

$\Sigma(2030) 7/2^+$ $I(J^P) = 1(\frac{7}{2}^+)$ Status: ****

Discovered by COOL 66 and by WOHL 66. For most results published before 1974 (they are now obsolete), see our 1982 edition *Physics Letters* **111B** 1 (1982).

This entry only includes results from partial-wave analyses. Parameters of peaks seen in cross sections and invariant-mass distributions around 2030 MeV may be found in our 1984 edition, *Reviews of Modern Physics* **56** S1 (1984).

$\Sigma(2030)$ POLE POSITION

REAL PART

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|------------------------|------|-------------------------|
| 2010 to 2030 (\approx 2020) OUR ESTIMATE | | | |
| 2014 ± 6 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| 2025^{+10}_{-5} | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 1993 | ZHANG 13A | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.

−2×IMAGINARY PART

| VALUE (MeV) | DOCUMENT ID | TECN | COMMENT |
|---|------------------------|------|-------------------------|
| 130 to 190 (\approx 160) OUR ESTIMATE | | | |
| 172 ± 12 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| 130^{+6}_{-24} | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | |
| 176 | ZHANG 13A | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.

$\Sigma(2030)$ POLE RESIDUES

The normalized residue is the residue divided by $\Gamma_{pole}/2$.

Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow N\bar{K}$

| MODULUS | PHASE (°) | DOCUMENT ID | TECN | COMMENT |
|---|----------------|------------------------|------|-------------------------|
| 0.20 ± 0.04 | −38 ± 8 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 0.220 | −38 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.

Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Sigma\pi$

| MODULUS | PHASE (°) | DOCUMENT ID | TECN | COMMENT |
|---|-----------------|------------------------|------|-------------------------|
| 0.07 ± 0.02 | 165 ± 12 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 0.0807 | 135 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.

Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda\pi$

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|------------------------------------|------------------------|-------------|-------------------------|
| 0.18 \pm 0.04 | -22 \pm 12 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.138 | -24 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.**Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Xi K$**

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|------------------------------------|------------------------|-------------|-------------------------|
| 0.01 \pm 0.01 | | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.0348 | 129 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.**Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi$, *F*-wave**

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|------------------------------------|------------------------|-------------|-------------------------|
| 0.04 \pm 0.03 | | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.089 | -23 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.**Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi$, *H*-wave**

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|------------------------------------|------------------------|-------------|----------------|
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.0245 | 132 | ¹ KAMANO 15 | DPWA | Multichannel |

¹From the preferred solution A in KAMANO 15.**Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda(1520)\pi$, *D*-wave**

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-----------------------------------|------------------------------------|--------------------|-------------|-------------------------|
| 0.03 \pm 0.02 | -100 \pm 40 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |

Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda(1520)\pi$, *G*-wave

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-----------------------------------|------------------------------------|--------------------|-------------|-------------------------|
| 0.02 \pm 0.02 | | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |

Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Delta\bar{K}$, *F*-wave

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-----------------------------------|------------------------------------|--------------------|-------------|-------------------------|
| 0.16 \pm 0.06 | -130 \pm 20 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |

Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Delta\bar{K}$, *H*-wave

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-----------------------------------|------------------------------------|--------------------|-------------|-------------------------|
| 0.04 \pm 0.02 | -130 \pm 35 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |

Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow N\bar{K}^*(892)$, *S*=1/2, *F*-wave

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|------------------------------------|------------------------|-------------|-------------------------|
| 0.02 \pm 0.02 | | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| • • • We do not use the following data for averages, fits, limits, etc. • • • | | | | |
| 0.193 | 38 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.

Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow N\bar{K}^*(892)$, $S=3/2$, F -wave

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|-----------------------------------|------------------------------------|------------------------|-------------|---|
| 0.16 \pm 0.09 | -160 \pm 40 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| • • • | | | | We do not use the following data for averages, fits, limits, etc. • • • |
| 0.320 | 37 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |

¹From the preferred solution A in KAMANO 15.**Normalized residue in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow N\bar{K}^*(892)$, $S=3/2$, H -wave**

| <u>MODULUS</u> | <u>PHASE ($^\circ$)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|----------------|------------------------------------|------------------------|-------------|----------------|
| 0.00358 | 22 | ¹ KAMANO 15 | DPWA | Multichannel |

