NODE=M174

$$I(J^P) = \frac{1}{2}(0^+)$$

also known as κ ; was $K_0^*(800)$ See the related review(s): Scalar Mesons below 1 GeV

$K_0^*(700)$ T-Matrix Pole \sqrt{s}

VALUE (MeV) DOCUMENT ID TECN COMMENT (630-730) - i (260-340) OUR ESTIMATE (see Fig. 64.1 in the review) $(702 \pm 12^{+4}_{-5}) - i (285 \pm$ ¹ DANILKIN **RVUE** Compilation 21 16^{+8}_{-13} ² PELAEZ $(648 \pm 7) - i (280 \pm 16)$ RVUE $\pi K \rightarrow \pi K$ 20 ³ PELAEZ $(670 \pm 18) - i (295 \pm 28)$ 17 RVUE $\pi K \rightarrow \pi K$ $(764 \pm 63^{+71}_{-54}) - i (306 \pm$ ⁴ ABLIKIM 11B BES2 1.3k $J/\psi \rightarrow$ $149^{+143}_{-85})$ $K^{0}_{S} K^{0}_{S} \pi^{+} \pi^{-}$ $(665 \pm 9) - i (268 + 21) - i (268 + 21)$ ⁵ GUO 11B RVUE $(849 \pm 77^{+18}_{-14}) - i (256 \pm$ ⁴ ABLIKIM 10E BES2 1.4k $J/\psi
ightarrow$ $K^{\pm}K^{0}_{S}\pi^{\mp}\pi^{0}$ $40^{+46}_{-22})$ ⁶ BUGG (663 \pm 8 \pm 34) - i (329 \pm 10 RVUE S-matrix pole 5 ± 22) $(706.0 \pm 1.8 \pm 22.8) - i$ ⁷ BONVICINI 08A CLEO 141k $D^+ \rightarrow K^- \pi^+ \pi^+$ $(319.4 \pm 2.2 \pm 20.2)$ $(841 \pm 30^{+81}_{-73}) - i (309 \pm$ ⁴ ABLIKIM 06C BES2 25k J/ $\psi \rightarrow$ 45+48 $\overline{K}^{*}(892)^{0} K^{+} \pi^{-}$ $(750 + 30)^{-i2} - i$ (342 ± 60) ⁸ BUGG 06 RVUE ⁹ DESCOTES-G..06 $(658 \pm 13) - i (279 \pm 12)$ RVUE $\pi K \rightarrow \pi K$ ¹⁰ GUO $(757 \pm 33) - i (279 \pm 41)$ 06 RVUE $^{11}\,\mathrm{ZHOU}$ $(694 \pm 53) - i (303 \pm 30)$ 06 RVUE $Kp \rightarrow K^- \pi^+ n$ ¹¹ ZHENG $(594 \pm 79) - i (362 \pm 166)$ 04 RVUE $K^- p \rightarrow K^- \pi^+ n$ ¹¹ BUGG $(722 \pm 60) - i (386 \pm 50)$ RVUE 11 $K^- p \rightarrow K^- \pi^+ n$ 03 ¹² ISHIDA $(875 \pm 75) - i (335 \pm 110)$ 97B RVUE 11 $K^- p \rightarrow K^- \pi^+ n$ ¹³ VANBEVEREN 86 727 - *i* 263 RVUE

¹Data driven analysis using partial-wave dispersion relations.

²Extracted employing πK partial wave analysis from ESTABROOKS 78 and ASTON 88, Roy-Steiner equations and once subtracted forward dispersion relations.

³ Reanalysis of ESTABROOKS 78 and ASTON 88 satisfying Forward Dispersion Relations and using sequences of Pade approximants.

⁴ Extracted from Breit-Wigner parameters.

 5 Fit to scattering phase shifts using UChPT amplitudes with explicit resonances.

⁶Supersedes BUGG 06. Combined analysis of ASTON 88, ABLIKIM 06C, AITALA 06, and LINK 09 using an s-dependent width with couplings to $K\pi$ and $K\eta'$, and the Adler zero near thresholds.

⁷ From a complex pole included in the fit. Using parameters from the model that fits data best.

 8 Reanalysis of ASTON 88, AITALA 02, and ABLIKIM 06C using for the κ an s-dependent width with an Adler zero near threshold.

 9 Using Roy-Steiner equations (ROY 71) consistent with unitarity, analyticity and crossing symmetry constraints.

¹⁰ From UChPT fitted to MERCER 71, BINGHAM 72 and ESTABROOKS 78. Amplitude shown to be consistent with data of ABLIKIM 06C.

 11 Reanalysis of ASTON 88 data.

 $^{12}\,\text{Reanalysis}$ of ASTON 88 using interfering Breit-Wigner amplitudes. Extracted from Breit-Wigner parameters.

