

**K(3100)**

$$I^G(J^{PC}) = ??(???)$$

OMITTED FROM SUMMARY TABLE  
also known as  $K_J^?(3100)$ 

Narrow peak observed in several ( $\Lambda\bar{p} + \text{pions}$ ) and ( $\bar{\Lambda}p + \text{pions}$ ) states in  $\Sigma^-$  Be reactions by BOURQUIN 86 and in  $np$  and  $nA$  reactions by ALEEV 93. Not seen by BOEHNLEIN 91. If due to strong decays, this state has exotic quantum numbers ( $B=0, Q=+1, S=-1$  for  $\Lambda\bar{p}\pi^+\pi^+$  and  $I \geq 3/2$  for  $\Lambda\bar{p}\pi^-\pi^-$ ). Needs confirmation.

**K(3100) MASS**VALUE (MeV)  
 **$\approx 3100$  OUR ESTIMATE**DOCUMENT ID**3-BODY DECAYS**VALUE (MeV)DOCUMENT IDTECNCOMMENT **$3054 \pm 11$  OUR AVERAGE** $3060 \pm 7 \pm 20$ <sup>1</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \Lambda\bar{p}\pi^+$  $3056 \pm 7 \pm 20$ <sup>1</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \bar{\Lambda}p\pi^-$  $3055 \pm 8 \pm 20$ <sup>1</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \Lambda\bar{p}\pi^-$  $3045 \pm 8 \pm 20$ <sup>1</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \bar{\Lambda}p\pi^+$ **4-BODY DECAYS**VALUE (MeV)DOCUMENT IDTECNCOMMENT **$3059 \pm 11$  OUR AVERAGE** $3067 \pm 6 \pm 20$ <sup>1</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^+$  $3060 \pm 8 \pm 20$ <sup>1</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^-$  $3055 \pm 7 \pm 20$ <sup>1</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \bar{\Lambda}p\pi^-\pi^-$  $3052 \pm 8 \pm 20$ <sup>1</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \bar{\Lambda}p\pi^-\pi^+$ 

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

 $3105 \pm 30$ BOURQUIN 86 SPEC  $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^+$  $3115 \pm 30$ BOURQUIN 86 SPEC  $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^-$ **5-BODY DECAYS**VALUE (MeV)DOCUMENT IDTECNCOMMENT

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

 $3095 \pm 30$ BOURQUIN 86 SPEC  $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^+\pi^-$ <sup>1</sup> Supersedes ALEEV 90.**K(3100) WIDTH****3-BODY DECAYS**VALUE (MeV)DOCUMENT IDTECNCOMMENT

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

 $42 \pm 16$ <sup>2</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \Lambda\bar{p}\pi^+$  $36 \pm 15$ <sup>2</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \bar{\Lambda}p\pi^-$  $50 \pm 18$ <sup>2</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \Lambda\bar{p}\pi^-$  $30 \pm 15$ <sup>2</sup> ALEEV 93 BIS2  $K(3100) \rightarrow \bar{\Lambda}p\pi^+$

### 4-BODY DECAYS

VALUE (MeV)	CL%	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$22 \pm 8$		<sup>2</sup> ALEEV 93	BIS2	$K(3100) \rightarrow \Lambda \bar{p} \pi^+ \pi^+$
$28 \pm 12$		<sup>2</sup> ALEEV 93	BIS2	$K(3100) \rightarrow \Lambda \bar{p} \pi^+ \pi^-$
$32 \pm 15$		<sup>2</sup> ALEEV 93	BIS2	$K(3100) \rightarrow \bar{\Lambda} p \pi^- \pi^-$
$30 \pm 15$		<sup>2</sup> ALEEV 93	BIS2	$K(3100) \rightarrow \bar{\Lambda} p \pi^- \pi^+$
<30	90	BOURQUIN 86	SPEC	$K(3100) \rightarrow \Lambda \bar{p} \pi^+ \pi^+$
<80	90	BOURQUIN 86	SPEC	$K(3100) \rightarrow \Lambda \bar{p} \pi^+ \pi^-$

### 5-BODY DECAYS

VALUE (MeV)	CL%	DOCUMENT ID	TECN	COMMENT
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
<30	90	BOURQUIN 86	SPEC	$K(3100) \rightarrow \Lambda \bar{p} \pi^+ \pi^+ \pi^-$
<sup>2</sup> Supersedes ALEEV 90.				

### K(3100) DECAY MODES

Mode
$\Gamma_1 \quad K(3100)^0 \rightarrow \Lambda \bar{p} \pi^+$
$\Gamma_2 \quad K(3100)^{--} \rightarrow \Lambda \bar{p} \pi^-$
$\Gamma_3 \quad K(3100)^- \rightarrow \Lambda \bar{p} \pi^+ \pi^-$
$\Gamma_4 \quad K(3100)^+ \rightarrow \Lambda \bar{p} \pi^+ \pi^+$
$\Gamma_5 \quad K(3100)^0 \rightarrow \Lambda \bar{p} \pi^+ \pi^+ \pi^-$
$\Gamma_6 \quad K(3100)^0 \rightarrow \Sigma(1385)^+ \bar{p}$

### $\Gamma(\Sigma(1385)^+ \bar{p}) / \Gamma(\Lambda \bar{p} \pi^+)$

$\Gamma_6 / \Gamma_1$

VALUE	CL%	DOCUMENT ID	TECN	COMMENT
<0.04	90	ALEEV 93	BIS2	$K(3100)^0 \rightarrow \Sigma(1385)^+ \bar{p}$

### K(3100) REFERENCES

ALEEV	93	PAN 56 1358 Translated from YAF 56 100.	A.N. Aleev <i>et al.</i>	(BIS-2 Collab.)
BOEHNLEIN	91	NPBPS B21 174	A. Boehnlein <i>et al.</i>	(FLOR, BNL, IND+)
ALEEV	90	ZPHY C47 533	A.N. Aleev <i>et al.</i>	(BIS-2 Collab.)
BOURQUIN	86	PL B172 113	M.H. Bourquin <i>et al.</i>	(GEVA, RAL, HEIDP+)