$$\Sigma(2030) 7/2^+$$

 $I(J^P) = 1(\frac{7}{2}^+)$  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

	DOCUMENT ID		TECN	COMMENT	
2010 to 2030 (~ 2020) OUR ESTI	MATE		TECN	COMMENT	
$2014\pm 6$	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel	
$2025 + 10 \\ - 5$	<sup>1</sup> KAMANO	15	DPWA	$\overline{K}N$ multichannel	-
• • • We do not use the following	data for averages	, fits,	limits, e	tc. • • •	
1993	ZHANG	13A	DPWA	<b><i>K</i></b> <i>N</i> multichannel	
$^1$ From the preferred solution A in	n KAMANO 15.				
-2×IMAGINARY PART					
VALUE (MeV)	DOCUMENT ID		TECN	COMMENT	
130 to 190 ( $\approx$ 160) OUR ESTIMATION	ΓE				
$172 \pm 12$	SARANTSEV	19	DPWA	<b>K</b> N multichannel	
$130^{+6}_{-24}$	<sup>1</sup> KAMANO	15	DPWA	$\overline{K}N$ multichannel	
$\bullet$ $\bullet$ $\bullet$ We do not use the following	data for averages	, fits,	limits, e	tc. ● ● ●	
176	ZHANG	13A	DPWA	$\overline{K}N$ multichannel	
$^1$ From the preferred solution A in	n KAMANO 15.				

### $\Sigma(2030)$ POLE RESIDUES

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

Normalized	residue in NF	$\overline{C} \rightarrow \Sigma(2030) \rightarrow N\overline{K}$	
MODULUS	PHASE (° )	DOCUMENT ID	TECN COMMENT
0.20 ±0.04	$-38 \pm 8$	SARANTSEV 19	DPWA $\overline{K}N$ multichannel
• • • We do r	not use the follo	wing data for averages, fits, li	imits, etc. • • •
0.220	- 38	<sup>1</sup> KAMANO 15	DPWA $\overline{K}N$ multichannel
<sup>1</sup> From the <sub>1</sub>	preferred solutio	n A in KAMANO 15.	

