$K(3100)$

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

OMITTED FROM SUMMARY TABLE

Narrow peak observed in several ($\Lambda\overline{p}$ + pions) and ($\overline{\Lambda}p$ + pions) states in Σ^- Be reactions 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 $\Lambda\overline{p}\pi^-$). See also under non-$q\overline{q}$ candidates. Needs confirmation. (See the index for the page number.)

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

[1] Supersedes ALEEV 90.

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

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

[2] Supersedes ALEEV 90.

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

$K(3100)$ 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 +Balandin+ Translated from YAF 56 100.	(BIS-2 Collab.)
BOEHNLEIN	91	NP B21 174 (suppl) +Chung+	(FLOR, BNL, IND, RICE, MASD)
ALEEV	90	ZPHY C47 533 +Arefiev, Balandin+	(BIS-2 Collab.)
BOURQUIN	86	PL B172 113 +Brown+	(GEVA, RAL, HEIDP, LAUS, BRIS, CERN)