$ 4.2 GeV/c |
| 1387.6±0.3 | 9720 | CAMERON | 78 HBC | $K^- p$ 0.96–1.36 GeV/c |
| 1383 ±2 | 2303 | BORENSTEIN | 74 HBC | $K^- p$ 2.18 GeV/c |
| 1390.7±1.2 | 1900 | HABIBI | 73 HBC | $K^- p \rightarrow \Lambda \pi \pi$ |
| 1387.1±1.9 | 630 | ⁴ THOMAS | 73 HBC | $\pi^- p \rightarrow \Lambda \pi^- K^+$ |
| 1390.7±2.0 | 370 | SIEGEL | 67 HBC | $K^- p$ 2.1 GeV/c |
| 1384 ±1 | 1380 | ARMENTEROS65B | HBC | $K^- p$ 0.9–1.2 GeV/c |
| 1385.3±1.9 | 1086 | ⁴ HUWE | 64 HBC | $K^- p$ 1.15–1.30 GeV/c |

● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●

| | | | | |
|------------|------|---------------------------|---------|-------------------------|
| 1383 ±1 | 4.5k | ¹ BAUBILLIER | 79B HBC | $K^- p$ 8.25 GeV/c |
| 1380 ±6 | 150 | ¹ SUGAHARA | 79B HBC | $\pi^- p$ 6 GeV/c |
| 1387 ±3 | 12k | ^{1,2} BARREIRO | 77B HBC | $K^- p$ 4.2 GeV/c |
| 1391 ±3 | 193 | HOLMGREN | 77 HBC | See AGUILAR-BENITEZ 81D |
| 1383 ±2 | | ¹ BARDADIN-... | 75 HBC | $K^- p$ 14.3 GeV/c |
| 1389 ±1 | 3060 | ³ BERTHON | 74 HBC | $K^- p$ 1263–1843 MeV/c |
| 1389 ±9 | 15 | LONDON | 66 HBC | $K^- p$ 2.24 GeV/c |
| 1391.5±2.6 | 120 | ⁴ SMITH | 65 HBC | $K^- p$ 1.8 GeV/c |
| 1399.8±2.2 | 58 | ⁴ SMITH | 65 HBC | $K^- p$ 1.95 GeV/c |
| 1392.0±6.2 | 200 | COOPER | 64 HBC | $K^- p$ 1.45 GeV/c |
| 1382 ±3 | 93 | DAHL | 61 DBC | $K^- d$ 0.45 GeV/c |
| 1376.0±4.4 | 224 | ⁴ ELY | 61 HLBC | $K^- p$ 1.11 GeV/c |



$m_{\Sigma(1385)^-} - m_{\Sigma(1385)^+}$

| VALUE (MeV) | CL% | DOCUMENT ID | TECN | COMMENT |
|---|-----|----------------------------|------|-------------------------------------|
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| - 2 to +6 | 95 | ⁷ BORENSTEIN 74 | HBC | $K^- p$ 2.18 GeV/c |
| 7.2 ± 1.4 | | ⁷ HABIBI 73 | HBC | $K^- p \rightarrow \Lambda \pi \pi$ |
| 6.3 ± 2.0 | | ⁷ SIEGEL 67 | HBC | $K^- p$ 2.1 GeV/c |
| 11 ± 9 | | ⁷ LONDON 66 | HBC | $K^- p$ 2.24 GeV/c |
| 9 ± 6 | | LONDON 66 | HBC | $\Lambda 3\pi$ events |
| 2.0 ± 1.5 | | ⁷ ARMENTEROS65B | HBC | $K^- p$ 0.9–1.2 GeV/c |
| 7.2 ± 2.1 | | ⁷ SMITH 65 | HBC | $K^- p$ 1.8 GeV/c |
| 17.2 ± 2.0 | | ⁷ SMITH 65 | HBC | $K^- p$ 1.95 GeV/c |
| 17 ± 7 | | ⁷ COOPER 64 | HBC | $K^- p$ 1.45 GeV/c |
| 4.3 ± 2.2 | | ⁷ HUWE 64 | HBC | $K^- p$ 1.22 GeV/c |
| 0.0 ± 4.2 | | ⁷ ELY 61 | HLBC | $K^- p$ 1.11 GeV/c |