¹³Unitarized Quark Model.

K_0^* (700) Breit-Wigner Mass							
VALU	E (MeV)		EVTS	DOCUMENT ID	TECN	COMMENT	
838	±11	OUR AV	ERAGE				
833	± 15			¹ ACHARYA	24C ALCE	$p p ightarrow ~ \kappa^0_S \pi^\pm X$, 13 TeV	
826	± 49	$^{+49}_{-34}$	1.3k	² ABLIKIM	118 BES2	$J/\psi \rightarrow \kappa^0_S \kappa^0_S \pi^+ \pi^-$	
810	± 68	$^{+15}_{-24}$	1.4k	³ ABLIKIM	10E BES2	$J/\psi \rightarrow \ \kappa^{\pm} \kappa^0_S \pi^{\mp} \pi^0$	
856	± 17	± 13	54k	LINK	07B FOCS	$D^+ \rightarrow K^- \pi^+ \pi^+$	

NODE=M174TMP

NODE=M174TMP \rightarrow UNCHECKED \leftarrow

NODE=M174TMP;LINKAGE=P NODE=M174TMP;LINKAGE=J

NODE=M174TMP;LINKAGE=N

NODE=M174TMP;LINKAGE=A NODE=M174TMP;LINKAGE=D NODE=M174TMP;LINKAGE=H

NODE=M174TMP;LINKAGE=B

NODE=M174TMP;LINKAGE=G

NODE=M174TMP;LINKAGE=I

NODE=M174TMP;LINKAGE=O

NODE=M174TMP;LINKAGE=F NODE=M174TMP;LINKAGE=M

NODE=M174TMP;LINKAGE=E

NODE=M174M NODE=M174M

OCCUR=2

Page 1

$878 \pm 23 + 64 \\ -55$	25k	⁴ ABLIKIM	06c BES2	$J/\psi \rightarrow \overline{K}^*(892)^0 K^+ \pi^-$	OCCUR=2
797 ±19 ±43	15k ⁵ ,	^{,6} AITALA	02 E791	$D^+ \rightarrow K^- \pi^+ \pi^+$	
• • • We do not use t	he followin	ng data for averag	es, fits, limit	s, etc. • • •	
888.0 ± 1.9 855 +15	141k 0.6k	⁷ BONVICINI ⁸ CAWLEIELD	08A CLEO	$D^+ \rightarrow K^- \pi^+ \pi^+$ $D^0 \rightarrow K^+ K^- \pi^0$	OCCUR=2
905 + 65	0.010	⁹ ISHIDA	97B RVUE	$11 \ K^- p \rightarrow K^- \pi^+ n$	
- 50 1 Accuming a Causei		to the measured t	wo particla c	porrelation function System	
atic error dominate	es. For 0–1	.00% multiplicity	class.	correlation function. System-	NODE=M174M;LINKAGE=D
² The Breit-Wigner	parameters	s from a fit with ⊢ 63 ⁺⁷¹) i (30	seven interr	nediate resonances. The S-	NODE=M174M;LINKAGE=LI
³ From a fit includi	ng ten ad	ditional resonance	es and energies	85) Wev. v-independent Breit-Wigner	NODE-M174M·LINKAGE-BI
width. 4 A fit in the $K^*(700)$	$V \perp K^{*}(80)$	$(2) \perp K^*(1/10)$ m	odel with m	ass and width of the $K^*(700)$	
from ABLIKIM 060	C well desc	ribes the left slop	e of the K_{c}^{0}	π^- invariant mass spectrum	NODE=M174M;LINKAGE=EP
in $\tau^- \rightarrow K^0_S \pi^-$	$ u_{ au}$ decay	studied by EPIFA	NOV 07. A	veraged value from different	
parameterizations.	, 01) $\nu = -+$		
show clear evidenc	e for a cor	1070 events of D° Istant non-resona	$r \rightarrow \kappa \pi^+$ nt scalar am	π° . LINK 02E and LINK 05 plitude rather than $K^{*}_{0}(700)$	NODE=M174M;LINKAGE=A
in their high statist	tics analysi	s of $D^+ o K^-$	$\pi^+ \mu^+ \nu_\mu$.	0、 /	
⁶ AUBERT 07T does	not find e	vidence for the ch	arged $K_0^*(70)$	0) using 11k events of $D^{f 0} o$	NODE=M174M;LINKAGE=AU
$K^- K^+ \pi^0$.	rom the m	odel that fits dat	a hest		
⁸ Breit-Wigner parar	neters. A	significant S-wave	e can be also	modeled as a non-resonant	NODE=M174M;LINKAGE=C NODE=M174M;LINKAGE=CA
_ contribution.					
⁹ Reanalysis of AST	ON 88 usir	ng interfering Brei	t-Wigner am	plitudes.	NODE=M174M;LINKAGE=IS