	residue in <i>IN</i> A -	$\rightarrow \lambda(2030) \rightarrow \lambda \pi$
MODULUS	<i>PHASE (</i> °)	DOCUMENT ID TECN COMMENT
0.07 ±0.02	<b>165</b> ± 12	SARANTSEV 19 DPWA $\overline{K}N$ multichann
• • • We do	not use the following	ng data for averages, fits, limits, etc. 🔹 🔹
0.0807	135	<sup>1</sup> KAMANO 15 DPWA $\overline{K}N$ multichann
$^1$ From the	preferred solution A	A in KAMANO 15.
Normalized	residue in $N\overline{K}$ -	$\rightarrow \Sigma(2030) \rightarrow \Lambda \pi$
MODULUS	PHASE (° )	DOCUMENT ID TECN COMMENT
0.18 ±0.04	$-22 \pm 12$	SARANTSEV 19 DPWA $\overline{K}N$ multichann
• • • We do	not use the following	ng data for averages, fits, limits, etc. • • •
0.138	-24	<sup>1</sup> KAMANO 15 DPWA $\overline{K}N$ multichann
<sup>1</sup> From the	preferred solution A	A in KAMANO 15.
Normalized	residue in $N\overline{K}$ -	$\rightarrow \Sigma(2030) \rightarrow \Xi K$
MODULUS	<i>РНАЅЕ (</i> °)	DOCUMENT ID TECN COMMENT
0.01 ±0.01		SARANTSEV 19 DPWA $\overline{K}N$ multichann
• • • We do	not use the following	ng data for averages, fits, limits, etc. $ullet$ $ullet$
0.0348	129	<sup>1</sup> KAMANO 15 DPWA $\overline{K}N$ multichann
<sup>1</sup> From the	preferred solution A	A in KAMANO 15.
Normalized	residue in $N\overline{K}$ -	$ ightarrow ~ m{\Sigma}(2030)  ightarrow ~ m{\Sigma}(1385) \pi$ , F-wave
MODULUS	<i>PHASE (</i> <sup>◦</sup> <i>)</i>	DOCUMENT ID TECN COMMENT
$0.04 \pm 0.03$		SARANTSEV 19 DPWA $\overline{K}N$ multichann
• • • We do	not use the following	ng data for averages, fits, limits, etc. • • •
0.089	-23	<sup>1</sup> KAMANO 15 DPWA $\overline{K}N$ multichann
1		
- From the	preferred solution A	A IN KAMANO 15.
Normalized	preferred solution $A$ residue in $N\overline{K}$ -	$\rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi, H-wave$
Normalized	preferred solution A residue in NK - PHASE (°)	$\rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi, H-wave$ $\frac{DOCUMENT ID}{15} \xrightarrow{TECN} COMMENT$
• • • We do	preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> not use the following	$\rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi, H-wave$ $\underline{DOCUMENT ID} \qquad \underline{TECN} \qquad \underline{COMMENT}$ ng data for averages, fits, limits, etc. •••
• • • We do	preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> not use the followin 132	$\rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi, H-wave$ $\xrightarrow{DOCUMENT ID} \xrightarrow{TECN} COMMENT$ ng data for averages, fits, limits, etc. ••• $^{1}$ KAMANO 15 DPWA Multichannel
• • • We do 0.0245 1 From the	residue in NK - <u>PHASE (°)</u> not use the followin 132 preferred solution A	$\rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi, H-wave$ $\xrightarrow{DOCUMENT ID} \xrightarrow{TECN} COMMENT$ ng data for averages, fits, limits, etc. ••• $^{1}$ KAMANO 15 DPWA Multichannel A in KAMANO 15.
• • • We do 0.0245 1 From the	residue in NK - <u>PHASE (°)</u> not use the followin 132 preferred solution A residue in NK -	$\rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi, H-wave$ $\xrightarrow{DOCUMENT ID} \xrightarrow{TECN} COMMENT$ ng data for averages, fits, limits, etc. • • • $^{1}$ KAMANO 15 DPWA Multichannel A in KAMANO 15. $\rightarrow \Sigma(2030) \rightarrow \Lambda(1520)\pi, D-wave$
• • • We do 0.0245 1 From the Normalized MODULUS	preferred solution A residue in NK - <u>PHASE (°)</u> not use the followin 132 preferred solution A residue in NK - <u>PHASE (°)</u>	$ \begin{array}{c} \rightarrow  \Sigma(2030) \rightarrow  \Sigma(1385)\pi, \ H\text{-wave} \\ \underline{DOCUMENT \ ID} \\ \text{mg data for averages, fits, limits, etc. } \bullet \bullet \\ 1 \\ \text{KAMANO} \\ 15 \\ \text{DPWA Multichannel} \\ \text{A in KAMANO} \\ 15. \\ \begin{array}{c} \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ D\text{-wave} \\ \underline{DOCUMENT \ ID} \\ \end{array} $
Normalized MODULUS • • • We do 0.0245 <sup>1</sup> From the Normalized MODULUS 0.03±0.02	preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> not use the followin 132 preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> -100 ± 40	$ \begin{array}{c} \rightarrow  \Sigma(2030) \rightarrow  \Sigma(1385)\pi, \ H\text{-wave} \\ \underline{DOCUMENT \ ID} \\ \text{ng data for averages, fits, limits, etc. } \bullet \bullet \bullet \\ \hline 1 \ \text{KAMANO} \\ 15 \ \text{DPWA Multichannel} \\ \text{A in KAMANO 15.} \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ D\text{-wave} \\ \underline{DOCUMENT \ ID} \\ \text{SARANTSEV 19} \ \hline D\text{PWA} \ \overline{K} \ N \ \text{multichannel} \\ \end{array} $
• From the Normalized <u>MODULUS</u> • • • We do 0.0245 <sup>1</sup> From the Normalized <u>MODULUS</u> 0.03±0.02 Normalized	preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> not use the followin 132 preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> -100 ± 40 residue in $N\overline{K}$ -	$ \begin{array}{c} \rightarrow  \Sigma(2030) \rightarrow  \Sigma(1385)\pi, \ H\text{-wave} \\ \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ \text{ng data for averages, fits, limits, etc. } \bullet \bullet \bullet \\ & ^{1}\text{KAMANO} & 15 & DPWA \ Multichannel \\ \text{A in KAMANO} & 15. \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ D\text{-wave} \\ & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ & \text{SARANTSEV} & 19 & DPWA & \overline{K} \ N \ multichannel \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ G\text{-wave} \\ \hline \end{array} $
Normalized MODULUS • • • We do 0.0245 <sup>1</sup> From the Normalized MODULUS 0.03±0.02 Normalized MODULUS	preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> not use the followin 132 preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> <b>-100 ± 40</b> residue in $N\overline{K}$ - <u>PHASE (°)</u>	$ \begin{array}{c} \rightarrow  \Sigma(2030) \rightarrow  \Sigma(1385)\pi, \ H\text{-wave} \\ \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ \text{ng data for averages, fits, limits, etc. } \bullet \bullet \bullet \\ & ^{1}\text{KAMANO} & 15 & DPWA \ Multichannel \\ \text{A in KAMANO} & 15. \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ D\text{-wave} \\ & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ & \text{SARANTSEV} & 19 & DPWA & \overline{K} \ N \ multichannel \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ G\text{-wave} \\ & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ G\text{-wave} \\ & \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ \hline \end{array} $
Normalized MODULUS • • • We do 0.0245 <sup>1</sup> From the Normalized MODULUS 0.03±0.02 Normalized MODULUS 0.02±0.02	preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> not use the followin 132 preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> -100 ± 40 residue in $N\overline{K}$ - <u>PHASE (°)</u>	$ \rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi, H-wave \\ \underline{DOCUMENT ID} \\ \underline{TECN} \\ \underline{COMMENT ID} \\ \underline{COMMENT ID} \\ \underline{TECN} \\ \underline{COMMENT ID} \\ \underline{COMENT ID} \\ COMENT $
Normalized <u>MODULUS</u> • • • We do 0.0245 <sup>1</sup> From the Normalized <u>MODULUS</u> 0.03±0.02 Normalized <u>MODULUS</u> 0.02±0.02 Normalized	preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> not use the followin 132 preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> -100 ± 40 residue in $N\overline{K}$ - <u>PHASE (°)</u> residue in $N\overline{K}$ -	$ \begin{array}{c} \rightarrow  \Sigma(2030) \rightarrow  \Sigma(1385)\pi, \ H\text{-wave} \\ \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ \text{ng data for averages, fits, limits, etc. } \bullet \bullet \bullet \\ \ ^{1} \text{KAMANO} & 15 & DPWA \ Multichannel \\ \text{A in KAMANO} & 15 & DPWA \ Multichannel \\ \text{A in KAMANO} & 15. \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ D\text{-wave} \\ \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ \text{SARANTSEV} & 19 & DPWA \ \overline{K} \ N \ multichannel \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ G\text{-wave} \\ \underline{DOCUMENT \ ID} & \underline{TECN} & \underline{COMMENT} \\ \text{SARANTSEV} & 19 & DPWA \ \overline{K} \ N \ multichannel \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Lambda(1520)\pi, \ \overline{K} \ N \ multichannel \\ \hline \rightarrow  \Sigma(2030) \rightarrow  \Delta \overline{K}, \ F\text{-wave} \\ \hline \end{array} $
Normalized MODULUS • • • We do 0.0245 <sup>1</sup> From the Normalized MODULUS 0.03±0.02 Normalized MODULUS 0.02±0.02 Normalized MODULUS	preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> not use the followin 132 preferred solution $A$ residue in $N\overline{K}$ - <u>PHASE (°)</u> <b>residue in <math>N\overline{K}</math></b> - <u>PHASE (°)</u> residue in $N\overline{K}$ - <u>PHASE (°)</u>	$ \rightarrow \Sigma(2030) \rightarrow \Sigma(1385)\pi, H-wave \\ \underline{DOCUMENT ID} \\ \underline{TECN} \\ \underline{COMMENT ID} \\ \underline{COMMENT ID} \\ \underline{TECN} \\ \underline{COMMENT ID} \\ \underline{COMENT ID} \\ \underline{COMMENT ID} \\ \underline{COMENT ID} \\ COME$

