

X(4050)[±]

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

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)[±] MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$4051 \pm 14^{+20}_{-41}$	¹ MIZUK	08 BELL	$\bar{B}^0 \rightarrow K^- \pi^+ \chi_{c1}(1P)$

¹ From a Dalitz plot analysis with two Breit-Wigner amplitudes.

X(4050)[±] WIDTH

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

¹ From a Dalitz plot analysis with two Breit-Wigner amplitudes.

X(4050)[±] DECAY MODES

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

X(4050)[±] BRANCHING RATIOS

$\Gamma(\pi^+ \chi_{c1}(1P))/\Gamma_{\text{total}} \qquad \Gamma_1/\Gamma$

VALUE	DOCUMENT ID	TECN	COMMENT
seen	¹ 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	² LEES	12B BABR	$B \rightarrow K \pi \chi_{c1}(1P)$
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¹ With a product branching fraction measurement of $B(\bar{B}^0 \rightarrow K^- X(4050)^+) \times B(X(4050)^+ \rightarrow \pi^+ \chi_{c1}(1P)) = (3.0^{+1.5+3.7}_{-0.8-1.6}) \times 10^{-5}$.

² 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)[±] 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.)