⁹ Reanalysis of AST	ON 88 usir	ng interfering Brei	t-Wigner am	plitudes.	NODE=M174M;LINKAGE=IS
⁹ Reanalysis of AST(ON 88 usir K*(ng interfering Brei (700) Breit-Wig	t-Wigner am gner Width	plitudes.	NODE=M174M;LINKAGE=IS NODE=M174W
⁹ Reanalysis of AST(ON 88 usir K₀(700) Breit-Wig	t-Wigner am	plitudes.	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W
⁹ Reanalysis of AST(<u>VALUE (MeV)</u> 463 ± 27 OUR AV	ON 88 usir <i>K</i> *((<u>EVTS</u> ERAGE	(700) Breit-Wig	sner Width	COMMENT	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W
⁹ Reanalysis of AST <u>VALUE (MeV)</u> 463 ± 27 OUR AV 430 + 88 - 53	ON 88 usir K°0(<u>EVTS</u> ERAGE	7 00) Breit-Wig <i>DOCUMENT ID</i> ¹ ACHARYA	t-Wigner am gner Width <u>TECN</u> 24C ALCE	plitudes. <u>COMMENT</u> $pp \rightarrow K_{S}^{0} \pi^{\pm} X, 13 \text{ TeV}$	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W
9 Reanalysis of AST($^{VALUE (MeV)}$ $463 \pm 27 OUR AV$ $430 \begin{array}{c} + 88 \\ - 53 \end{array}$ $449 \pm 156 \begin{array}{c} +144 \\ - 81 \end{array}$	ON 88 usir K°(<u>EVTS</u> ERAGE 1.3k	 (700) Breit-Wig <u>DOCUMENT ID</u> ¹ ACHARYA ² ABLIKIM 	t-Wigner am gner Width <u>TECN</u> 24C ALCE 11B BES2	plitudes. $COMMENT$ $pp \rightarrow K_{S}^{0} \pi^{\pm} X, 13 \text{ TeV}$ $J/\psi \rightarrow K_{S}^{0} K_{S}^{0} \pi^{+} \pi^{-}$	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W
$\frac{VALUE (MeV)}{463 \pm 27 \text{ OUR AV}}$ $\frac{463 \pm 27 \text{ OUR AV}}{-53}$ $449 \pm 156 + 144$ $536 \pm 87 + 106$ -47	ON 88 usir K [*] () <u>EVTS</u> ERAGE 1.3k 1.4k	7 700) Breit-Wig <i>DOCUMENT ID</i> ¹ ACHARYA ² ABLIKIM ³ ABLIKIM	gner Width <u>TECN</u> 24C ALCE 11B BES2 10E BES2	plitudes. $\frac{COMMENT}{pp \rightarrow K_{S}^{0} \pi^{\pm} X, 13 \text{ TeV}}$ $J/\psi \rightarrow K_{S}^{0} K_{S}^{0} \pi^{+} \pi^{-}$ $J/\psi \rightarrow K^{\pm} K_{S}^{0} \pi^{\mp} \pi^{0}$	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2
$\begin{array}{r} & \begin{array}{r} & \begin{array}{r} & \\ & \\ \hline & \\ & \\ & \\ & \\ & \\ & \\ & \\ &$	ON 88 usir K *(EVTS ERAGE 1.3k 1.4k 54k	(700) Breit-Wig <u>DOCUMENT ID</u> ¹ ACHARYA ² ABLIKIM ³ ABLIKIM LINK	TECN TECN 24C ALCE 11B BES2 10E BES2 07B FOCS	plitudes. $\underline{COMMENT}$ $pp \rightarrow K_{S}^{0} \pi^{\pm} X, 13 \text{ TeV}$ $J/\psi \rightarrow K_{S}^{0} K_{S}^{0} \pi^{+} \pi^{-}$ $J/\psi \rightarrow K^{\pm} K_{S}^{0} \pi^{\mp} \pi^{0}$ $D^{+} \rightarrow K^{-} \pi^{+} \pi^{+}$	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2
$\frac{VALUE (MeV)}{463 \pm 27 \text{ OUR AV}}$ $\frac{463 \pm 27 \text{ OUR AV}}{-53}$ $449 \pm 156 + 144 - 81$ $536 \pm 87 + 106 - 47$ $464 \pm 28 \pm 22$ $499 \pm 52 + 55 - 87$	ON 88 usir K *() EV TS ERAGE 1.3k 1.4k 54k 25k 54	7 700) Breit-Wig <i>DOCUMENT ID</i> ¹ ACHARYA ² ABLIKIM ³ ABLIKIM LINK ⁴ ABLIKIM ⁶ ADDUC	gner Width TECN 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2	plitudes. $\frac{COMMENT}{pp \rightarrow K_{S}^{0} \pi^{\pm} X, 13 \text{ TeV}}$ $J/\psi \rightarrow K_{S}^{0} K_{S}^{0} \pi^{+} \pi^{-}$ $J/\psi \rightarrow K^{\pm} K_{S}^{0} \pi^{\mp} \pi^{0}$ $D^{+} \rightarrow K^{-} \pi^{+} \pi^{+}$ $J/\psi \rightarrow \overline{K}^{*} (892)^{0} K^{+} \pi^{-}$	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2