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Normalized	residue in N <del>K</del> -	$\rightarrow \Sigma(2030) \rightarrow \Delta \overline{K}$	, <i>H</i> -wave
MODULUS	PHASE (° )	DOCUMENT ID	TECN COMMENT
0.04±0.02	$-130 \pm 35$	SARANTSEV 19	DPWA $\overline{K}N$ multichannel
Normalized	residue in $N\overline{K}$ -	$\rightarrow \Sigma(2030) \rightarrow N\overline{K}$	*(892), <i>S</i> =1/2 , <i>F</i> -wave
MODULUS	PHASE (° )	DOCUMENT ID	
0.02 ±0.02		SARANTSEV 19	DPWA $\overline{K}N$ multichannel
• • • We do i	not use the following	ng data for averages, fits,	limits, etc. • • •
0.193	38	<sup>1</sup> KAMANO 15	DPWA $\overline{K}N$ multichannel
$^1$ From the (	preferred solution A	A in KAMANO 15.	
Normalized	residue in $N\overline{K}$ -	$\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{2}$	*(892), <i>S</i> =3/2 , <i>F</i> -wave
MODULUS	PHASE (° )	DOCUMENT ID	TECN COMMENT
0.16 ±0.09	$-160 \pm 40$	SARANTSEV 19	DPWA $\overline{K}N$ multichannel
• • • We do i	not use the following	ng data for averages, fits,	limits, etc. • • •
0.320	37	<sup>1</sup> KAMANO 15	DPWA $\overline{K}N$ multichannel
$^1$ From the <sub>l</sub>	preferred solution A	A in KAMANO 15.	
Normalized	residue in $N\overline{K}$ -	$\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{3}$	*(892), <i>S</i> =3/2 , <i>H</i> -wave
MODULUS	PHASE (° )	DOCUMENT ID	TECN COMMENT
• • • We do i	not use the followir	ng data for averages, fits,	limits, etc. • • •
0.00358	22	<sup>1</sup> KAMANO 15	DPWA Multichannel
<sup>1</sup> From the <sub>1</sub>	preferred solution A	A in KAMANO 15.	

# Σ(2030) MASS

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

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
150 to 200 ( $\approx$ 180) OUR ESTIMAT	E			
$177 \pm 12$	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel
207±17	ZHANG	13A	DPWA	<i>KN</i> multichannel
$172 \pm 10$	GOPAL	80	DPWA	$\overline{K}N \rightarrow \overline{K}N$
137±40	CORDEN	<b>77</b> B		$K^- N \rightarrow N \overline{K}^*$
201± 9 1	CORDEN	76	DPWA	$K^- n \rightarrow \Lambda \pi^-$
$180\pm20$	BAILLON	75	IPWA	$\overline{K}N \rightarrow \Lambda \pi$
$172 \pm 15$	HEMINGWAY	75	DPWA	$K^- p \rightarrow \overline{K} N$
$178 \pm 13$	VANHORN	75	DPWA	$K^- p \rightarrow \Lambda \pi^0$
$111\pm$ 5	KANE	74	DPWA	$K^- p \rightarrow \Sigma \pi$
160±20	LITCHFIELD	<b>74</b> B	DPWA	$K^- p \rightarrow \Lambda(1520) \pi^0$
200±30	LITCHFIELD	74C	DPWA	$K^- p \rightarrow \Delta(1232)\overline{K}$
$\bullet$ $\bullet$ We do not use the following d	lata for averages	, fits,	limits, e	tc. • • •
260	DECLAIS	77	DPWA	$\overline{K}N \rightarrow \overline{K}N$
$190\pm10$	GOPAL	77	DPWA	<i>KN</i> 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	<b>74</b> D	DPWA	$\mathcal{K}^{-} \mathcal{p} \rightarrow \mathcal{A}(1820) \pi^{0}$
<sup>1</sup> Preferred solution 3; see CORDE	EN 76 for other p	ossib	ilities.	

## **Σ(2030) WIDTH**

	Mode	Fraction $(\Gamma_i/\Gamma)$
Г1	NK	17–23 %
Γ2	$\Lambda\pi$	17–23 %
Γ <sub>3</sub>	$\Sigma \pi$	5–10 %
Γ <sub>4</sub>	ΞK	<2 %
Γ <sub>5</sub>	$\Sigma(1385)\pi$	5–15 %
Г <sub>6</sub>	$\Sigma(1385)\pi$ , <i>F</i> -wave	
Γ <sub>7</sub>	$\Sigma(1385)\pi$ , <i>F</i> -wave	$(1.0\pm1.0)$ %
Г <sub>8</sub>	$\Sigma(1385)\pi$ , $H$ -wave	
Г9	$\Lambda(1520)\pi$	10–20 %
$\Gamma_{10}$	$\Lambda(1520)\pi$ , $D$ -wave	
$\Gamma_{11}$	$\Lambda(1520)\pi$ , $G$ -wave	
$\Gamma_{12}$	$\Delta(1232)\overline{K}$	10–20 %
$\Gamma_{13}$	${\it \Delta}(1232)\overline{\it K}$ , $\it F$ -wave	$(15 \pm 5)\%$
$\Gamma_{14}$	$\Delta(1232)\overline{K}$ , H-wave	$(1.0\pm1.0)$ %
Γ <sub>15</sub>	$N\overline{K}^*(892)$	<5 %
Γ <sub>16</sub>	$N\overline{K}^{*}(892)$ , $S\!\!=\!\!1/2$ , $F\!\!-\!\mathrm{wave}$	
Γ <sub>17</sub>	$N\overline{K}^{*}(892)$ , S=3/2, F-wave	$(14 \pm 8)\%$
Γ <sub>18</sub>	$N \overline{K}^{*}(892), S=3/2, H$ -wave	
Γ <sub>19</sub>	$\Lambda(1820)\pi$ , $P$ -wave	

### $\Sigma(2030)$ DECAY MODES

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## $\Sigma$ (2030) BRANCHING RATIOS

See "Sign conventions for resonance couplings" in the Note on  $\varLambda$  and  $\varSigma$  Resonances.

