

**X(4050)<sup>±</sup>**

$$I^G(J^{PC}) = 1^-(?^?+)$$

*I, G, C* need confirmation.

**OMITTED FROM SUMMARY TABLE**

Properties incompatible with a  $q\bar{q}$  structure (exotic state). See the review on non- $q\bar{q}$  states.

Observed by MIZUK 08 in the  $\pi^+ \chi_{c1}(1P)$  invariant mass distribution in  $\bar{B}^0 \rightarrow K^- \pi^+ \chi_{c1}(1P)$  decays. Not seen by LEES 12B in this same mode after accounting for  $K\pi$  resonant mass and angular structure.

**X(4050)<sup>±</sup> MASS**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>4051 ± 14<sup>+20</sup><sub>-41</sub></b>	<sup>1</sup> MIZUK	08 BELL	$\bar{B}^0 \rightarrow K^- \pi^+ \chi_{c1}(1P)$

<sup>1</sup> From a Dalitz plot analysis with two Breit-Wigner amplitudes.

**X(4050)<sup>±</sup> WIDTH**

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>82<sup>+21+47</sup><sub>-17-22</sub></b>	<sup>1</sup> MIZUK	08 BELL	$\bar{B}^0 \rightarrow K^- \pi^+ \chi_{c1}(1P)$

<sup>1</sup> From a Dalitz plot analysis with two Breit-Wigner amplitudes.

**X(4050)<sup>±</sup> DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad \pi^+ \chi_{c1}(1P)$	seen

**X(4050)<sup>±</sup> BRANCHING RATIOS**

$\Gamma(\pi^+ \chi_{c1}(1P))/\Gamma_{\text{total}}$	$\Gamma_1/\Gamma$		
VALUE	DOCUMENT ID	TECN	COMMENT

**seen** <sup>1</sup> MIZUK 08 BELL  $\bar{B}^0 \rightarrow K^- \pi^+ \chi_{c1}(1P)$

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

**not seen** <sup>2</sup> LEES 12B BABR  $B \rightarrow K\pi\chi_{c1}(1P)$

<sup>1</sup> With a product branching fraction measurement of  $B(\bar{B}^0 \rightarrow K^- X(4050)^+) \times B(X(4050)^+ \rightarrow \pi^+ \chi_{c1}(1P)) = (3.0^{+1.5+3.7}_{-0.8-1.6}) \times 10^{-5}$ .

<sup>2</sup> With a product branching fraction limit of  $B(\bar{B}^0 \rightarrow X(4050)^+ K^-) \times B(X(4050)^+ \rightarrow \chi_{c1} \pi^+) < 1.8 \times 10^{-5}$  at 90% CL.

**X(4050)<sup>±</sup> REFERENCES**

LEES	12B	PR D85 052003	J.P. Lees <i>et al.</i>	(BABAR Collab.)
MIZUK	08	PR D78 072004	R. Mizuk <i>et al.</i>	(BELLE Collab.)