$B_{1}(5070)$	I(J ^P	$= \frac{1}{2}(?^{?})$	
DJ(3910)	I, J,	P need co	onfirmation.
Quantum number	rs shown are quark-mo	del predictior	15.
	B _J (5970) MA	SS	
<i>B</i> _J (5970) ⁺ MASS OUR FIT uses <i>m</i> _B ⁰ a <i>VALUE</i> (MeV) 5964±5 OUR FIT	and $m_{B_J(5970)^+} - m_{B_0}$) to determine	e m _{BJ} (5970) ^{+·}
$m_{B_{J}(5970)^{+}} - m_{B^{0}}$	TS DOCUMENT ID	TECN	COMMENT
685 ±5 OUR FIT			
685 ±5 OUR AVERAGE $685.3 \pm 4.1 \pm 2.5$ 2 $681 \pm 5 \pm 12$ 1.4 • • • We do not use the fol	2k ¹ AAIJ 4k ² AALTONEN llowing data for averages	15AB LHCB 141 CDF 5. fits. limits. e	<i>pp</i> at 7, 8 TeV <i>pp</i> at 1.96 TeV .tc. ● ● ●
686.8±4.5± 2.5	2k ³ AAIJ	15AB LHCB	<i>pp</i> at 7, 8 TeV
¹ AAIJ 15AB reports [<i>m</i>	$-m_{\rm po}] - m_{\rm p} = 545$	$5.8 \pm 4.1 \pm 2.5$	MeV which we adjust by
the π^+ mass. The mass event. The result assum in the fit for mass differe 2 AALTONEN 141 reports adjusted by the π^+ mass 3 AAIJ 15AB reports $[m_B]$	tes inside the square brack es $P = (-1)^J$ and uses ence. ${}^mB_J(5970)^+ - {}^mB^0 -$ s. ${}^+_J - {}^mB^0] - {}^m\pi^+ = 5$	Expression where the second structure is the second structure is the second structure in the second structure is the second structure is the second structure is second structure in the second structure in the second structure is second structure in the second structure is second structure in the second structure is second structure in the second structure in the second structure is second structure in the second structure in the second structure is second structure in the second structure in the second structure is second structure in the second structure	asured for each candidate ic Breit-Wigner functions \pm 5 \pm 12 MeV which we MeV which we adjust by
the π^+ mass. The mass event. The result assume in the fit for mass differe	tes inside the square braces $P=(-1)^J$ and uses the ence.	kets were mea three relativist	asured for each candidate ic Breit-Wigner functions
$m_{B_{l}(5970)^{+}} - m_{B^{*0}}$			
VALUE (MeV) EV	TS DOCUMENT ID	TECN	COMMENT
$\bullet \bullet \bullet$ We do not use the fol	lowing data for averages	, fits, limits, e	tc. ● ● ●
686.0±4.0±2.5	2k ¹ AAIJ	15AB LHCB	<i>pp</i> at 7, 8 TeV
¹ AAIJ 15AB reports [$m_{B_{L}^{+}}$	$[-m_{B^0}] - (m_{B^{*+}} - m_{B^0})$	$(m_{B^+}) - m_{\pi^+}$	$=$ 547 \pm 4 \pm 3 MeV which
we adjust by the π^+ mass each candidate event. T $m_{B^+}) = 45.01 \pm 0.30 \pm$ in the fit for mass different	ass. The masses inside he result assumes $P = -$ \pm 0.23 MeV, and uses t ence.	the square bra $-(-1)^J$, $(m_B^{}$ hree relativist	ackets were measured for $_{*0} - m_{B^0}) = (m_{B^{*+}} - m_{B^0})$ ic Breit-Wigner functions
BJ (5970) ⁰ MASS OUR FIT uses m _{B+} a	and $m_{B_{J}(5970)^{0}} - m_{B^{-1}}$	+ to determin	^{e m} Bj(5970) ^{0 ·}