$m_{\Sigma(1385)^0} - m_{\Sigma(1385)^+}$

| VALUE (MeV) | CL% | DOCUMENT ID | TECN | COMMENT |
|---|-----|----------------------------|------|--------------------|
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| - 4 to +4 | 95 | ⁷ BORENSTEIN 74 | HBC | $K^- p$ 2.18 GeV/c |

$m_{\Sigma(1385)^-} - m_{\Sigma(1385)^0}$

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---------------|---------------------|------|---|
| 2.0 ± 2.4 | ⁷ THOMAS | 73 | HBC $\pi^- p \rightarrow \Lambda \pi^- K^+$ |

$\Sigma(1385)$ WIDTHS

$\Sigma(1385)^+$ WIDTH

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|----------------------------------|--------------------|----------------------------|------|---|
| 35.8 ± 0.8 | OUR AVERAGE | | | |
| 37.2 ± 2.0 | 1897 | BAUBILLIER 84 | HBC | $K^- p$ 8.25 GeV/c |
| 35.1 ± 1.7 | 5256 | AGUILAR-... 81D | HBC | $K^- p \rightarrow \Lambda \pi \pi$ 4.2 GeV/c |
| 37.5 ± 2.0 | 9361 | AGUILAR-... 81D | HBC | $K^- p \rightarrow \Lambda 3\pi$ 4.2 GeV/c |
| 35.5 ± 1.9 | 6900 | CAMERON 78 | HBC | $K^- p$ 0.96–1.36 GeV/c |
| 34.0 ± 1.6 | 6846 | ⁸ BORENSTEIN 74 | HBC | $K^- p$ 2.18 GeV/c |
| 38.3 ± 3.2 | 2300 | ⁹ HABIBI 73 | HBC | $K^- p \rightarrow \Lambda \pi \pi$ |
| 32.5 ± 6.0 | 400 | AGUILAR-... 72B | HBC | $K^- p \rightarrow \Lambda \pi$'s |
| 36 ± 4 | 1260 | ⁹ SIEGEL 67 | HBC | $K^- p$ 2.1 GeV/c |
| 32.0 ± 4.7 | 750 | ⁹ ARMENTEROS65B | HBC | $K^- p$ 0.95–1.20 GeV/c |
| 46.5 ± 6.4 | 859 | ⁹ HUWE 64 | HBC | $K^- p$ 1.15–1.30 GeV/c |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | |
|----------------|------|------------------------------|------|---|
| 40 ± 3 | 600 | BAKER 80 | HYBR | $\pi^+ p$ 7 GeV/c |
| 37 ± 2 | 750 | BAKER 80 | HYBR | $K^- p$ 7 GeV/c |
| 37 ± 2 | 7k | ¹ BAUBILLIER 79B | HBC | $K^- p$ 8.25 GeV/c |
| 30 ± 4 | 2k | CAUTIS 79 | HYBR | $\pi^+ p / K^- p$ 11.5 GeV |
| 30 ± 6 | 100 | ¹ SUGAHARA 79B | HBC | $\pi^- p$ 6 GeV/c |
| 43 ± 5 | 22k | ^{1,2} BARREIRO 77B | HBC | $K^- p$ 4.2 GeV/c |
| 34 ± 2 | 2594 | HOLMGREN 77 | HBC | See AGUILAR-BENITEZ 81D |
| 40.0 ± 3.2 | | ¹ BARDADIN-... 75 | HBC | $K^- p$ 14.3 GeV/c |
| 48 ± 3 | 3740 | ³ BERTHON 74 | HBC | $K^- p$ 1263–1843 MeV/c |
| 33 ± 20 | 46 | ⁹ AGUILAR-... 70B | HBC | $K^- p \rightarrow \Sigma \pi$'s 4 GeV/c |
| 25 ± 32 | 62 | ⁹ BIRMINGHAM 66 | HBC | $K^- p$ 3.5 GeV/c |
| 30.3 ± 7.5 | 250 | ⁹ SMITH 65 | HBC | $K^- p$ 1.8 GeV/c |
| 33.1 ± 8.3 | 250 | ⁹ SMITH 65 | HBC | $K^- p$ 1.95 GeV/c |
| 51 ± 16 | 170 | ⁹ COOPER 64 | HBC | $K^- p$ 1.45 GeV/c |
| 48 ± 16 | 154 | ⁹ ELY 61 | HLBC | $K^- p$ 1.11 GeV/c |

