

X(10610)[±]

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

OMITTED FROM SUMMARY TABLE

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

X(10610)[±] MASS

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

¹ Average of the BONDAR 12 measurements in separate channels.² Superseded by the average measurement of BONDAR 12.**X(10610)[±] WIDTH**

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

³ Average of the BONDAR 12 measurements in separate channels.⁴ Superseded by the average measurement of BONDAR 12.**X(10610)⁺ DECAY MODES**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

$\Gamma(\Upsilon(1S)\pi^+)/\Gamma_{\text{total}}$				Γ_1/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
seen	BONDAR	12	BELL	$e^+e^- \rightarrow \Upsilon(1S)\pi^+\pi^-$
$\Gamma(\Upsilon(2S)\pi^+)/\Gamma_{\text{total}}$				Γ_2/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
seen	BONDAR	12	BELL	$e^+e^- \rightarrow \Upsilon(2S)\pi^+\pi^-$
$\Gamma(\Upsilon(3S)\pi^+)/\Gamma_{\text{total}}$				Γ_3/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
seen	BONDAR	12	BELL	$e^+e^- \rightarrow \Upsilon(3S)\pi^+\pi^-$
$\Gamma(h_b(1P)\pi^+)/\Gamma_{\text{total}}$				Γ_4/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
seen	BONDAR	12	BELL	$e^+e^- \rightarrow h_b(1P)\pi^+\pi^-$
$\Gamma(h_b(2P)\pi^+)/\Gamma_{\text{total}}$				Γ_5/Γ
<u>VALUE</u>	<u>DOCUMENT ID</u>	<u>TECN</u>	<u>COMMENT</u>	
seen	BONDAR	12	BELL	$e^+e^- \rightarrow h_b(2P)\pi^+\pi^-$

 $X(10610)^\pm$ REFERENCES

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