¹From the preferred solution A in KAMANO 15. **$\Sigma(2030)$ MASS**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--|------------------------|-------------|---|
| 2025 to 2040 (\approx 2030) OUR ESTIMATE | | | |
| 2032 \pm 6 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| 2030 \pm 5 | ZHANG 13A | DPWA | $\bar{K}N$ multichannel |
| 2036 \pm 5 | GOPAL 80 | DPWA | $\bar{K}N \rightarrow \bar{K}N$ |
| 2038 \pm 10 | CORDEN 77B | | $K^-N \rightarrow N\bar{K}^*$ |
| 2030 \pm 3 | ¹ CORDEN 76 | DPWA | $K^-n \rightarrow \Lambda\pi^-$ |
| 2035 \pm 15 | BAILLON 75 | IPWA | $\bar{K}N \rightarrow \Lambda\pi$ |
| 2038 \pm 10 | HEMINGWAY 75 | DPWA | $K^-p \rightarrow \bar{K}N$ |
| 2042 \pm 11 | VANHORN 75 | DPWA | $K^-p \rightarrow \Lambda\pi^0$ |
| 2020 \pm 6 | KANE 74 | DPWA | $K^-p \rightarrow \Sigma\pi$ |
| 2035 \pm 10 | LITCHFIELD 74B | DPWA | $K^-p \rightarrow \Lambda(1520)\pi^0$ |
| 2020 \pm 30 | LITCHFIELD 74C | DPWA | $K^-p \rightarrow \Delta(1232)\bar{K}$ |
| 2025 \pm 10 | LITCHFIELD 74D | DPWA | $K^-p \rightarrow \Lambda(1820)\pi^0$ |
| • • • | | | We do not use the following data for averages, fits, limits, etc. • • • |
| 2040 \pm 5 | GOPAL 77 | DPWA | $\bar{K}N$ multichannel |
| 2027 to 2057 | GOYAL 77 | DPWA | $K^-N \rightarrow \Sigma\pi$ |
| 2030 | DEBELLEFON 76 | IPWA | $K^-p \rightarrow \Lambda\pi^0$ |

¹Preferred solution 3; see CORDEN 76 for other possibilities. **$\Sigma(2030)$ WIDTH**

| <u>VALUE (MeV)</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|---|------------------------|-------------|-----------------------------------|
| 150 to 200 (\approx 180) OUR ESTIMATE | | | |
| 177 \pm 12 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
| 207 \pm 17 | ZHANG 13A | DPWA | $\bar{K}N$ multichannel |
| 172 \pm 10 | GOPAL 80 | DPWA | $\bar{K}N \rightarrow \bar{K}N$ |
| 137 \pm 40 | CORDEN 77B | | $K^-N \rightarrow N\bar{K}^*$ |
| 201 \pm 9 | ¹ CORDEN 76 | DPWA | $K^-n \rightarrow \Lambda\pi^-$ |
| 180 \pm 20 | BAILLON 75 | IPWA | $\bar{K}N \rightarrow \Lambda\pi$ |
| 172 \pm 15 | HEMINGWAY 75 | DPWA | $K^-p \rightarrow \bar{K}N$ |
| 178 \pm 13 | VANHORN 75 | DPWA | $K^-p \rightarrow \Lambda\pi^0$ |
| 111 \pm 5 | KANE 74 | DPWA | $K^-p \rightarrow \Sigma\pi$ |

| | | | | |
|---|------------|-----|------|---|
| 160±20 | LITCHFIELD | 74B | DPWA | $K^- p \rightarrow \Lambda(1520)\pi^0$ |
| 200±30 | LITCHFIELD | 74C | DPWA | $K^- p \rightarrow \Delta(1232)\bar{K}$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 260 | DECLAIS | 77 | DPWA | $\bar{K}N \rightarrow \bar{K}N$ |
| 190±10 | GOPAL | 77 | DPWA | $\bar{K}N$ multichannel |
| 126 to 195 | GOYAL | 77 | DPWA | $K^- N \rightarrow \Sigma\pi$ |
| 160 | DEBELLEFON | 76 | IPWA | $K^- p \rightarrow \Lambda\pi^0$ |
| 70 to 125 | LITCHFIELD | 74D | DPWA | $K^- p \rightarrow \Lambda(1820)\pi^0$ |

¹ Preferred solution 3; see CORDEN 76 for other possibilities.