$\Gamma(N\overline{K})/\Gamma_{\text{total}}$	DOCUMENT ID		TECN	COMMENT	Г1/Г
0 17 to 0 23 OUR ESTIMATE	DOCUMENT ID		TECN	COMMENT	
0.20 + 0.04	SARANTSEV	19	DPWA	$\overline{K}N$ multichannel	
$0.13 \pm 0.01$	ZHANG	13A	DPWA	$\overline{K}N$ multichannel	
$0.19 \pm 0.03$	GOPAI	80	DPWA	$\overline{K}N \rightarrow \overline{K}N$	
$0.18 \pm 0.03$	HEMINGWAY	75	DPWA	$K^- p \rightarrow \overline{K} N$	
• • We do not use the following of	lata for averages	s. fits.	limits, e	etc. • • •	
0.260		15		Multichannel	
0.15		77		$\overline{K}N \rightarrow \overline{K}N$	
0.13 0.24 +0.02	GOPAL	77			
<sup>1</sup> From the preferred solution A in	KAMANO 15.		BIWA		
$\Gamma(\Lambda\pi)/\Gamma_{\rm testel}$					Γ2/Γ
	DOCUMENT ID		TECN	COMMENT	• 27 •
0 17 +0 04	SARANTSEV	10		<u>K</u> N multichannel	
• • • We do not use the following of	Jata for averages	19 tite	limits e		
		15		$\overline{K}N$ multichannel	
		15	DI WA		
<sup>+</sup> From the preferred solution A in	KAMANO 15.				
$\Gamma(\Sigma\pi)/\Gamma_{\rm total}$					Г <sub>3</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
0.025±0.008	SARANTSEV	19	DPWA	<b>K</b> N multichannel	
• • • We do not use the following of	lata for averages	s, fits,	limits, e	etc. • • •	
0.037	<sup>L</sup> KAMANO	15	DPWA	<b><i>K</i></b> <i>N</i> multichannel	
$^1$ From the preferred solution A in	KAMANO 15.				
$\Gamma(\Xi K)/\Gamma_{\text{total}}$					Γ <sub>4</sub> /Γ
VALUE	DOCUMENT ID		TECN	COMMENT	
<0.01	SARANTSEV	19	DPWA	<b><i>K</i></b> <i>N</i> multichannel	
• • • We do not use the following o	lata for averages	s, fits,	limits, e	etc. • • •	
0.006	<sup>L</sup> KAMANO	15	DPWA	<b><i>K</i></b> <i>N</i> multichannel	
$^1$ From the preferred solution A in	KAMANO 15.				
$\Gamma(\Lambda(1520)\pi, D ext{-wave})/\Gamma_{ ext{total}}$				I	Г <sub>10</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
$\sim 0.01$	SARANTSEV	19	DPWA	<u><i>K</i></u> <i>N</i> multichannel	
$\Gamma(\Lambda(1520)\pi, G ext{-wave})/\Gamma_{ ext{total}}$				I	Г <sub>11</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	

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 $<\!0.01$ 

SARANTSEV 19 DPWA  $\overline{K}N$  multichannel

$\Gamma(\Sigma(1385)\pi,$ F-wave $)/\Gamma_{ ext{total}}$					Г <sub>7</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
$0.01 \pm 0.01$	SARANTSEV	19	DPWA	<u><i>KN</i></u> multichannel	
• • • We do not use the following	data for averages	s, fits,	limits, e	etc. • • •	
0.030	<sup>1</sup> KAMANO	15	DPWA	<b><i>K</i></b> <i>N</i> multichannel	
$^1$ From the preferred solution A in	n KAMANO 15.				
$\Gamma(\Sigma(1385)\pi, H-wave)/\Gamma_{total}$					Г <sub>8</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
$\bullet~\bullet~\bullet$ We do not use the following	data for averages	s, fits,	limits, e	etc. • • •	
0.003	<sup>1</sup> KAMANO	15	DPWA	Multichannel	
$^{1}$ From the preferred solution A in	n KAMANO 15.				
$\Gamma(\Delta(1232)\overline{K}, F$ -wave)/ $\Gamma_{total}$					Г <sub>13</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
0.15±0.05	SARANTSEV	19	DPWA	<i>KN</i> multichannel	
$\Gamma(\Delta(1232)\overline{K}, H-wave)/\Gamma_{total}$				I	Г <sub>14</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
0.01±0.01	SARANTSEV	19	DPWA	<u><i>KN</i></u> multichannel	
$\Gamma(N\overline{K}^*(892), S=1/2, F-wave)$	/Γ <sub>total</sub>			I	Г <sub>16</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
<0.01	SARANTSEV	19	DPWA	<u><i>KN</i></u> multichannel	
• • • We do not use the following	data for averages	s, fits,	limits, e	etc. • • •	
0.154	<sup>1</sup> KAMANO	15	DPWA	<u><i>KN</i></u> multichannel	
$^1$ From the preferred solution A in	n KAMANO 15.				
$\Gamma(N\overline{K}^*(892), S=3/2, F-wave)$	/Γ <sub>total</sub>			I	Г <sub>17</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
0.14 ±0.08	SARANTSEV	19	DPWA	<b><i>K</i></b> <i>N</i> multichannel	
• • • We do not use the following	data for averages	s, fits,	limits, e	etc. • • •	
0.422	<sup>1</sup> KAMANO	15	DPWA	<b><i>K</i></b> <i>N</i> multichannel	
$^1$ From the preferred solution A in	n KAMANO 15.				
$\Gamma(N\overline{K}^*(892), S=3/2, H-wave)$	)/Γ <sub>total</sub>				Г <sub>18</sub> /Г
VALUE	DOCUMENT ID		TECN	COMMENT	
$\bullet~\bullet~$ We do not use the following	data for averages	s, fits,	limits, e	etc. • • •	
not seen	<sup>1</sup> KAMANO	15	DPWA	<b><i>K</i></b> <i>N</i> multichannel	

 $^{1}\,\mathrm{From}$  the preferred solution A in KAMANO 15.