$\Sigma(1385)^0$ WIDTH

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | COMMENT |
|------------------------------|--------------------|------------------------|------|--|
| 36 ± 5 | OUR AVERAGE | | | |
| 34.8 ± 5.6 | 5722 | AGUILAR-... 81D | HBC | $K^- p \rightarrow \Lambda 3\pi$ 4.2 GeV/c |
| 39.3 ± 10.2 | 240 | ⁹ THOMAS 73 | HBC | $\pi^- p \rightarrow \Lambda \pi^0 K^0$ |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | |
|------------|------|-----------------------------|------|---|
| 53 ± 8 | 3100 | ¹⁰ BORENSTEIN 74 | HBC | $K^- p \rightarrow \Lambda 3\pi$ 2.18 GeV/c |
| 30 ± 9 | 106 | CURTIS 63 | OSPK | $\pi^- p$ 1.5 GeV/c |

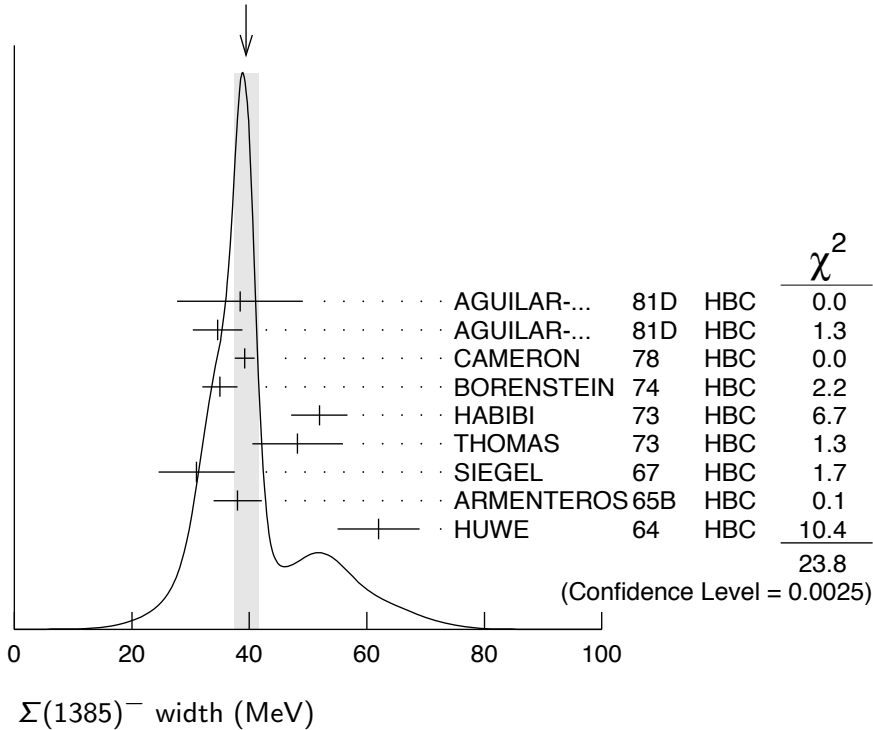
$\Sigma(1385)^-$ WIDTH

| <u>VALUE (MeV)</u> | <u>EVTS</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-------------------------------|-------------|-------------------------------------|-------------|---|
| 39.4 ± 2.1 OUR AVERAGE | | Error includes scale factor of 1.7. | | See the ideogram below. |
| 38.4 ± 10.7 | 620 | AGUILAR-... | 81D HBC | $K^- p \rightarrow \Lambda \pi \pi$ 4.2 GeV/c |
| 34.6 ± 4.2 | 3346 | AGUILAR-... | 81D HBC | $K^- p \rightarrow \Lambda 3\pi$ 4.2 GeV/c |
| 39.2 ± 1.7 | 9720 | CAMERON | 78 HBC | $K^- p$ 0.96–1.36 GeV/c |
| 35 ± 3 | 2303 | ⁸ BORENSTEIN | 74 HBC | $K^- p$ 2.18 GeV/c |
| 51.9 ± 4.8 | 1900 | ⁹ HABIBI | 73 HBC | $K^- p \rightarrow \Lambda \pi \pi$ |
| 48.2 ± 7.7 | 630 | ⁹ THOMAS | 73 HBC | $\pi^- p \rightarrow \Lambda \pi^- K^0$ |
| 31.0 ± 6.5 | 370 | ⁹ SIEGEL | 67 HBC | $K^- p$ 2.1 GeV/c |
| 38.0 ± 4.1 | 1382 | ⁹ ARMENTEROS65B | HBC | $K^- p$ 0.95–1.20 GeV/c |
| 62 ± 7 | 1086 | HUWE | 64 HBC | $K^- p$ 1.15–1.30 GeV/c |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | |
|-------------|------|---------------------------|---------|-------------------------|
| 44 ± 4 | 4.5k | ¹ BAUBILLIER | 79B HBC | $K^- p$ 8.25 GeV/c |
| 58 ± 4 | 150 | ¹ SUGAHARA | 79B HBC | $\pi^- p$ 6 GeV/c |
| 45 ± 5 | 12k | ^{1,2} BARREIRO | 77B HBC | $K^- p$ 4.2 GeV/c |
| 35 ± 10 | 193 | HOLMGREN | 77 HBC | See AGUILAR-BENITEZ 81D |
| 47 ± 6 | | ¹ BARDADIN-... | 75 HBC | $K^- p$ 14.3 GeV/c |
| 40 ± 3 | 3060 | ³ BERTHON | 74 HBC | $K^- p$ 1263–1843 MeV/c |
| 29.2 ± 10.6 | 120 | ⁹ SMITH | 65 HBC | $K^- p$ 1.80 GeV/c |
| 17.1 ± 8.9 | 58 | ⁹ SMITH | 65 HBC | $K^- p$ 1.95 GeV/c |
| 88 ± 24 | 200 | ⁹ COOPER | 64 HBC | $K^- p$ 1.45 GeV/c |
| 40 | | DAHL | 61 DBC | $K^- d$ 0.45 GeV/c |
| 66 ± 18 | 224 | ⁹ ELY | 61 HLBC | $K^- p$ 1.11 GeV/c |

WEIGHTED AVERAGE
39.4 ± 2.1 (Error scaled by 1.7)



$\Sigma(1385)$ POLE POSITIONS

$\Sigma(1385)^+$ REAL PART

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>COMMENT</u> |
|--------------|--------------------|------------------------|
| 1379 ± 1 | LICHTENBERG74 | Extrapolates HABIBI 73 |

$\Sigma(1385)^+$ –IMAGINARY PART

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>COMMENT</u> |
|--------------|--------------------|------------------------|
| 17.5 ± 1.5 | LICHTENBERG74 | Extrapolates HABIBI 73 |

$\Sigma(1385)^-$ REAL PART

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>COMMENT</u> |
|--------------|--------------------|------------------------|
| 1383 ± 1 | LICHTENBERG74 | Extrapolates HABIBI 73 |

$\Sigma(1385)^-$ –IMAGINARY PART

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>COMMENT</u> |
|--------------|--------------------|------------------------|
| 22.5 ± 1.5 | LICHTENBERG74 | Extrapolates HABIBI 73 |

