

K₄^{*}(2045)

$$I(J^P) = \frac{1}{2}(4^+)$$

K₄^{*}(2045) MASS

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | CHG | COMMENT |
|---|------|-------------------------------------|----------|-----|---|
| 2045 ± 9 OUR AVERAGE | | Error includes scale factor of 1.1. | | | |
| 2062 ± 14 ± 13 | | ¹ ASTON | 86 LASS | 0 | 11 K ⁻ p → K ⁻ π ⁺ n |
| 2039 ± 10 | 400 | ^{2,3} CLELAND | 82 SPEC | ± | 50 K ⁺ p → K _S ⁰ π [±] p |
| 2070 ⁺¹⁰⁰ ₋₄₀ | | ⁴ ASTON | 81c LASS | 0 | 11 K ⁻ p → K ⁻ π ⁺ n |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | | |
| 2079 ± 7 | 431 | TORRES | 86 MPSF | | 400 pA → 4KX |
| 2088 ± 20 | 650 | BAUBILLIER | 82 HBC | - | 8.25 K ⁻ p → K _S ⁰ π ⁻ p |
| 2115 ± 46 | 488 | CARMONY | 77 HBC | 0 | 9 K ⁺ d → K ⁺ π's X |

¹ From a fit to all moments.
² From a fit to 8 moments.
³ Number of events evaluated by us.
⁴ From energy-independent partial-wave analysis.

K₄^{*}(2045) WIDTH

| VALUE (MeV) | EVTS | DOCUMENT ID | TECN | CHG | COMMENT |
|---|------|------------------------|----------|-----|---|
| 198 ± 30 OUR AVERAGE | | | | | |
| 221 ± 48 ± 27 | | ⁵ ASTON | 86 LASS | 0 | 11 K ⁻ p → K ⁻ π ⁺ n |
| 189 ± 35 | 400 | ^{6,7} CLELAND | 82 SPEC | ± | 50 K ⁺ p → K _S ⁰ π [±] p |
| ● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ● | | | | | |
| 61 ± 58 | 431 | TORRES | 86 MPSF | | 400 pA → 4KX |
| 170 ⁺¹⁰⁰ ₋₅₀ | 650 | BAUBILLIER | 82 HBC | - | 8.25 K ⁻ p → K _S ⁰ π ⁻ p |
| 240 ⁺⁵⁰⁰ ₋₁₀₀ | | ⁸ ASTON | 81c LASS | 0 | 11 K ⁻ p → K ⁻ π ⁺ n |
| 300 ± 200 | | CARMONY | 77 HBC | 0 | 9 K ⁺ d → K ⁺ π's X |

⁵ From a fit to all moments.
⁶ From a fit to 8 moments.
⁷ Number of events evaluated by us.
⁸ From energy-independent partial-wave analysis.

K₄^{*}(2045) DECAY MODES

| Mode | Fraction (Γ _i /Γ) |
|--|------------------------------|
| Γ ₁ Kπ | (9.9 ± 1.2) % |
| Γ ₂ K [*] (892)ππ | (9 ± 5) % |
| Γ ₃ K [*] (892)πππ | (7 ± 5) % |

| | | |
|------------|-----------------|--------------------|
| Γ_4 | $\rho K \pi$ | $(5.7 \pm 3.2) \%$ |
| Γ_5 | $\omega K \pi$ | $(5.0 \pm 3.0) \%$ |
| Γ_6 | $\phi K \pi$ | $(2.8 \pm 1.4) \%$ |
| Γ_7 | $\phi K^*(892)$ | $(1.4 \pm 0.7) \%$ |