Σ(2030) DECAY MODES

| Mode | Fraction (Γ_i/Γ) |
|---|--------------------------------|
| Γ_1 $N\bar{K}$ | 17–23 % |
| Γ_2 $\Lambda\pi$ | 17–23 % |
| Γ_3 $\Sigma\pi$ | 5–10 % |
| Γ_4 ΞK | <2 % |
| Γ_5 $\Sigma(1385)\pi$ | 5–15 % |
| Γ_6 $\Sigma(1385)\pi$, <i>F</i> -wave | (1.0±1.0) % |
| Γ_7 $\Sigma(1385)\pi$, <i>H</i> -wave | |
| Γ_8 $\Lambda(1520)\pi$ | 10–20 % |
| Γ_9 $\Lambda(1520)\pi$, <i>D</i> -wave | |
| Γ_{10} $\Lambda(1520)\pi$, <i>G</i> -wave | |
| Γ_{11} $\Delta(1232)\bar{K}$ | 10–20 % |
| Γ_{12} $\Delta(1232)\bar{K}$, <i>F</i> -wave | (15 ± 5) % |
| Γ_{13} $\Delta(1232)\bar{K}$, <i>H</i> -wave | (1.0±1.0) % |
| Γ_{14} $N\bar{K}^*(892)$ | |
| Γ_{15} $N\bar{K}^*(892)$, <i>S</i> =1/2, <i>F</i> -wave | |
| Γ_{16} $N\bar{K}^*(892)$, <i>S</i> =3/2, <i>F</i> -wave | (14 ± 8) % |
| Γ_{17} $N\bar{K}^*(892)$, <i>S</i> =3/2, <i>H</i> -wave | |
| Γ_{18} $\Lambda(1820)\pi$, <i>P</i> -wave | |

Σ(2030) BRANCHING RATIOS

See “Sign conventions for resonance couplings” in the Note on Λ and Σ Resonances.

| $\Gamma(N\bar{K})/\Gamma_{\text{total}}$ | | | | Γ_1/Γ |
|---|---------------------|-------------|----------------|---------------------------------|
| <i>VALUE</i> | <i>DOCUMENT ID</i> | <i>TECN</i> | <i>COMMENT</i> | |
| 0.17 to 0.23 OUR ESTIMATE | | | | |
| 0.20 ±0.04 | SARANTSEV | 19 | DPWA | $\bar{K}N$ multichannel |
| 0.13 ±0.01 | ZHANG | 13A | DPWA | $\bar{K}N$ multichannel |
| 0.19 ±0.03 | GOPAL | 80 | DPWA | $\bar{K}N \rightarrow \bar{K}N$ |
| 0.18 ±0.03 | HEMINGWAY | 75 | DPWA | $K^- p \rightarrow \bar{K}N$ |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | |
| 0.269 | ¹ KAMANO | 15 | DPWA | Multichannel |
| 0.15 | DECLAIS | 77 | DPWA | $\bar{K}N \rightarrow \bar{K}N$ |

0.24 ±0.02 GOPAL 77 DPWA See GOPAL 80

¹From the preferred solution A in KAMANO 15.

$\Gamma(\Lambda\pi)/\Gamma_{\text{total}}$ **Γ_2/Γ**

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

| | | | |
|-------------------|--------------|------|-------------------------|
| 0.17 ±0.04 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
|-------------------|--------------|------|-------------------------|

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

| | | | |
|-------|------------------------|------|-------------------------|
| 0.080 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |
|-------|------------------------|------|-------------------------|

¹From the preferred solution A in KAMANO 15.

$\Gamma(\Sigma\pi)/\Gamma_{\text{total}}$ **Γ_3/Γ**

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

| | | | |
|--------------------|--------------|------|-------------------------|
| 0.025±0.008 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
|--------------------|--------------|------|-------------------------|

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

| | | | |
|-------|------------------------|------|-------------------------|
| 0.037 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |
|-------|------------------------|------|-------------------------|

¹From the preferred solution A in KAMANO 15.

$\Gamma(\Xi K)/\Gamma_{\text{total}}$ **Γ_4/Γ**

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

| | | | |
|-------|--------------|------|-------------------------|
| <0.01 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
|-------|--------------|------|-------------------------|

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

| | | | |
|-------|------------------------|------|-------------------------|
| 0.006 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |
|-------|------------------------|------|-------------------------|

¹From the preferred solution A in KAMANO 15.

$\Gamma(\Lambda(1520)\pi, D\text{-wave})/\Gamma_{\text{total}}$ **Γ_9/Γ**

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

| | | | |
|--------|--------------|------|-------------------------|
| ~ 0.01 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
|--------|--------------|------|-------------------------|

$\Gamma(\Lambda(1520)\pi, G\text{-wave})/\Gamma_{\text{total}}$ **Γ_{10}/Γ**

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

| | | | |
|-------|--------------|------|-------------------------|
| <0.01 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
|-------|--------------|------|-------------------------|

$\Gamma(\Sigma(1385)\pi, F\text{-wave})/\Gamma_{\text{total}}$ **Γ_6/Γ**

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

| | | | |
|-------------------|--------------|------|-------------------------|
| 0.01 ±0.01 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
|-------------------|--------------|------|-------------------------|

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

| | | | |
|-------|------------------------|------|-------------------------|
| 0.030 | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |
|-------|------------------------|------|-------------------------|

¹From the preferred solution A in KAMANO 15.

