$X(10610)^{\pm}$

$I^G(J^P) = ?^+(1^+)$

OMITTED FROM SUMMARY TABLE

Observed by BONDAR 12 in $\Upsilon(5S)$ decays to $\Upsilon(nS)\pi^+\pi^-$ ($n = 1, 2, 3$) and $h_b(mP)\pi^+\pi^-$ ($m = 1, 2$). $J^P = 1^+$ is favored from angular analyses.

$X(10610)^{\pm}$ MASS

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
10607.2±2.0	[1] BONDAR	12	BELL	$e^+e^- \to$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •				
10611 ±4 ±3	[2] BONDAR	12	BELL	$e^+e^- \to \Upsilon(1S)\pi^+\pi^-$
10609 ±2 ±3	[2] BONDAR	12	BELL	$e^+e^- \to \Upsilon(2S)\pi^+\pi^-$
10608 ±2 ±3	[2] BONDAR	12	BELL	$e^+e^- \to \Upsilon(3S)\pi^+\pi^-$
10605 ±2 $^{+3}_{-1}$	[2] BONDAR	12	BELL	$e^+e^- \to h_b(1P)\pi^+\pi^-$
10599 $^{+6}_{-3}$ $^{+5}_{-4}$	[2] BONDAR	12	BELL	$e^+e^- \to h_b(2P)\pi^+\pi^-$

[1] Average of the BONDAR 12 measurements in separate channels.
[2] Superseded by the average measurement of BONDAR 12.

$X(10610)^{\pm}$ WIDTH

VALUE (MeV)	DOCUMENT ID		TECN	COMMENT
18.4± 2.4	[3] BONDAR	12	BELL	$e^+e^- \to$ hadrons
• • • We do not use the following data for averages, fits, limits, etc. • • •				
22.3± 7.7$^{+3.0}_{-4.0}$	[4] BONDAR	12	BELL	$e^+e^- \to \Upsilon(1S)\pi^+\pi^-$
24.2± 3.1$^{+2.0}_{-3.0}$	[4] BONDAR	12	BELL	$e^+e^- \to \Upsilon(2S)\pi^+\pi^-$
17.6± 3.0±3.0	[4] BONDAR	12	BELL	$e^+e^- \to \Upsilon(3S)\pi^+\pi^-$
11.4$^{+4.5}_{-3.9}$$^{+2.1}_{-1.2}$	[4] BONDAR	12	BELL	$e^+e^- \to h_b(1P)\pi^+\pi^-$
13 $^{+10}_{-8}$ $^{+9}_{-7}$	[4] BONDAR	12	BELL	$e^+e^- \to h_b(2P)\pi^+\pi^-$

[3] Average of the BONDAR 12 measurements in separate channels.
[4] Superseded by the average measurement of BONDAR 12.

$X(10610)^+$ DECAY MODES

$X(10610)^-$ decay modes are charge conjugates of the modes below.

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\Upsilon(1S)\pi^+$	seen
Γ_2	$\Upsilon(2S)\pi^+$	seen

Γ_3	$\Upsilon(3S)\pi^+$		seen
Γ_4	$h_b(1P)\pi^+$		seen
Γ_5	$h_b(2P)\pi^+$		seen

$X(10610)^\pm$ BRANCHING RATIOS

$\Gamma(\Upsilon(1S)\pi^+)/\Gamma_{\text{total}}$ $\qquad\qquad\Gamma_1/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BONDAR	12	BELL	$e^+e^- \to \Upsilon(1S)\pi^+\pi^-$

$\Gamma(\Upsilon(2S)\pi^+)/\Gamma_{\text{total}}$ $\qquad\qquad\Gamma_2/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BONDAR	12	BELL	$e^+e^- \to \Upsilon(2S)\pi^+\pi^-$

$\Gamma(\Upsilon(3S)\pi^+)/\Gamma_{\text{total}}$ $\qquad\qquad\Gamma_3/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BONDAR	12	BELL	$e^+e^- \to \Upsilon(3S)\pi^+\pi^-$

$\Gamma(h_b(1P)\pi^+)/\Gamma_{\text{total}}$ $\qquad\qquad\Gamma_4/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BONDAR	12	BELL	$e^+e^- \to h_b(1P)\pi^+\pi^-$

$\Gamma(h_b(2P)\pi^+)/\Gamma_{\text{total}}$ $\qquad\qquad\Gamma_5/\Gamma$

VALUE	DOCUMENT ID		TECN	COMMENT
seen	BONDAR	12	BELL	$e^+e^- \to h_b(2P)\pi^+\pi^-$

$X(10610)^\pm$ REFERENCES

BONDAR 12 PRL 108 122001 A. Bondar *et al.* (BELLE Collab.)