$a_0(1710)$

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

OMITTED FROM SUMMARY TABLE

Evidence for this state is also inferred from the interference of the K^+K^- and $K^0_S K^0_S$ decays of the $f_0(1710)$ in $D^+_s \to f_0(1710)\pi^+$, leading to a relative branching ratio an order of magnitude larger than expected from isospin symmetry (ABLIKIM 22F). See also the review on "Spectroscopy of Light Meson Resonances."

$a_0(1710)$ MASS

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
1711±27 OUR AVERAGE Error includes scale factor of 5.1.				
1817± 8±20	[1] ABLIKIM	22AH	BES3	$D^+_s \to K^0_S K^+\pi^0$
1704± 5± 2	LEES	21A	BABR	$\eta_c(1S) \to \pi^+\pi^-\eta$

[1] Observed to decay into $K^0_S K^+$ in a Breit-Wigner amplitude analysis involving D^+_s decays into $\overline{K}^*(892)^0 K^+$, $\overline{K}^*(892)^+ K^0_S$, $\overline{K}^*(1410)^0 K^+$, $a_0(980)^+\pi^0$, and $a_0(1817)^+\pi^0$.

$a_0(1710)$ WIDTH

VALUE (MeV)	*DOCUMENT ID*		*TECN*	*COMMENT*
106±15 OUR AVERAGE				
97±22±15	[1] ABLIKIM	22AH	BES3	$D^+_s \to K^0_S K^+\pi^0$
110±15±11	LEES	21A	BABR	$\eta_c(1S) \to \pi^+\pi^-\eta$

[1] Observed to decay into $K^0_S K^+$ in a Breit-Wigner amplitude analysis involving D^+_s decays into $\overline{K}^*(892)^0 K^+$, $\overline{K}^*(892)^+ K^0_S$, $\overline{K}^*(1410)^0 K^+$, $a_0(980)^+\pi^0$, and $a_0(1817)^+\pi^0$.

$a_0(1710)$ DECAY MODES

	Mode	Fraction (Γ_i/Γ)
Γ_1	$\pi\eta$	seen
Γ_2	K^+K^-	
Γ_3	$K^0_S K^0_S$	
Γ_4	$K^0_S K^+$	seen

$\Gamma(\pi\eta)/\Gamma_{\text{total}}$ Γ_1/Γ

VALUE	*DOCUMENT ID*		*COMMENT*
seen	LEES	21A	$\eta_c(1S) \to \pi^+\pi^-\eta$

$\Gamma(K^+K^-)/\Gamma(K^0_S K^0_S)$ Γ_2/Γ_3

VALUE	DOCUMENT ID		TECN	COMMENT
0.32±0.12	[1] ABLIKIM	22F	BES3	$D_s^+ \to K^0_S K^0_S \pi^+$

[1] Using $D_s^+ \to K^+K^-\pi^+$ from ABLIKIM 21AE. The apparent violation of isospin symmetry may be due to a destructive interference with the $f_0(1710)$ in the K^+K^- channel, and a constructive interference in the $K^0_S K^0_S$ channel.

$\Gamma(K^0_S K^+)/\Gamma_{\text{total}}$ Γ_4/Γ

VALUE	DOCUMENT ID		TECN	COMMENT
seen	ABLIKIM	22AH	BES3	$D_s^+ \to K^0_S K^+ \pi^0$

$a_0(1710)$ REFERENCES

ABLIKIM	22AH	PRL 129 182001	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	22F	PR D105 L051103	M. Ablikim *et al.*	(BESIII Collab.)
ABLIKIM	21AE	PR D104 012016	M. Ablikim *et al.*	(BESIII Collab.)
LEES	21A	PR D104 072002	J.P. Lees *et al.*	(BABAR Collab.)