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 $(\Gamma_i \Gamma_f)^{\frac{1}{2}} / \Gamma_{\text{total}} \text{ in } N\overline{K} \to \Sigma(2030) \to \Lambda \pi$  $(\Gamma_1 \Gamma_2)^{\frac{1}{2}}/[$ DOCUMENT ID VALUE TECN COMMENT  $+0.15 \pm 0.01$ ZHANG 13A DPWA Multichannel DPWA  $\overline{K}N$  multichannel  $+0.18 \pm 0.02$ GOPAL 77 <sup>1</sup> CORDEN DPWA  $K^- n \rightarrow \Lambda \pi^ +0.20 \pm 0.01$ 76  $+0.18 \pm 0.02$ BAILLON 75 IPWA  $\overline{K}N \rightarrow \Lambda\pi$ DPWA  $K^- p \rightarrow \Lambda \pi^0$  $+0.20 \pm 0.01$ VANHORN 75  $+0.195\pm0.053$ DEVENISH 74B Fixed-t dispersion rel. • • • We do not use the following data for averages, fits, limits, etc. • • •  $K^- p \rightarrow \Lambda \pi^0$ **DEBELLEFON 76 IPWA** 0.20 <sup>1</sup>Preferred solution 3; see CORDEN 76 for other possibilities. (**Г**<sub>1</sub>**Г**<sub>3</sub>)<sup>1/2</sup>/**Г**  $(\Gamma_i \Gamma_f)^{\frac{1}{2}} / \Gamma_{\text{total}} \text{ in } N\overline{K} \to \Sigma(2030) \to \Sigma \pi$ DOCUMENT ID VALUE TECN COMMENT ZHANG 13A DPWA Multichannel  $-0.08 \pm 0.01$ <sup>1</sup> CORDEN  $-0.09 \pm 0.01$ 77C  $K^- n \rightarrow \Sigma \pi$ <sup>1</sup> CORDEN  $K^- n \rightarrow \Sigma \pi$  $-0.06 \pm 0.01$ 77C DPWA  $\overline{K}N$  multichannel  $-0.15 \pm 0.03$ GOPAL 77  $-0.10 \pm 0.01$ KANE 74 DPWA  $K^- p \rightarrow \Sigma \pi$ • • We do not use the following data for averages, fits, limits, etc. • • • <sup>2</sup> GOYAL  $-0.085 \pm 0.02$ 77 DPWA  $K^- N \rightarrow \Sigma \pi$ <sup>1</sup> The two entries for CORDEN 77C are from two different acceptable solutions. <sup>2</sup>This coupling is extracted from unnormalized data.  $(\Gamma_1\Gamma_4)^{\frac{1}{2}}/\Gamma$  $\frac{1/2}{\Gamma_{\text{total}}}$  in  $N\overline{K} \to \Sigma(2030) \to \Xi K$  $(\Gamma_i \Gamma_f)$ VALUE DOCUMENT ID TECN COMMENT 69B DPWA  $K^- p \rightarrow \Xi K$ 0.023 MULLER 68 DPWA  $K^- p \rightarrow \Xi K$ < 0.05 BURGUN RVUE  $K^- p \rightarrow \Xi K$ TRIPP 67 < 0.05 (**Г**<sub>1</sub>**Г**<sub>6</sub>)<sup>1/2</sup>/Г  $\Gamma_{\mathsf{total}}$  in  $N\overline{K} o \Sigma(2030) o \Sigma(1385) \pi$  , F-wave VALUE DOCUMENT ID TECN COMMENT 13A DPWA Multichannel  $+0.16 \pm 0.01$ ZHANG <sup>1</sup> CAMERON 78 DPWA  $K^- p \rightarrow \Sigma(1385) \pi$  $+0.153\pm0.026$  $^{1}$  The published sign has been changed to be in accord with the baryon-first convention.  $E/\Gamma_{\text{total}}$  in  $N\overline{K} \rightarrow \Sigma(2030) \rightarrow \Lambda(1520)\pi$ , *D*-wave  $(\Gamma_1\Gamma_{10})^{\frac{1}{2}}/\Gamma$  $(\Gamma_{i}\Gamma_{f})$ VALUE TECN COMMENT DOCUMENT ID <sup>1</sup> CAMERON 77 DPWA  $K^- p \rightarrow \Lambda(1520) \pi^0$  $+0.114\pm0.010$ 74B DPWA  $K^- p \rightarrow \Lambda(1520) \pi^0$  $0.14 \pm 0.03$ LITCHFIELD • • • We do not use the following data for averages, fits, limits, etc. • <sup>2</sup> CORDEN 75B DBC  $K^- n \rightarrow N \overline{K} \pi^-$ 0.10 + 0.03 $^1$  The published sign has been changed to be in accord with the baryon-first convention. <sup>2</sup>An upper limit.