$K_4^*(2045)$ BRANCHING RATIOS

| | | | | | |
|--------------------------------------|--------------------|-------------|------------|----------------|------------------------------------|
| $\Gamma(K\pi)/\Gamma_{\text{total}}$ | | | | | Γ_1/Γ |
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u> | |
| 0.099 ± 0.012 | ASTON | 88 | LASS | 0 | 11 $K^- p \rightarrow K^- \pi^+ n$ |

| | | | | | |
|---------------------------------------|--------------------|-------------|------------|----------------|---------------------------------------|
| $\Gamma(K^*(892)\pi\pi)/\Gamma(K\pi)$ | | | | | Γ_2/Γ_1 |
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u> | |
| 0.89 ± 0.53 | BAUBILLIER | 82 | HBC | — | 8.25 $K^- p \rightarrow p K_S^0 3\pi$ |

| | | | | | |
|--|--------------------|-------------|------------|----------------|---------------------------------------|
| $\Gamma(K^*(892)\pi\pi\pi)/\Gamma(K\pi)$ | | | | | Γ_3/Γ_1 |
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u> | |
| 0.75 ± 0.49 | BAUBILLIER | 82 | HBC | — | 8.25 $K^- p \rightarrow p K_S^0 3\pi$ |

| | | | | | |
|----------------------------------|--------------------|-------------|------------|----------------|---------------------------------------|
| $\Gamma(\rho K\pi)/\Gamma(K\pi)$ | | | | | Γ_4/Γ_1 |
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u> | |
| 0.58 ± 0.32 | BAUBILLIER | 82 | HBC | — | 8.25 $K^- p \rightarrow p K_S^0 3\pi$ |

| | | | | | |
|------------------------------------|--------------------|-------------|------------|----------------|---------------------------------------|
| $\Gamma(\omega K\pi)/\Gamma(K\pi)$ | | | | | Γ_5/Γ_1 |
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>CHG</u> | <u>COMMENT</u> | |
| 0.50 ± 0.30 | BAUBILLIER | 82 | HBC | — | 8.25 $K^- p \rightarrow p K_S^0 3\pi$ |

| | | | | | |
|---|---------------------|-------------|----------------|--------------------------|-------------------|
| $\Gamma(\phi K\pi)/\Gamma_{\text{total}}$ | | | | | Γ_6/Γ |
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | | |
| 0.028 ± 0.014 | ⁹ TORRES | 86 | MPSF | 400 $pA \rightarrow 4KX$ | |

| | | | | | |
|---|---------------------|-------------|----------------|--------------------------|-------------------|
| $\Gamma(\phi K^*(892))/\Gamma_{\text{total}}$ | | | | | Γ_7/Γ |
| <u>VALUE</u> | <u>DOCUMENT ID</u> | <u>TECN</u> | <u>COMMENT</u> | | |
| 0.014 ± 0.007 | ⁹ TORRES | 86 | MPSF | 400 $pA \rightarrow 4KX$ | |

⁹ Error determination is model dependent.

$K_4^*(2045)$ REFERENCES

| | | | | |
|------------|-----|-------------|-----------------------------|--------------------------|
| ASTON | 88 | NP B296 493 | D. Aston <i>et al.</i> | (SLAC, NAGO, CINC, INUS) |
| ASTON | 86 | PL B180 308 | D. Aston <i>et al.</i> | (SLAC, NAGO, CINC, INUS) |
| TORRES | 86 | PR 34 707 | S. Torres <i>et al.</i> | (VPI, ARIZ, FNAL, FSU+) |
| BAUBILLIER | 82 | PL 118B 447 | M. Baubillier <i>et al.</i> | (BIRM, CERN, GLAS+) |
| CLELAND | 82 | NP B208 189 | W.E. Cleland <i>et al.</i> | (DURH, GEVA, LAUS+) |
| ASTON | 81C | PL 106B 235 | D. Aston <i>et al.</i> | (SLAC, CARL, OTTA) JP |
| CARMONY | 77 | PR D16 1251 | D.D. Carmony <i>et al.</i> | (PURD, UCD, IUPU) |

OTHER RELATED PAPERS

| | | | | |
|----------|----|-------------|-----------------------------|--------------------------|
| ASTON | 87 | NP B292 693 | D. Aston <i>et al.</i> | (SLAC, NAGO, CINC, INUS) |
| BROMBERG | 80 | PR D22 1513 | C.M. Bromberg <i>et al.</i> | (CIT, FNAL, ILLC+) |
| CARMONY | 71 | PRL 27 1160 | D.D. Carmony <i>et al.</i> | (PURD, UCD, IUPU) |