

K(3100)

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

OMITTED FROM SUMMARY TABLE

Narrow peak observed in several ($\Lambda\bar{p} + \text{pions}$) and ($\bar{\Lambda}p + \text{pions}$) states in Σ^- Be reactions Needs confirmation. 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 $\Lambda\bar{p}\pi^-$). Needs confirmation.

K(3100) MASS

VALUE (MeV)
 ≈ 3100 OUR ESTIMATE

DOCUMENT ID

3-BODY DECAYS

VALUE (MeV)

3054 ± 11 OUR AVERAGE

$3060 \pm 7 \pm 20$

¹ ALEEV 93 BIS2 $K(3100) \rightarrow \Lambda\bar{p}\pi^+$

$3056 \pm 7 \pm 20$

¹ ALEEV 93 BIS2 $K(3100) \rightarrow \bar{\Lambda}p\pi^-$

$3055 \pm 8 \pm 20$

¹ ALEEV 93 BIS2 $K(3100) \rightarrow \Lambda\bar{p}\pi^-$

$3045 \pm 8 \pm 20$

¹ ALEEV 93 BIS2 $K(3100) \rightarrow \bar{\Lambda}p\pi^+$

4-BODY DECAYS

VALUE (MeV)

3059 ± 11 OUR AVERAGE

$3067 \pm 6 \pm 20$

¹ ALEEV 93 BIS2 $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^+$

$3060 \pm 8 \pm 20$

¹ ALEEV 93 BIS2 $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^-$

$3055 \pm 7 \pm 20$

¹ ALEEV 93 BIS2 $K(3100) \rightarrow \bar{\Lambda}p\pi^-\pi^-$

$3052 \pm 8 \pm 20$

¹ ALEEV 93 BIS2 $K(3100) \rightarrow \bar{\Lambda}p\pi^-\pi^+$

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

3105 ± 30

BOURQUIN 86 SPEC $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^+$

3115 ± 30

BOURQUIN 86 SPEC $K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^-$

5-BODY DECAYS

VALUE (MeV)

3095 ± 30

DOCUMENT ID TECN COMMENT

BOURQUIN 86 SPEC $K(3100) \rightarrow$
 $\Lambda\bar{p}\pi^+\pi^+\pi^-$

¹ Supersedes ALEEV 90.

K(3100) WIDTH**3-BODY DECAYS**

VALUE (MeV)

42 ± 16
 36 ± 15
 50 ± 18
 30 ± 15

DOCUMENT ID TECN COMMENT

² ALEEV 93 BIS2 $K(3100) \rightarrow \Lambda\bar{p}\pi^+$
² ALEEV 93 BIS2 $K(3100) \rightarrow \bar{\Lambda}p\pi^-$
² ALEEV 93 BIS2 $K(3100) \rightarrow \Lambda\bar{p}\pi^-$
² ALEEV 93 BIS2 $K(3100) \rightarrow \bar{\Lambda}p\pi^+$

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

4-BODY DECAYS

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

K(3100) DECAY MODES

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

$\Gamma(\Sigma(1385)^+ \bar{p}) / \Gamma(\Lambda \bar{p} \pi^+)$				Γ_6 / Γ_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	NP B21 174 (suppl)	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+)