VALUE	DOCUMENT ID		TECN	COMMENT	F
$+0.146 \pm 0.010$	<sup>1</sup> CAMERON	77	DPWA	$K^- p \rightarrow$	Λ(1520)π <sup>0</sup>
$0.02\ \pm 0.02$	LITCHFIELD	<b>74</b> B	DPWA	$K^- p \rightarrow$	Λ(1520)π <sup>0</sup>
$^1$ The published sign has	been changed to be in a	ccord	with the	baryon-fir	st convention.
$(\Gamma_i \Gamma_f)^{\frac{1}{2}} / \Gamma_{\text{total}} \text{ in } N\overline{K}$	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$	32) <u>K</u>	, <i>F</i> -wav	e	(Γ <sub>1</sub> Γ <sub>13</sub> ) <sup>1/2</sup> /Ι
VALUE	DOCUMENT ID	,	TECN	COMMENT	
$+0.12\pm0.02$	ZHANG	13A	DPWA	Multicha	nnel
$0.16 \pm 0.03$	LITCHFIELD	74C	DPWA	$K^- p \rightarrow$	$\Delta(1232)\overline{K}$
$\bullet \bullet \bullet$ We do not use the f	following data for average	s, fits,	limits, e	etc. • • •	
$0.17 \pm 0.03$	<sup>1</sup> CORDEN	<b>75</b> B	DBC	$K^- n \rightarrow$	$N\overline{K}\pi^{-}$
<sup>1</sup> An upper limit.					
-1		) ) //	L	<b>10</b>	([-[.] <sup>1/2</sup> /]
$(\Gamma \cdot \Gamma_{c})^{\frac{1}{2}}/\Gamma_{c}$ in $N\overline{K}$	$\rightarrow \Sigma(2030) \rightarrow \Lambda(123)$	() I K			
$(\Gamma_i \Gamma_f)^{\frac{1}{2}} / \Gamma_{\text{total}} \text{ in } N\overline{K}$	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$	52) K	, <b>H-Wav</b> TECN	COMMENT	('1'14 <i>) /</i> '
$\frac{(\Gamma_i \Gamma_f)^{\frac{1}{2}} / \Gamma_{\text{total}} \text{ in } N\overline{K}}{2^{NLUE}}$ $0.00 \pm 0.02$ $(\Gamma_i \Gamma_f)^{\frac{1}{2}} / \Gamma_{\text{total}} \text{ in } N\overline{K}$	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$ $\xrightarrow{DOCUMENT ID}$ LITCHFIELD $\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($	74c (892)	, <i>n-way</i> <u>tecn</u> DPWA , <i>S</i> =1/2	<u>commen</u> K <sup>−</sup> p → 2, <b>F-wave</b>	$\frac{(1114)}{\Delta(1232)\overline{K}}$
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i} \Gamma_{f})^{\frac{1}{2}}} = \frac{1}{100} \frac$	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$ $\xrightarrow{DOCUMENT ID}$ LITCHFIELD $\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($	74c ( <b>892)</b>	, <i>FI-WAY</i> <u>TECN</u> DPWA , <b>S=1/2</b>	$\frac{COMMENT}{K^{-}p} \rightarrow 2, F-wave$	Δ(1232) <del>κ</del> Δ(1232) <del>κ</del> (Γ <sub>1</sub> Γ <sub>16</sub> ) <sup>1/2</sup> /Ι
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{0} = 0$	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$ $\xrightarrow{DOCUMENT ID}$ LITCHFIELD $\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $\xrightarrow{DOCUMENT ID}$	74c (892)	, <i>FI-WAV</i> <u>TECN</u> DPWA , <i>S</i> =1/2	$\frac{COMMENT}{K^{-} p \rightarrow}$ 2, <i>F</i> -wave	Δ(1232) <i>K</i> Δ(1232) <i>K</i> (Γ <sub>1</sub> Γ <sub>16</sub> ) <sup>1/2</sup> /Ι
$\frac{(\Gamma_i \Gamma_f)^{\frac{1}{2}} / \Gamma_{\text{total}} \text{ in } N\overline{K}}{VALUE}$ $0.00 \pm 0.02$ $\frac{(\Gamma_i \Gamma_f)^{\frac{1}{2}} / \Gamma_{\text{total}} \text{ in } N\overline{K}}{VALUE}$ $+ 0.06 \pm 0.02$	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$ $\xrightarrow{DOCUMENT ID}$ $\downarrow \text{ITCHFIELD}$ $\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $\xrightarrow{DOCUMENT ID}$ $ZHANG$ $\downarrow CAMEDON$	74c ( <b>892)</b> 13A 785	, <i>FI-Way</i> <u>TECN</u> DPWA , <i>S=1/2</i> <u>TECN</u> DPWA	$\frac{COMMENT}{K^{-}p} \rightarrow 2, F-wave$ $\frac{COMMENT}{Multichan}$	$\frac{(\Gamma_1 \Gamma_{16})^{1/2}}{(\Gamma_1 \Gamma_{16})^{1/2}/I}$
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}} \Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}} \Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{+0.06 \pm 0.02}$ $+ 0.06 \pm 0.03$ $0.02 \pm 0.01$	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$ $\xrightarrow{DOCUMENT ID}$ $LITCHFIELD$ $\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $\xrightarrow{DOCUMENT ID}$ $ZHANG$ $^{1}CAMERON$ $CORDEN$	74c ( <b>892)</b> 13A 78B	, <i>FI</i> -way <u>TECN</u> DPWA , <i>S</i> =1/2 <u>TECN</u> DPWA DPWA	$\frac{COMMENT}{K^{-} p \rightarrow}$ 2, <i>F</i> -wave $\frac{COMMENT}{Multichan}$ $K^{-} p \rightarrow$	$\frac{(\Gamma_{1}\Gamma_{16})^{\frac{1}{2}}}{(\Gamma_{1}\Gamma_{16})^{\frac{1}{2}}/I}$
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{+0.06\pm0.02}$ $+0.06\pm0.03$ $-0.02\pm0.01$ $\frac{1}{2}$ The published sign has	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$ $\xrightarrow{DOCUMENT ID}$ $\downarrow \text{ITCHFIELD}$ $\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $\xrightarrow{DOCUMENT ID}$ $ZHANG$ $^{1} CAMERON$ $CORDEN$	74C (892) 13A 78B 77B	, <i>F</i> -way <u>TECN</u> DPWA , <i>S</i> =1/2 <u>TECN</u> DPWA DPWA	$\frac{COMMENT}{K^{-}p \rightarrow}$ 2, <i>F</i> -wave $\frac{COMMENT}{Multichan}$ $K^{-}p \rightarrow$ $K^{-}d \rightarrow$ harven for	$\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}/I}$ nnel $N\overline{K}^*$ $N\overline{K}^*$ ot convention
$\frac{(\Gamma_i\Gamma_f)^{\frac{1}{2}}}{\Gamma_{\text{total}} \text{ in } N\overline{K}}$ $\frac{VALUE}{0.00 \pm 0.02}$ $\frac{(\Gamma_i\Gamma_f)^{\frac{1}{2}}}{\Gamma_{\text{total}} \text{ in } N\overline{K}}$ $\frac{VALUE}{+0.06 \pm 0.02}$ $+0.06 \pm 0.03$ $-0.02 \pm 0.01$ <sup>1</sup> The published sign has	$\rightarrow \Sigma(2030) \rightarrow \Delta(123)$ $\xrightarrow{DOCUMENT ID}$ $\downarrow \text{ITCHFIELD}$ $\rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $\xrightarrow{DOCUMENT ID}$ $ZHANG$ $^{1}CAMERON$ $CORDEN$ is been changed to be in a	74c (892) 13A 78B 77B ccord	, <i>F</i> -way <u>TECN</u> DPWA , <i>S</i> =1/2 <u>TECN</u> DPWA DPWA with the	$\frac{COMMENT}{K^{-} p \rightarrow}$ 2, <i>F</i> -wave $\frac{COMMENT}{Multichan}$ $K^{-} p \rightarrow$ $K^{-} d \rightarrow$ baryon-fir	$\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}/l}$ nnel $N\overline{K}^*$ $NN\overline{K}^*$ st convention.
