

$\chi_{c0}(4500)$

$$I^G(J^{PC}) = 0^+(0^{++})$$

was $X(4500)$

See the review on the "Spectroscopy of Mesons Containing two Heavy Quarks."

$\chi_{c0}(4500)$ MASS

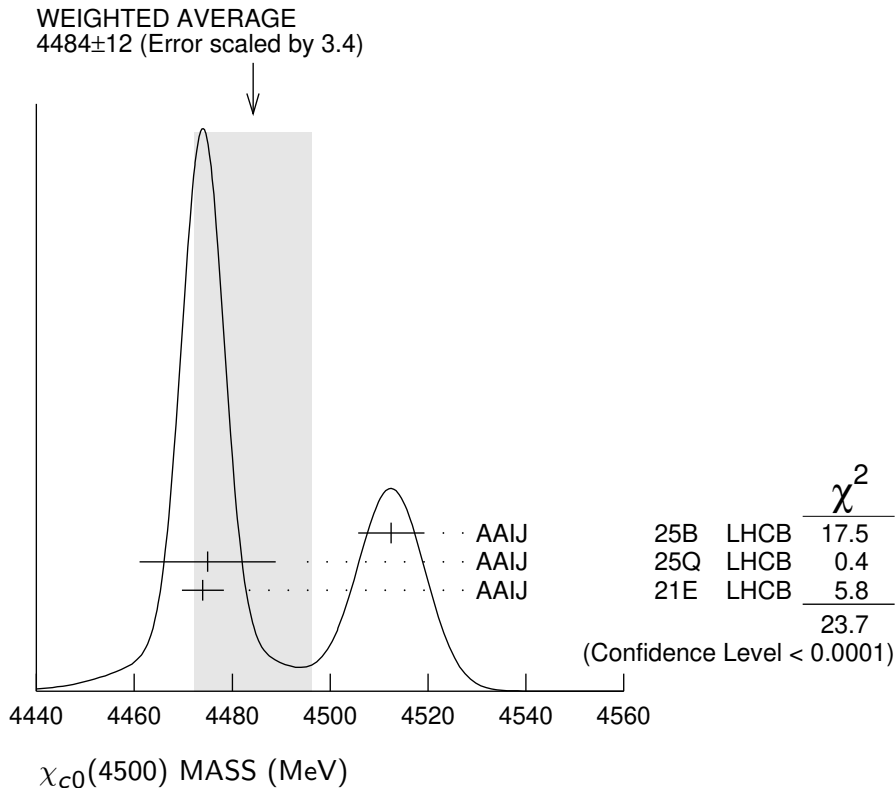
VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
4484 ± 12	OUR AVERAGE	Error includes scale factor of 3.4. See the ideogram below.		
4512.5 ^{+6.0} _{-6.2}	3.2	¹ AAIJ	25B LHCb	$pp \rightarrow \rho(J/\psi\phi)p$
4475 ± 7 ± 12		AAIJ	25Q LHCb	$B^+ \rightarrow \psi(2S)K^+\pi^+\pi^-$
4474 ± 3 ± 3	24k	² AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
4506 ± 11	⁺¹² ₋₁₅	4289	^{3,4} AAIJ	17C LHCb $B^+ \rightarrow J/\psi\phi K^+$

¹ From a fit using the five resonances reported in AAIJ 21E, described by relativistic Breit-Wigner distributions.

² From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 20 σ .

³ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 6.1 σ .

⁴ Superseded by AAIJ 21E.



