

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 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**

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
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

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
3095 ± 30	BOURQUIN 86	SPEC	$K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^+\pi^-$
¹ Supersedes ALEEV 90.			

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

<u>VALUE (MeV)</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●			
42 ± 16	² ALEEV 93	BIS2	$K(3100) \rightarrow \Lambda\bar{p}\pi^+$
36 ± 15	² ALEEV 93	BIS2	$K(3100) \rightarrow \bar{\Lambda}p\pi^-$
50 ± 18	² ALEEV 93	BIS2	$K(3100) \rightarrow \Lambda\bar{p}\pi^-$
30 ± 15	² ALEEV 93	BIS2	$K(3100) \rightarrow \bar{\Lambda}p\pi^+$

4-BODY DECAYS

<u>VALUE (MeV)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● 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

<u>VALUE (MeV)</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
● ● ● 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	
Γ_1	$K(3100)^0 \rightarrow \Lambda \bar{p} \pi^+$
Γ_2	$K(3100)^{--} \rightarrow \Lambda \bar{p} \pi^-$
Γ_3	$K(3100)^- \rightarrow \Lambda \bar{p} \pi^+ \pi^-$
Γ_4	$K(3100)^+ \rightarrow \Lambda \bar{p} \pi^+ \pi^+$
Γ_5	$K(3100)^0 \rightarrow \Lambda \bar{p} \pi^+ \pi^+ \pi^-$
Γ_6	$K(3100)^0 \rightarrow \Sigma(1385)^+ \bar{p}$

 $\Gamma(\Sigma(1385)^+ \bar{p})/\Gamma(\Lambda \bar{p} \pi^+)$ **Γ_6/Γ_1**

<u>VALUE</u>	<u>CL%</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>
<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+)