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}/\Gamma_{\text{total}} \text{ in } N\overline{K}}{VALUE}$ $0.00 \pm 0.02$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{+0.06 \pm 0.02}$ $+0.06 \pm 0.03$ $-0.02 \pm 0.01$ $^{1}\text{ The published sign has}$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$	$ \rightarrow \Sigma(2030) \rightarrow \Delta(123) $ $ \xrightarrow{DOCUMENT ID} $ $ \downarrow \text{ITCHFIELD} $ $ \rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $ \xrightarrow{DOCUMENT ID} $ $ ZHANG $ $ ^{1} CAMERON $ $ CORDEN $ $ \text{S been changed to be in a} $ $ \rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($	74C (892) 13A 78B 77B ccord (892)	, <i>FI</i> -way <u>TECN</u> DPWA , <i>S</i> =1/2 <u>TECN</u> DPWA DPWA with the , <i>S</i> =3/2	$\frac{COMMENT}{K^{-} p \rightarrow}$ 2, <i>F</i> -wave $\frac{COMMENT}{Multichan}$ $\frac{K^{-} p \rightarrow}{K^{-} d \rightarrow}$ baryon-fir 2, <i>F</i> -wave	$\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}/l}$ nnel $\frac{N\overline{K}^*}{NN\overline{K}^*}$ st convention.
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}/\Gamma_{\text{total}} \text{ in } N\overline{K}}{VALUE}$ $0.00 \pm 0.02$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{+0.06 \pm 0.02}$ $+0.06 \pm 0.03$ $-0.02 \pm 0.01$ $^{1} \text{ The published sign has}$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$	$ \rightarrow \Sigma(2030) \rightarrow \Delta(123) $ $ = DOCUMENT ID$ $ = LITCHFIELD $ $ \rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $ = DOCUMENT ID$ $ = ZHANG^{1} CAMERON$ $ = CORDEN $ $ = been changed to be in a $ $ \Rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($	74C (892) 13A 77B 77B ccord (892)	, <i>F</i> -way <u>TECN</u> DPWA , <i>S</i> =1/2 <u>TECN</u> DPWA DPWA With the , <i>S</i> =3/2	$\frac{COMMENT}{K^{-}p \rightarrow}$ 2, <i>F</i> -wave $\frac{COMMENT}{K^{-}p \rightarrow}$ Multichan $\frac{K^{-}p \rightarrow}{K^{-}d \rightarrow}$ baryon-fir 2, <i>F</i> -wave	$\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}/\Gamma}$ $\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{N \overline{K}^*}$ st convention. $(\Gamma_1 \Gamma_{17})^{\frac{1}{2}}/\Gamma$
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}/\Gamma_{\text{total}} \text{ in } N\overline{K}}{VALUE}$ $0.00 \pm 0.02$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{+0.06 \pm 0.02}$ $+0.06 \pm 0.03$ $-0.02 \pm 0.01$ $^{1} \text{ The published sign has}$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$	$ \rightarrow \Sigma(2030) \rightarrow \Delta(123) $ $ = DOCUMENT ID$ $ = LITCHFIELD$ $ \rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $ = DOCUMENT ID$ $ = Z(2030) \rightarrow N\overline{K}^{*}($ $ = DOCUMENT ID$ $ = S been changed to be in a$ $ = \rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $ = DOCUMENT ID$	74с (892) 13А 78В 77В ссогd (892)	, <i>F</i> -way <u>TECN</u> DPWA , <i>S</i> =1/2 <u>TECN</u> DPWA DPWA with the , <i>S</i> =3/2 <u>TECN</u>	$\frac{COMMENT}{K^{-} p \rightarrow}$ 2, <i>F</i> -wave $\frac{COMMENT}{Multichan}$ $K^{-} p \rightarrow$ $K^{-} d \rightarrow$ baryon-fir 2, <i>F</i> -wave $\frac{COMMENT}{K^{-} p \rightarrow}$	$\frac{(\Gamma_{1}\Gamma_{16})^{\frac{1}{2}}}{(\Gamma_{1}\Gamma_{16})^{\frac{1}{2}}/l}$ $\frac{(\Gamma_{1}\Gamma_{16})^{\frac{1}{2}}/l}{N N \overline{K}^{*}}$ st convention.
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}/\Gamma_{\text{total}} \text{ in } N\overline{K}}{VALUE}$ $0.00 \pm 0.02$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{+0.06 \pm 0.02}$ $+0.06 \pm 0.03$ $-0.02 \pm 0.01$ $^{1} \text{ The published sign has}$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{total}} \text{ in } N\overline{K})$ $\frac{VALUE}{+0.05 \pm 0.01}$	$ \rightarrow \Sigma(2030) \rightarrow \Delta(123) $ $ = DOCUMENT ID$ $ = DITCHFIELD $ $ = DOCUMENT ID$ $ = DOCUMENT ID$ $ = ZHANG$ $ = DOCUMENT ID$ $ = CAMERON$ $ = CORDEN$ $ = CORDEN$ $ = DOCUMENT ID$	52) К 74С (892) 13А 77В 77В ссогd (892) 13А	, <i>F</i> -way <u><i>TECN</i></u> DPWA , <i>S</i> =1/2 <u><i>TECN</i></u> DPWA with the , <i>S</i> =3/2 <u><i>TECN</i></u> DPWA	$\frac{COMMENT}{K^{-} p \rightarrow}$ 2, <i>F</i> -wave $\frac{COMMENT}{Multichar}$ Multichar $K^{-} p \rightarrow$ baryon-fir 2, <i>F</i> -wave $\frac{COMMENT}{Multichar}$	$\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}/\Gamma}$ $\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{N \overline{K}^*}$ st convention. $\frac{(\Gamma_1 \Gamma_{17})^{\frac{1}{2}}/\Gamma}{\Gamma_{17}}$ nnel
$\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}/\Gamma_{\text{total}} \text{ in } N\overline{K}}{VALUE}$ $0.00 \pm 0.02$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}/\Gamma_{\text{total}} \text{ in } N\overline{K}$ $\frac{VALUE}{+0.06 \pm 0.02}$ $+0.06 \pm 0.03$ $-0.02 \pm 0.01$ $^{1} \text{ The published sign has}$ $\frac{(\Gamma_{i}\Gamma_{f})^{\frac{1}{2}}}{(\Gamma_{total} \text{ in } N\overline{K})}$ $\frac{VALUE}{+0.05 \pm 0.01}$ $+0.04 \pm 0.03$	$ \rightarrow \Sigma(2030) \rightarrow \Delta(123) $ $ = DOCUMENT ID$ $ = LITCHFIELD $ $ \rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $ = DOCUMENT ID$ $ = ZHANG$ $ = CAMERON CORDEN $ $ = been changed to be in a $ $ = \rightarrow \Sigma(2030) \rightarrow N\overline{K}^{*}($ $ = DOCUMENT ID $ $ = ZHANG$ $ = DOCUMENT ID $ $ = ZHANG$ $ = CAMERON $	74C 74C 892) 13A 77B 77B 77B 77B 77B 77B 77B 77B 77B 77	, <i>F</i> -way <u>TECN</u> DPWA , <i>S</i> =1/2 <u>TECN</u> DPWA with the , <i>S</i> =3/2 <u>TECN</u> DPWA DPWA	$\frac{COMMENT}{K^{-}p \rightarrow}$ 2, <i>F</i> -wave $\frac{COMMENT}{K^{-}p \rightarrow}$ Multichan $K^{-}p \rightarrow$ baryon-fir 2, <i>F</i> -wave $\frac{COMMENT}{Multichan}$ Multichan $K^{-}p \rightarrow$	$\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}/\Gamma}$ $\frac{(\Gamma_1 \Gamma_{16})^{\frac{1}{2}}}{N \overline{K}^*}$ st convention. $\frac{(\Gamma_1 \Gamma_{17})^{\frac{1}{2}}/\Gamma}{nnel}$ nnel $N \overline{K}^*$