$\Gamma(\Sigma(1385)\pi, H\text{-wave})/\Gamma_{\text{total}}$ **Γ_7/Γ**

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

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

| | | | |
|-------|------------------------|------|--------------|
| 0.003 | ¹ KAMANO 15 | DPWA | Multichannel |
|-------|------------------------|------|--------------|

¹From the preferred solution A in KAMANO 15.

$\Gamma(\Delta(1232)\bar{K}, F\text{-wave})/\Gamma_{\text{total}}$ **Γ_{12}/Γ**

| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> |
|--------------|--------------------|-------------|----------------|
|--------------|--------------------|-------------|----------------|

| | | | |
|------------------|--------------|------|-------------------------|
| 0.15±0.05 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |
|------------------|--------------|------|-------------------------|

$\Gamma(\Delta(1232)\bar{K}, H\text{-wave})/\Gamma_{\text{total}}$ Γ_{13}/Γ

| VALUE | DOCUMENT ID | TECN | COMMENT |
|------------------|--------------|------|-------------------------|
| 0.01±0.01 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |

 $\Gamma(N\bar{K}^*(892), S=1/2, F\text{-wave})/\Gamma_{\text{total}}$ Γ_{15}/Γ

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------|--------------|------|-------------------------|
| <0.01 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |

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

0.154 ¹ KAMANO 15 DPWA $\bar{K}N$ multichannel

¹ From the preferred solution A in KAMANO 15.

 $\Gamma(N\bar{K}^*(892), S=3/2, F\text{-wave})/\Gamma_{\text{total}}$ Γ_{16}/Γ

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------------------|--------------|------|-------------------------|
| 0.14 ±0.08 | SARANTSEV 19 | DPWA | $\bar{K}N$ multichannel |

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

0.422 ¹ KAMANO 15 DPWA $\bar{K}N$ multichannel

¹ From the preferred solution A in KAMANO 15.

 $\Gamma(N\bar{K}^*(892), S=3/2, H\text{-wave})/\Gamma_{\text{total}}$ Γ_{17}/Γ

| VALUE | DOCUMENT ID | TECN | COMMENT |
|----------|------------------------|------|-------------------------|
| not seen | ¹ KAMANO 15 | DPWA | $\bar{K}N$ multichannel |

¹ From the preferred solution A in KAMANO 15.

 $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda\pi$ $(\Gamma_1\Gamma_2)^{1/2}/\Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|--------------|------------------------|------|-----------------------------------|
| +0.15 ±0.01 | ZHANG 13A | DPWA | Multichannel |
| +0.18 ±0.02 | GOPAL 77 | DPWA | $\bar{K}N$ multichannel |
| +0.20 ±0.01 | ¹ CORDEN 76 | DPWA | $K^- n \rightarrow \Lambda\pi^-$ |
| +0.18 ±0.02 | BAILLON 75 | IPWA | $\bar{K}N \rightarrow \Lambda\pi$ |
| +0.20 ±0.01 | VANHORN 75 | DPWA | $K^- p \rightarrow \Lambda\pi^0$ |
| +0.195±0.053 | DEVENISH 74B | | Fixed- t dispersion rel. |

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

0.20 DEBELLEFON 76 IPWA $K^- p \rightarrow \Lambda\pi^0$

¹ Preferred solution 3; see CORDEN 76 for other possibilities.

 $(\Gamma_i\Gamma_f)^{1/2}/\Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Sigma\pi$ $(\Gamma_1\Gamma_3)^{1/2}/\Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------------------|------|-------------------------------|
| -0.08 ±0.01 | ZHANG 13A | DPWA | Multichannel |
| -0.09 ±0.01 | ¹ CORDEN 77C | | $K^- n \rightarrow \Sigma\pi$ |
| -0.06 ±0.01 | ¹ CORDEN 77C | | $K^- n \rightarrow \Sigma\pi$ |
| -0.15 ±0.03 | GOPAL 77 | DPWA | $\bar{K}N$ multichannel |
| -0.10 ±0.01 | KANE 74 | DPWA | $K^- p \rightarrow \Sigma\pi$ |

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

-0.085±0.02 ² GOYAL 77 DPWA $K^- N \rightarrow \Sigma\pi$

¹ The two entries for CORDEN 77C are from two different acceptable solutions.

² This coupling is extracted from unnormalized data.

