

K(3100)

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

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

Narrow peak observed in several ($\Lambda\bar{p}$ + pions) and ($\bar{\Lambda}p$ + 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

VALUE (MeV)
3054±11 OUR AVERAGE

DOCUMENT ID TECN COMMENT

3060± 7±20	¹ ALEEV	93	BIS2	$K(3100) \rightarrow \Lambda\bar{p}\pi^+$
3056± 7±20	¹ ALEEV	93	BIS2	$K(3100) \rightarrow \bar{\Lambda}p\pi^-$
3055± 8±20	¹ ALEEV	93	BIS2	$K(3100) \rightarrow \Lambda\bar{p}\pi^-$
3045± 8±20	¹ ALEEV	93	BIS2	$K(3100) \rightarrow \bar{\Lambda}p\pi^+$

4-BODY DECAYS

VALUE (MeV)
3059±11 OUR AVERAGE

DOCUMENT ID TECN COMMENT

3067± 6±20	¹ ALEEV	93	BIS2	$K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^+$
3060± 8±20	¹ ALEEV	93	BIS2	$K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^-$
3055± 7±20	¹ ALEEV	93	BIS2	$K(3100) \rightarrow \bar{\Lambda}p\pi^-\pi^-$
3052± 8±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)

DOCUMENT ID TECN COMMENT

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

3095±30	BOURQUIN	86	SPEC	$K(3100) \rightarrow \Lambda\bar{p}\pi^+\pi^+\pi^-$
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¹Supersedes ALEEV 90.

K(3100) WIDTH

3-BODY DECAYS

VALUE (MeV)

DOCUMENT ID TECN COMMENT

• • • 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

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	
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	
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	A.N. Aleev <i>et al.</i>	(BIS-2 Collab.)
Translated from YAF 56 100.				
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+)