$\chi_{c0}(4500)$ WIDTH

VALUE (MeV) EVTS DOCUMENT ID TECN COMMENT

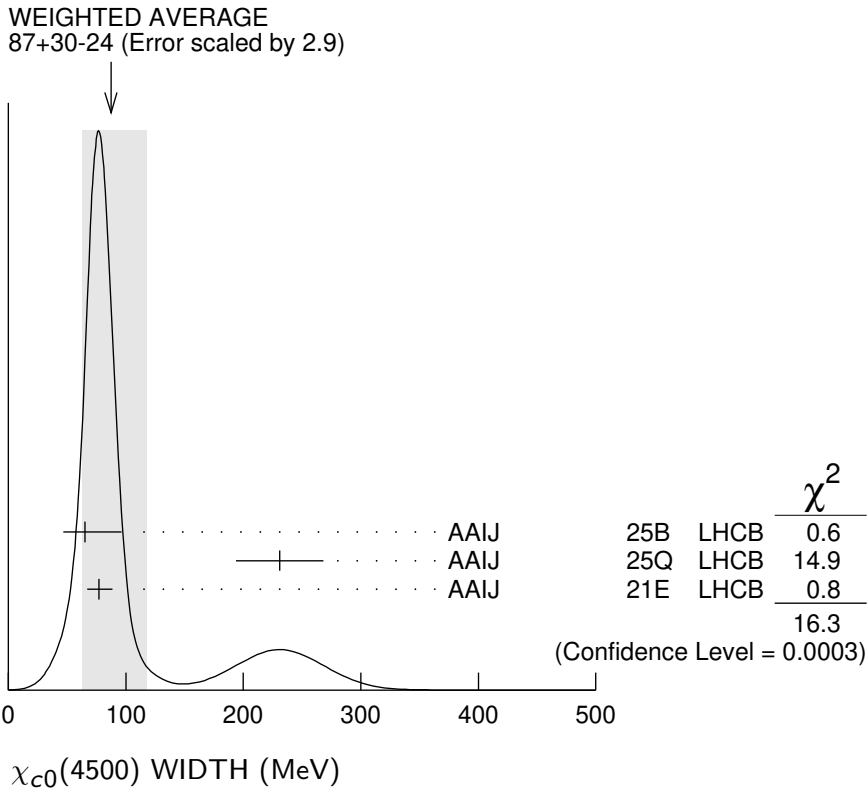
87^{+30}_{-24} OUR AVERAGE Error includes scale factor of 2.9. See the ideogram below.

65^{+20+24}_{-16-9}		¹ AAIJ	25B LHCb	$pp \rightarrow p(J/\psi\phi)p$
$231 \pm 19 \pm 32$		AAIJ	25Q LHCb	$B^+ \rightarrow \psi(2S)K^+\pi^+\pi^-$
$77 \pm 6^{+10}_{-8}$	24k	² AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$

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

$92 \pm 21^{+21}_{-20}$ 4289 ^{3,4} AAIJ 17C LHCb $B^+ \rightarrow J/\psi\phi K^+$

¹ From a fit using the five resonances reported in AAIJ 21E, described by relativistic Breit-Wigner distributions.
² From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 20σ .
³ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 6.1σ .
⁴ Superseded by AAIJ 21E.



$\chi_{c0}(4500)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
Γ_1 $J/\psi\phi$	seen
Γ_2 $\psi(2S)\pi^+\pi^-$	seen

$\chi_{c0}(4500)$ BRANCHING RATIOS

$\Gamma(J/\psi\phi)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
seen	24k	¹ AAIJ	21E LHCb	$B^+ \rightarrow J/\psi\phi K^+$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
seen	4289	^{2,3} AAIJ	17C LHCb	$B^+ \rightarrow J/\psi\phi K^+$

¹ From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 20σ .

² From an amplitude analysis of the decay $B^+ \rightarrow J/\psi\phi K^+$ with a significance of 6.1σ .

³ Superseded by AAIJ 21E.

$\Gamma(\psi(2S)\pi^+\pi^-)/\Gamma_{\text{total}}$ Γ_2/Γ

VALUE	DOCUMENT ID	TECN	COMMENT
seen	AAIJ	25Q LHCb	$B^+ \rightarrow \psi(2S)K^+\pi^+\pi^-$

$\chi_{c0}(4500)$ REFERENCES

AAIJ	25B	PRL 134 031902	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	25Q	JHEP 2501 054	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	21E	PRL 127 082001	R. Aaij <i>et al.</i>	(LHCb Collab.)
AAIJ	17C	PRL 118 022003	R. Aaij <i>et al.</i>	(LHCb Collab.) JP
Also		PR D95 012002	R. Aaij <i>et al.</i>	(LHCb Collab.)