$K(3100)$

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

OMITTED FROM SUMMARY TABLE

Narrow peak observed in several ($\Lambda\overline{p}$ + pions) and ($\overline{\Lambda}p$ + 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 $\Lambda\overline{p}\pi^+\pi^+$ and $I \geq 3/2$ for $\Lambda\overline{p}\pi^-$). Needs confirmation.

$K(3100)$ MASS

VALUE (MeV)	DOCUMENT ID
≈ 3100 OUR ESTIMATE	

3-BODY DECAYS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
3054±11 OUR AVERAGE				
3060± 7±20	[1] ALEEV	93	BIS2	$K(3100) \to \Lambda\overline{p}\pi^+$
3056± 7±20	[1] ALEEV	93	BIS2	$K(3100) \to \overline{\Lambda}p\pi^-$
3055± 8±20	[1] ALEEV	93	BIS2	$K(3100) \to \Lambda\overline{p}\pi^-$
3045± 8±20	[1] ALEEV	93	BIS2	$K(3100) \to \overline{\Lambda}p\pi^+$

4-BODY DECAYS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
3059±11 OUR AVERAGE				
3067± 6±20	[1] ALEEV	93	BIS2	$K(3100) \to \Lambda\overline{p}\pi^+\pi^+$
3060± 8±20	[1] ALEEV	93	BIS2	$K(3100) \to \Lambda\overline{p}\pi^+\pi^-$
3055± 7±20	[1] ALEEV	93	BIS2	$K(3100) \to \overline{\Lambda}p\pi^-\pi^-$
3052± 8±20	[1] ALEEV	93	BIS2	$K(3100) \to \overline{\Lambda}p\pi^-\pi^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
3105±30	BOURQUIN	86	SPEC	$K(3100) \to \Lambda\overline{p}\pi^+\pi^+$
3115±30	BOURQUIN	86	SPEC	$K(3100) \to \Lambda\overline{p}\pi^+\pi^-$

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	$K(3100) \to \Lambda\overline{p}\pi^+\pi^+\pi^-$

[1] Supersedes 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	$K(3100) \to \Lambda\overline{p}\pi^+$
36±15	[2] ALEEV	93	BIS2	$K(3100) \to \overline{\Lambda}p\pi^-$
50±18	[2] ALEEV	93	BIS2	$K(3100) \to \Lambda\overline{p}\pi^-$
30±15	[2] ALEEV	93	BIS2	$K(3100) \to \overline{\Lambda}p\pi^+$

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	$K(3100) \to \Lambda\overline{p}\pi^+\pi^+$
28±12		[2] ALEEV	93	BIS2	$K(3100) \to \Lambda\overline{p}\pi^+\pi^-$
32±15		[2] ALEEV	93	BIS2	$K(3100) \to \overline{\Lambda}p\pi^-\pi^-$
30±15		[2] ALEEV	93	BIS2	$K(3100) \to \overline{\Lambda}p\pi^-\pi^+$
<30	90	BOURQUIN	86	SPEC	$K(3100) \to \Lambda\overline{p}\pi^+\pi^+$
<80	90	BOURQUIN	86	SPEC	$K(3100) \to \Lambda\overline{p}\pi^+\pi^-$

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	$K(3100) \to \Lambda\overline{p}\pi^+\pi^+\pi^-$

[2] Supersedes ALEEV 90.

$K(3100)$ DECAY MODES

	Mode
Γ_1	$K(3100)^0 \to \Lambda\overline{p}\pi^+$
Γ_2	$K(3100)^{--} \to \Lambda\overline{p}\pi^-$
Γ_3	$K(3100)^- \to \Lambda\overline{p}\pi^+\pi^-$
Γ_4	$K(3100)^+ \to \Lambda\overline{p}\pi^+\pi^+$
Γ_5	$K(3100)^0 \to \Lambda\overline{p}\pi^+\pi^+\pi^-$
Γ_6	$K(3100)^0 \to \Sigma(1385)^+\overline{p}$

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

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

$K(3100)$ REFERENCES

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