$(\Gamma_i \Gamma_f)^{72} / \Gamma_{\text{total}}$ in $NK \to Z$	$\Sigma(2030)  ightarrow \Lambda(1820)$	D)π,	P-wave	e (Γ <sub>1</sub> Γ <sub>19</sub> ) <sup>72</sup> /	/Γ
VALUE	DOCUMENT ID		TECN	COMMENT	
$0.14 \pm 0.02$	CORDEN	<b>75</b> B	DBC	$K^- n \rightarrow N \overline{K} \pi^-$	
$0.18 \pm 0.04$	LITCHFIELD	<b>74</b> D	DPWA	$K^- p \rightarrow \Lambda(1820) \pi^0$	

# $\Sigma$ (2030) REFERENCES

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KAMANO	15	PR C92 025205	H. Kamano <i>et al.</i>	(ANL, OSAK)
ZHANG	13A	PR C88 035205	H. Zhang <i>et al.</i>	(KSU)
PDG	84	RMP 56 S1	C.G. Wohl et al.	(LBL, CIT, ČERN)
PDG	82	PL 111B 1	M. Roos <i>et al.</i>	(HELS, CIT, CERN)
GOPAL	80	Toronto Conf. 159	G.P. Gopal	` (RHEL) IJP
CAMERON	78	NP B143 189	W. Cameron et al.	(RHEL, LOIC) IJP
CAMERON	78B	NP B146 327	W. Cameron <i>et al.</i>	(RHEL, LOIC) IJP
CAMERON	77	NP B131 399	W. Cameron <i>et al.</i>	(RHEL, LOIC) IJP
CORDEN	77B	NP B121 365	M.J. Corden <i>et al.</i>	) (BIRM) IJP
CORDEN	77C	NP B125 61	M.J. Corden <i>et al.</i>	(BIRM) IJP
DECLAIS	77	CERN 77-16	Y. Declais <i>et al.</i>	(CAEN, CERN) IJP
GOPAL	77	NP B119 362	G.P. Gopal <i>et al.</i>	(LOIC, RHEL) IJP
GOYAL	77	PR D16 2746	D.P. Goyal, A.V. Sodhi	(DELH) IJP
CORDEN	76	NP B104 382	M.J. Corden et al.	(BIRM) IJP
DEBELLEFON	76	NP B109 129	A. de Bellefon, A. Berthon	(CDEF) IJP
BAILLON	75	NP B94 39	P.H. Baillon, P.J. Litchfield	(CERN, RHEL) IJP
CORDEN	75B	NP B92 365	M.J. Corden <i>et al.</i>	(BIRM) IJP
HEMINGWAY	75	NP B91 12	R.J. Hemingway <i>et al.</i>	(CERN, HEIDH, MPIM) IJP
VANHORN	75	NP B87 145	A.J. van Horn	(LBL) IJP
Also		NP B87 157	A.J. van Horn	(LBL) IJP
DEVENISH	74B	NP B81 330	R.C.E. Devenish, C.D. Froggatt,	B.R. Martin (DESY+)
KANE	74	LBL-2452	D.F. Kane	(LBL) IJP
LITCHFIELD	74B	NP B74 19	P.J. Litchfield <i>et al.</i>	(CERN, HÈIDH) IJP
LITCHFIELD	74C	NP B74 39	P.J. Litchfield <i>et al.</i>	(CERN, HEIDH) IJP
LITCHFIELD	74D	NP B74 12	P.J. Litchfield <i>et al.</i>	(CERN, HEIDH) IJP
MULLER	69B	Thesis UCRL 19372	R.A. Muller	(LRL)
BURGUN	68	NP B8 447	G. Burgun <i>et al.</i>	(SACL, CDEF, RHEL)
TRIPP	67	NP B3 10	R.D. Tripp <i>et al.</i>	(LRL, SLAC, CERN+)
COOL	66	PRL 16 1228	R.L. Cool <i>et al.</i>	(BNL)
WOHL	66	PRL 17 107	C.G. Wohl, F.T. Solmitz, M.L. S	Stevenson (LRL) IJP

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