$\chi_{b2}(3P)$

$I^G(J^{PC}) = 0^+(2^{++})$

Observed in the radiative decay to $\Upsilon(3S)$, therefore $C = +$. J needs confirmation.

$\chi_{b2}(3P)$ MASS

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
10524.02±0.57±0.53	[1] SIRUNYAN	18N	CMS	$pp \to \gamma\mu^+\mu^- X$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
10530 ±5 ±9	[2] AAD	12A	ATLS	$pp \to \gamma\mu^+\mu^- X$

[1] Systematic error includes an additional 0.5 MeV for the uncertainty on the $\Upsilon(3S)$ mass. Also measures $m_{\chi_{b2}(3P)} - m_{\chi_{b1}(3P)} = 10.60 \pm 0.64 \pm 0.17$ MeV. A total of 372 $\chi_{b1}(3P)$ and $\chi_{b2}(3P)$ events was observed.

[2] The mass barycenter of the merged lineshapes from the $J = 1$ and 2 states.

$\chi_{b2}(3P)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\Upsilon(3S)\gamma$	seen

$\chi_{b2}(3P)$ BRANCHING RATIOS

$\Gamma(\Upsilon(3S)\gamma)/\Gamma_{\text{total}}$ — Γ_1/Γ

VALUE	*DOCUMENT ID*		*TECN*	*COMMENT*
seen	SIRUNYAN	18N	CMS	$pp \to \gamma\mu^+\mu^- X$

$\chi_{b2}(3P)$ REFERENCES

SIRUNYAN	18N	PRL 121 092002	A.M. Sirunyan *et al.*	(CMS Collab.)
AAD	12A	PRL 108 152001	G. Aad *et al.*	(ATLAS Collab.)