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Xi K$ $(\Gamma_1 \Gamma_4)^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------|-------------|------|--------------------------------|
| 0.023 | MULLER | 69B | DPWA $K^- p \rightarrow \Xi K$ |
| <0.05 | BURGUN | 68 | DPWA $K^- p \rightarrow \Xi K$ |
| <0.05 | TRIPP | 67 | RVUE $K^- p \rightarrow \Xi K$ |

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi$, **F-wave** $(\Gamma_1 \Gamma_6)^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|----------------|----------------------|------|--|
| +0.16 ± 0.01 | ZHANG | 13A | DPWA Multichannel |
| +0.153 ± 0.026 | ¹ CAMERON | 78 | DPWA $K^- p \rightarrow \Sigma(1385)\pi$ |

¹ The published sign has been changed to be in accord with the baryon-first convention.

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda(1520)\pi$, **D-wave** $(\Gamma_1 \Gamma_9)^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|----------------|----------------------|------|---|
| +0.114 ± 0.010 | ¹ CAMERON | 77 | DPWA $K^- p \rightarrow \Lambda(1520)\pi^0$ |
| 0.14 ± 0.03 | LITCHFIELD | 74B | DPWA $K^- p \rightarrow \Lambda(1520)\pi^0$ |

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

0.10 ± 0.03 ² CORDEN 75B DBC $K^- n \rightarrow N\bar{K}\pi^-$

¹ The published sign has been changed to be in accord with the baryon-first convention.

² An upper limit.

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda(1520)\pi$, **G-wave** $(\Gamma_1 \Gamma_{10})^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|----------------|----------------------|------|---|
| +0.146 ± 0.010 | ¹ CAMERON | 77 | DPWA $K^- p \rightarrow \Lambda(1520)\pi^0$ |
| 0.02 ± 0.02 | LITCHFIELD | 74B | DPWA $K^- p \rightarrow \Lambda(1520)\pi^0$ |

¹ The published sign has been changed to be in accord with the baryon-first convention.

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Delta(1232)\bar{K}$, **F-wave** $(\Gamma_1 \Gamma_{12})^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|--------------|-------------|------|--|
| +0.12 ± 0.02 | ZHANG | 13A | DPWA Multichannel |
| 0.16 ± 0.03 | LITCHFIELD | 74C | DPWA $K^- p \rightarrow \Delta(1232)\bar{K}$ |

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

0.17 ± 0.03 ¹ CORDEN 75B DBC $K^- n \rightarrow N\bar{K}\pi^-$

¹ An upper limit.

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Delta(1232)\bar{K}$, **H-wave** $(\Gamma_1 \Gamma_{13})^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-------------|-------------|------|--|
| 0.00 ± 0.02 | LITCHFIELD | 74C | DPWA $K^- p \rightarrow \Delta(1232)\bar{K}$ |

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow N\bar{K}^*(892)$, **S=1/2, F-wave** $(\Gamma_1 \Gamma_{15})^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|--------------|----------------------|------|-------------------------------------|
| +0.06 ± 0.02 | ZHANG | 13A | DPWA Multichannel |
| +0.06 ± 0.03 | ¹ CAMERON | 78B | DPWA $K^- p \rightarrow N\bar{K}^*$ |
| -0.02 ± 0.01 | CORDEN | 77B | $K^- d \rightarrow NN\bar{K}^*$ |

¹ The published sign has been changed to be in accord with the baryon-first convention.

$(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow N\bar{K}^*(892)$, $S=3/2$, F -wave $(\Gamma_1 \Gamma_{16})^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|------------------|----------------------|------|-------------------------------------|
| $+0.05 \pm 0.01$ | ZHANG | 13A | DPWA Multichannel |
| $+0.04 \pm 0.03$ | ¹ CAMERON | 78B | DPWA $K^- p \rightarrow N\bar{K}^*$ |
| -0.12 ± 0.02 | CORDEN | 77B | $K^- d \rightarrow NN\bar{K}^*$ |

¹ The upper limit on the G_3 wave is 0.03. $(\Gamma_i \Gamma_f)^{1/2} / \Gamma_{\text{total}}$ in $N\bar{K} \rightarrow \Sigma(2030) \rightarrow \Lambda(1820)\pi$, P -wave $(\Gamma_1 \Gamma_{18})^{1/2} / \Gamma$

| VALUE | DOCUMENT ID | TECN | COMMENT |
|-----------------|-------------|------|---|
| 0.14 ± 0.02 | CORDEN | 75B | DBC $K^- n \rightarrow N\bar{K}\pi^-$ |
| 0.18 ± 0.04 | LITCHFIELD | 74D | DPWA $K^- p \rightarrow \Lambda(1820)\pi^0$ |

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