

$R_{c0}(4240)$

$$I^G(J^{PC}) = 1^+(0^{--})$$

I, G, C need confirmation.

OMITTED FROM SUMMARY TABLE

was $X(4240)^\pm$

Properties incompatible with a $q\bar{q}$ structure (exotic state). See the review on non- $q\bar{q}$ states.

Spin and parity assignment $J^P = 0^-$ is favored over $1^-, 2^-$, and 2^+ by 8σ and over 1^+ by 1σ , according to the four-dimensional amplitude analysis of AAIJ 14AG.

 $R_{c0}(4240)$ MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$4239 \pm 18^{+45}_{-10}$	¹ AAIJ	14AG LHCB	$B^0 \rightarrow K^+ \pi^- \psi(2S)$

¹From a 4-dimensional analysis when a second, lower mass resonance is allowed in the $Z_c(4430)$ fit, with significance 6σ including systematic variations.

 $R_{c0}(4240)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
$220 \pm 47^{+108}_{-74}$	¹ AAIJ	14AG LHCB	$B^0 \rightarrow K^+ \pi^- \psi(2S)$

¹From a 4-dimensional analysis when a second, lower mass resonance is allowed in the $Z_c(4430)$ fit, with significance 6σ including systematic variations.

 $R_{c0}(4240)$ DECAY MODES

Mode	Fraction (Γ_i/Γ)
$\Gamma_1 \quad \pi^- \psi(2S)$	seen

 $R_{c0}(4240)$ BRANCHING RATIOS

$\Gamma(\pi^- \psi(2S))/\Gamma_{\text{total}}$	Γ_1/Γ		
VALUE	DOCUMENT ID	TECN	COMMENT
seen	¹ AAIJ	14AG LHCB	$B^0 \rightarrow K^+ \pi^- \psi(2S)$

¹From a 4-dimensional analysis when a second, lower mass resonance is allowed in the $Z_c(4430)$ fit. No partial branching fraction quoted.

 $R_{c0}(4240)$ REFERENCES

AAIJ	14AG PRL 112 222002	R. Aaij <i>et al.</i>	(LHCb Collab.)
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