$D(3000)^0$

$I(J^P) = \frac{1}{2}(?^?)$

OMITTED FROM SUMMARY TABLE

Both natural- and unnatural-parity components observed depending on the decay mode (AAIJ 13CC).

$D(3000)^0$ MASS

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
3214 ±29 ±49	28k	[1] AAIJ	16AH	LHCB	$B^- \to D^+\pi^-\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
2971.8± 8.7	9.5k	[2,3] AAIJ	13CC	LHCB	$pp \to D^{*+}\pi^- X$
3008.1± 4.0	17.6k	[2,4] AAIJ	13CC	LHCB	$pp \to D^+\pi^- X$

[1] From the amplitude analysis in the model describing the $D^+\pi^-$ wave together with virtual contributions from the $D^*(2007)^0$ and B^{*0} states, and components corresponding to the $D_2^*(2460)^0$, $D_1^*(2680)^0$, $D_3^*(2760)^0$, and $D_2^*(3000)^0$ resonances.

[2] Systematic uncertainty not estimated.

[3] Unnatural parity preferred.

[4] Natural parity state. A state $D(3000)^+$ is possibly seen in $D^0\pi^+$ final state.

$D(3000)^0$ WIDTH

VALUE (MeV)	*EVTS*	*DOCUMENT ID*		*TECN*	*COMMENT*
186 ±38 ±72	28k	[5] AAIJ	16AH	LHCB	$B^- \to D^+\pi^-\pi^-$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
188.1±44.8	9.5k	[6,7] AAIJ	13CC	LHCB	$pp \to D^{*+}\pi^- X$
110.5±11.5	17.6k	[6,8] AAIJ	13CC	LHCB	$pp \to D^+\pi^- X$

[5] From the amplitude analysis in the model describing the $D^+\pi^-$ wave together with virtual contributions from the $D^*(2007)^0$ and B^{*0} states, and components corresponding to the $D_2^*(2460)^0$, $D_1^*(2680)^0$, $D_3^*(2760)^0$, and $D_2^*(3000)^0$ resonances.

[6] Systematic uncertainty not estimated.

[7] Unnatural parity preferred.

[8] Natural parity state. A state $D(3000)^+$ is possibly seen in $D^0\pi^+$ final state.

$D(3000)^0$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$D^{*+}\pi^-$	seen

$D(3000)^0$ POLARIZATION AMPLITUDE A_{D_J}

A polarization amplitude A_{D_J} is a parameter that depends on the initial polarization of the D_J. For D_J decays the helicity angle, θ_H, distribution

varies like $1 + A_{D_J} \cos^2(\theta_H)$, where θ_H is the angle in the D_J rest frame between the two pions emitted in the $D_J \to D^* \pi$ and $D^* \to D \pi$ decays.

VALUE	*EVTS*	*DOCUMENT ID*	*TECN*	*COMMENT*
• • • We do not use the following data for averages, fits, limits, etc. • • •				
1.5 ± 0.9	9.5k	[9] AAIJ	13CC LHCB	$pp \to D^{*+} \pi^- X$

[9] Systematic uncertainty not estimated.

$D(3000)^0$ REFERENCES

AAIJ	16AH PR D94 072001	R. Aaij *et al.*	(LHCb Collab.)
AAIJ	13CC JHEP 1309 145	R. Aaij *et al.*	(LHCb Collab.)