$\Sigma(1385)$ DECAY MODES

| | Mode | Fraction (Γ_i/Γ) | Confidence level |
|------------|------------------|--------------------------------|------------------|
| Γ_1 | $\Lambda\pi$ | (87.0 ± 1.5) % | |
| Γ_2 | $\Sigma\pi$ | (11.7 ± 1.5) % | |
| Γ_3 | $\Lambda\gamma$ | (1.3 ± 0.4) % | |
| Γ_4 | $\Sigma^-\gamma$ | < 2.4 × 10 ⁻⁴ | 90% |
| Γ_5 | $N\bar{K}$ | | |

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

$\Sigma(1385)$ BRANCHING RATIOS

| $\Gamma(\Sigma\pi)/\Gamma(\Lambda\pi)$ | | | | | Γ_2/Γ_1 |
|--|---|-------------|------------|----------------|---|
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u> | |
| 0.135 ± 0.011 OUR AVERAGE | | | | | |
| 0.20 ± 0.06 | DIONISI | 78B | HBC | ± | $K^- p \rightarrow Y^* K \bar{K}$ |
| 0.16 ± 0.03 | BERTHON | 74 | HBC | + | $K^- p$ 1.26–1.84 GeV/c |
| 0.11 ± 0.02 | BERTHON | 74 | HBC | – | $K^- p$ 1.26–1.84 GeV/c |
| 0.21 ± 0.05 | BORENSTEIN | 74 | HBC | + | $K^- p \rightarrow \Lambda\pi^+\pi^-$, $\Sigma^0\pi^+\pi^-$ |
| 0.18 ± 0.04 | MAST | 73 | MPWA | ± | $K^- p \rightarrow \Lambda\pi^+\pi^-$, $\Sigma^0\pi^+\pi^-$ |
| 0.10 ± 0.05 | THOMAS | 73 | HBC | – | $\pi^- p \rightarrow \Lambda K\pi$, $\Sigma K\pi$ |
| 0.16 ± 0.07 | AGUILAR-... | 72B | HBC | + | $K^- p$ 3.9, 4.6 GeV/c |
| 0.13 ± 0.04 | COLLEY | 71B | DBC | –0 | $K^- N$ 1.5 GeV/c |
| 0.13 ± 0.04 | PAN | 69 | HBC | + | $\pi^+ p \rightarrow \Lambda K\pi$, $\Sigma K\pi$ |
| 0.08 ± 0.06 | LONDON | 66 | HBC | + | $K^- p$ 2.24 GeV/c |
| 0.163 ± 0.041 | ARMENTEROS65B | | HBC | ± | $K^- p$ 0.95–1.20 GeV/c |
| 0.09 ± 0.04 | HUWE | 64 | HBC | ± | $K^- p$ 1.2–1.7 GeV |
| • • • | We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| <0.04 | ALSTON | 62 | HBC | ±0 | $K^- p$ 1.15 GeV/c |
| 0.04 ± 0.04 | BASTIEN | 61 | HBC | ± | |

| $\Gamma(\Lambda\gamma)/\Gamma(\Lambda\pi)$ | | | | | | Γ_3/Γ_1 |
|--|-----|------|-------------|---------|--|---------------------|
| VALUE (units 10^{-2}) | CL% | EVTS | DOCUMENT ID | TECN | COMMENT | |
| $1.53 \pm 0.39^{+0.15}_{-0.24}$ | | 61 | TAYLOR | 05 CLAS | $\gamma p \rightarrow K^+ \Lambda\gamma$ | |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | | | |
|----|----|--|-------|---------|------------------------------|--|
| <6 | 90 | | COLAS | 75 HLBC | $K^- p, 575\text{--}970$ MeV | |
|----|----|--|-------|---------|------------------------------|--|

| $\Gamma(\Sigma^- \gamma)/\Gamma_{\text{total}}$ | | | | | | Γ_4/Γ |
|---|-----|----------------------------|------|-----|--|-------------------|
| VALUE | CL% | DOCUMENT ID | TECN | CHG | COMMENT | |
| < 2.4×10^{-4} | 90 | ¹¹ MOLCHANOV 04 | SELX | – | $\Sigma^- \text{Pb} \rightarrow \Sigma(1385)^- \text{Pb}, 600$ GeV | |