VALUE (MeV) 5971±5 OUR FIT

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DOCUMENT ID

m _B	(597	$(0)^0 - m_{B^+}$					
VALU	JE (Me	√)	EVTS	DOCUMENT ID		TECN	COMMENT
691	±5	OUR FIT					
691	±5	OUR AVER	AGE				
689.	9 ± 2.9	$9\pm~5.1$	10k	¹ AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
698	± 5	± 12	2.6k	² AALTONEN	141	CDF	<i>р</i> рат 1.96 ТеV
••	• We	do not use th	e following	data for averages	, fits,	limits, e	tc. ● ● ●
714.	3 ± 6.4	$4\pm$ 5.1	10k	³ AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
1	AAIJ :	15AB reports [/	${}^{m}B^{0}_{J}-{}^{m}B$	$[m_{3^+}] - m_{\pi^-} = 550$).4 ± 2	2.9 ± 5.1	MeV which we adjust by
	the π^- event. in the	mass. The The result as fit for mass d	masses insie ssumes <i>P =</i> ifference.	de the square brac $(-1)^J$ and uses	kets w two r	vere mea elativisti	isured for each candidate ic Breit-Wigner functions
2	AALT	ONEN 141 rep	orts $m_{B_J}(9)$	$(5970)^0 - m_{B^+} -$	m_{π^-}	= 558	\pm 5 \pm 12 MeV which we
	adjust	ed by the π^-	mass.				
3	AAIJ	15AB reports	$[m_{B_{J}^{0}} - m_{J}]$	$[m_{B^+}] - m_{\pi^-} = 5$	575 ±	6 ± 5	MeV which we adjust by
	the π^- event. in the	[–] mass. The The result as fit for mass d	masses insid sumes $P =$ ifference.	de the square brac $(-1)^J$ and uses t	kets w hree r	vere mea elativist	isured for each candidate ic Breit-Wigner functions
m _B	(597	$m_{B^{*+}} - m_{B^{*+}}$					
VALU	JE (Me	√)	EVTS	DOCUMENT ID		TECN	COMMENT
••	• We	do not use th	e following	data for averages	, fits,	limits, e	tc. ● ● ●
691.	6 ± 3.7	7 ± 5.1	10k	¹ AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
1	AAIJ	15AB reports	$[m_{B_J^0} - m]$	$[B^+] - (m_{B^{*+}} -$	$^{m}B^{+}$) – m ₁	$_{ au^{-}}$ = 552 \pm 4 \pm 5 MeV
	which for ead 0.30 ± differe	we adjust by t th candidate e = 0.23 MeV, a nce.	the π^- mavent. The rand uses th	ss. The masses ins esult assumes <i>P</i> = ree relativistic Bre	side th – (– eit-Wig	ie square 1) ^J , (<i>m</i> gner fun	e brackets were measured B^{*+} – m_{B^+}) = 45.01 \pm ctions in the fit for mass

B_J(5970) WIDTH

BJ(5970) ⁺ WIDTH)					
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
62±20 OUR AVERAGE					
$63 \!\pm\! 15 \!\pm\! 17$	2k	¹ AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
$60^{+30}_{-20}\pm40$	1.4k	AALTONEN	141	CDF	<i>р</i> рат 1.96 ТеV
$\bullet \bullet \bullet$ We do not use the	e following	data for averages	, fits,	limits, e	etc. ● ● ●
$61\!\pm\!14\!\pm\!17$	2k	² AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
$61 \!\pm\! 15 \!\pm\! 17$	2k	³ AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
-	7				

¹Assuming $P = (-1)^J$ and using two relativistic Breit-Wigner functions in the fit for mass

difference. ² Assuming $P = (-1)^J$ and using two relativistic Breit-Wigner functions in the fit for mass difference. ³ Assuming $P = -(-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference.

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WIDTH ⁰ (5970) <i>B</i> ا					
VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
81 ± 12 OUR AVERAGE					
$82\pm$ $8\pm$ 9	10k	¹ AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
$70^{+30}_{-20}\pm30$	2.6k	AALTONEN	141	CDF	<i>р р</i> ат 1.96 ТеV
$\bullet \bullet \bullet$ We do not use the	following	data for averages	, fits,	limits, e	etc. • • •
$56\pm$ $7\pm$ 9	10k	² AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
$82\!\pm\!10\!\pm~9$	10k	³ AAIJ	15 AB	LHCB	<i>pp</i> at 7, 8 TeV
	-				

¹Assuming $P = (-1)^J$ and using two relativistic Breit-Wigner functions in the fit for mass difference. ²Assuming $P = (-1)^J$ and using three relativistic Breit-Wigner functions in the fit for

mass difference. ³Assuming $P = -(-1)^J$ and using three relativistic Breit-Wigner functions in the fit for mass difference.

B_J(5970) DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Г ₁ Г ₂	$B\pi B^*\pi$	possibly seen seen

B_J(5970) BRANCHING RATIOS

$\Gamma(B\pi)/\Gamma_{\text{total}}$					Γ ₁ /Γ
VALUE	EVTS	DOCUMENT ID	TECN	CHG	COMMENT
possibly seen	2k	¹ AAIJ	15AB LHCB	±	<i>pp</i> at 7, 8 TeV
possibly seen	10k	¹ AAIJ	15AB LHCB	0	<i>pp</i> at 7, 8 TeV
possibly seen	2.6k	AALTONEN	14I CDF	0	<i>р р</i> ат 1.96 ТеV
possibly seen	1.4k	AALTONEN	14I CDF	±	<i>р р</i> ат 1.96 ТеV
-		7			

¹A $B\pi$ decay is forbidden from a $P = -(-1)^J$ parent, whereas $B^*\pi$ is allowed.

$\Gamma(B^*\pi)/\Gamma_{total}$						Γ_2/Γ
VALUE	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
seen	10k	AAIJ	15 AB	LHCB	0	<i>pp</i> at 7, 8 TeV
seen	2k	AAIJ	15 AB	LHCB	±	<i>pp</i> at 7, 8 TeV
seen	2.6k	AALTONEN	141	CDF	0	<i>р<mark>р</mark> аt 1.96 ТеV</i>
seen	1.4k	AALTONEN	141	CDF	±	<i>р</i> рат 1.96 ТеV

B_J(5970) REFERENCES

AAIJ	15AB JH	HEP 1504 024	R. Aaij	et al. ((LHCb	Collab.)
AALTONEN	14I PI	R D90 012013	T. Aalto	onen <i>et al.</i>	(CDF	Collab.)

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