• • • We do not use the following data for averages, fits, limits, etc. • • •

| | | | | | | |
|------------------------|----|--------------------|---------|---|---|--|
| < 6.1×10^{-4} | 90 | ¹² ARIK | 77 SPEC | – | $\Sigma^- \text{Pb} \rightarrow \Sigma(1385)^- \text{Pb}, 23$ GeV | |
|------------------------|----|--------------------|---------|---|---|--|

| $(\Gamma_i \Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(1385) \rightarrow \Lambda\pi$ | | | | | $(\Gamma_5 \Gamma_1)^{1/2}/\Gamma$ |
|---|------------------------|-------|----------------------------|--|------------------------------------|
| VALUE | DOCUMENT ID | CHG | COMMENT | | |
| $+0.586 \pm 0.319$ | ¹³ DEVENISH | 74B 0 | Fixed- t dispersion rel. | | |

$\Sigma(1385)$ FOOTNOTES

- ¹ From fit to inclusive $\Lambda\pi$ spectrum.
- ² Includes data of HOLMGREN 77.
- ³ The errors are statistical only. The resolution is not unfolded.
- ⁴ The error is enlarged to Γ/\sqrt{N} . See the note on the $K^*(892)$ mass in the 1984 edition.
- ⁵ From a fit to $\Lambda\pi^0$ with the width fixed at 34 MeV.
- ⁶ From fit to inclusive $\Lambda\pi^0$ spectrum with the width fixed at 40 MeV.
- ⁷ Redundant with data in the mass Listings.
- ⁸ Results from $\Lambda\pi^+\pi^-$ and $\Lambda\pi^+\pi^-\pi^0$ combined by us.
- ⁹ The error is enlarged to $4\Gamma/\sqrt{N}$. See the note on the $K^*(892)$ mass in the 1984 edition.
- ¹⁰ Consistent with +, 0, and – widths equal.
- ¹¹ We calculate this from the MOLCHANOV 04 upper limit of 9.5 keV on the $\Sigma^- \gamma$ width.
- ¹² We calculate this from the ARIK 77 upper limit of 24 keV on the $\Sigma^- \gamma$ width.
- ¹³ An extrapolation of the parametrized amplitude below threshold.

$\Sigma(1385)$ REFERENCES

| | | | | |
|--------------|-----|------------------------|---|----------------------|
| TAYLOR | 05 | PR C71 054609 | S. Taylor <i>et al.</i> | (JLab CLAS Collab.) |
| Also | | PR C72 039902 (errat.) | S. Taylor <i>et al.</i> | (JLab CLAS Collab.) |
| MOLCHANOV | 04 | PL B590 161 | V.V. Molchanov <i>et al.</i> | (FNAL SELEX Collab.) |
| BAUBILLIER | 84 | ZPHY C23 213 | M. Baubillier <i>et al.</i> | (BIRM, CERN, GLAS+) |
| PDG | 84 | RMP 56 S1 | C.G. Wohl <i>et al.</i> | (LBL, CIT, CERN) |
| AGUILAR-... | 81D | AFIS A77 144 | M. Aguilar-Benitez, J. Salicio | (MADR) |
| BAKER | 80 | NP B166 207 | P.A. Baker <i>et al.</i> | (LOIC) |
| BAUBILLIER | 79B | NP B148 18 | M. Baubillier <i>et al.</i> | (BIRM, CERN, GLAS+) |
| CAUTIS | 79 | NP B156 507 | C.V. Cautis <i>et al.</i> | (SLAC) |
| SUGAHARA | 79B | NP B156 237 | R. Sugahara <i>et al.</i> | (KEK, OSKC, KINK) |
| CAMERON | 78 | NP B143 189 | W. Cameron <i>et al.</i> | (RHEL, LOIC) |
| DIONISI | 78B | PL 78B 154 | C. Dionisi, R. Armenteros, J. Diaz | (CERN, AMST+) |
| ARIK | 77 | PRL 38 1000 | E. Arik <i>et al.</i> | (PITT, BNL, MASA) |
| BARREIRO | 77B | NP B126 319 | F. Barreiro <i>et al.</i> | (CERN, AMST, NIJM) |
| HOLMGREN | 77 | NP B119 261 | S.O. Holmgren <i>et al.</i> | (CERN, AMST, NIJM) |
| BARDADIN-... | 75 | NP B98 418 | M. Bardadin-Otwinowska <i>et al.</i> | (SACL, EPOL+) |
| COLAS | 75 | NP B91 253 | J. Colas <i>et al.</i> | (ORSAY) |
| BERTHON | 74 | NC 21A 146 | A. Berthon <i>et al.</i> | (CDEF, RHEL, SACL+) |
| BORENSTEIN | 74 | PR D9 3006 | S.R. Borenstein <i>et al.</i> | (BNL, MICH) |
| DEVENISH | 74B | NP B81 330 | R.C.E. Devenish, C.D. Froggatt, B.R. Martin | (DESY+) |

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|-------------|-----|-------------------|--|--------------------------|
| LICHTENBERG | 74 | PR D10 3865 | D.B. Lichtenberg | (IND) |
| Also | | Private Comm. | D.B. Lichtenberg | (IND) |
| HABIBI | 73 | Thesis Nevis 199 | M. Habibi | (COLU) |
| Also | | Purdue Conf. 387 | C. Baltay <i>et al.</i> | (COLU, BING) |
| MAST | 73 | PR D7 3212 | T.S. Mast <i>et al.</i> | (LBL) IJP |
| Also | | PR D7 5 | T.S. Mast <i>et al.</i> | (LBL) IJP |
| THOMAS | 73 | NP B56 15 | D.W. Thomas <i>et al.</i> | (CMU) JP |
| AGUILAR-... | 72B | PR D6 29 | M. Aguilar-Benitez <i>et al.</i> | (BNL) |
| COLLEY | 71B | NP B31 61 | D.C. Colley <i>et al.</i> | (BIRM, EDIN, GLAS+) |
| AGUILAR-... | 70B | PRL 25 58 | M. Aguilar-Benitez <i>et al.</i> | (BNL, SYRA) |
| PAN | 69 | PRL 23 808 | Y.L. Pan, F.L. Forman | (PENN) I |
| SIEGEL | 67 | Thesis UCRL 18041 | D.M. Siegel | (LRL) |
| BIRMINGHAM | 66 | PR 152 1148 | M. Haque <i>et al.</i> | (BIRM, GLAS, LOIC, OXF+) |
| LONDON | 66 | PR 143 1034 | G.W. London <i>et al.</i> | (BNL, SYRA) J |
| ARMENTEROS | 65B | PL 19 75 | R. Armenteros <i>et al.</i> | (CERN, HEID, SACL) |
| SMITH | 65 | Thesis UCLA | L.T. Smith | (UCLA) |
| COOPER | 64 | PL 8 365 | W.A. Cooper <i>et al.</i> | (CERN, AMST) |
| HUWE | 64 | Thesis UCRL 11291 | D.O. Huwe | (LRL) JP |
| Also | | PR 181 1824 | D.O. Huwe | (LRL) |
| CURTIS | 63 | PR 132 1771 | L.J. Curtis <i>et al.</i> | (MICH) J |
| ALSTON | 62 | CERN Conf. 311 | M.H. Alston <i>et al.</i> | (LRL) |
| BASTIEN | 61 | PRL 6 702 | P.L. Bastien, M. Ferro-Luzzi, A.H. Rosenfeld | (LRL) |
| DAHL | 61 | PRL 6 142 | O.I. Dahl <i>et al.</i> | (LRL) |
| ELY | 61 | PRL 7 461 | R.P. Ely <i>et al.</i> | (LRL) J |
| ALSTON | 60 | PRL 5 520 | M.H. Alston <i>et al.</i> | (LRL) I |