$\begin{array}{c} & \frac{VALUE (MeV)}{463 \pm 27} OUR \ AV \\ 430 \ \ + \ 88 \\ - \ 53 \\ 449 \ \ \pm 156 \ \ + 144 \\ 536 \ \ \pm \ 87 \ \ - \ 47 \\ 464 \ \ \pm \ 28 \ \ \pm \ 22 \\ 499 \ \ \pm \ 52 \ \ - \ 87 \\ 410 \ \ \pm \ 43 \ \ \pm \ 87 \\ \bullet \ \bullet \ We \ do \ pot \ use \ t \end{array}$	ON 88 usir K *(0 EVTS ERAGE 1.3k 1.4k 54k 25k 15k 5. the following	2700) Breit-Wig <u>DOCUMENT ID</u> ¹ ACHARYA ² ABLIKIM ³ ABLIKIM LINK ⁴ ABLIKIM ⁶ AITALA ⁶ AITALA	TECN TECN 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2 02 E791 Tes fits limit	plitudes. $COMMENT$ $pp \rightarrow K_{S}^{0}\pi^{\pm}X, 13 \text{ TeV}$ $J/\psi \rightarrow K_{S}^{0}K_{S}^{0}\pi^{+}\pi^{-}$ $J/\psi \rightarrow K^{\pm}K_{S}^{0}\pi^{\mp}\pi^{0}$ $D^{+} \rightarrow K^{-}\pi^{+}\pi^{+}$ $J/\psi \rightarrow \overline{K}^{*}(892)^{0}K^{+}\pi^{-}$ $D^{+} \rightarrow K^{-}\pi^{+}\pi^{+}$ setc.	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2
⁹ Reanalysis of AST(VALUE (MeV) 463 \pm 27 OUR AV 430 $+$ 88 - 53 449 \pm 156 $+$ 144 - 81 536 \pm 87 $+$ 106 - 47 464 \pm 28 \pm 22 499 \pm 52 $+$ 55 - 87 410 \pm 43 \pm 87 • • We do not use t	ON 88 usir K *(0 EVTS ERAGE 1.3k 1.4k 54k 25k 15k 5; the followin 141k	2700) Breit-Wig <u>DOCUMENT ID</u> ¹ ACHARYA ² ABLIKIM ³ ABLIKIM LINK ⁴ ABLIKIM ⁶ AITALA ⁶ AITALA ⁷ DONUCINU	TECN TECN 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2 02 E791 res, fits, limit	plitudes. $COMMENT$ $pp \rightarrow K_{S}^{0}\pi^{\pm}X, 13 \text{ TeV}$ $J/\psi \rightarrow K_{S}^{0}K_{S}^{0}\pi^{+}\pi^{-}$ $J/\psi \rightarrow K^{\pm}K_{S}^{0}\pi^{\mp}\pi^{0}$ $D^{+} \rightarrow K^{-}\pi^{+}\pi^{+}$ $J/\psi \rightarrow \overline{K}^{*}(892)^{0}K^{+}\pi^{-}$ $D^{+} \rightarrow K^{-}\pi^{+}\pi^{+}$ s, etc. ••	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2
$\begin{array}{r} & \frac{VALUE (MeV)}{463 \pm 27} OUR \ AV \\ 430 + \ 88 \\ - \ 53 \\ 449 \pm 156 - \ 81 \\ 536 \pm \ 87 + \ 106 \\ - 47 \\ 464 \pm \ 28 \pm \ 22 \\ 499 \pm \ 52 - \ 87 \\ 410 \pm \ 43 \pm \ 87 \\ \bullet \bullet \ We \ do \ not \ use \ t \\ 550.4 \pm \ 11.8 \\ 251 \pm \ 48 \end{array}$	ON 88 usir EVTS ERAGE 1.3k 1.4k 54k 25k 15k 5 she followir 141k 0.6k	700) Breit-Wig DOCUMENT ID ACHARYA ACHARYA ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM CAVLFIELD	TECN TECN 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2 02 E791 res, fits, limit 08A CLEO 06A CLEO	plitudes. $\begin{array}{c} \underline{COMMENT} \\ pp \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2 OCCUR=2
⁹ Reanalysis of AST(463 ± 27 OUR AV 403 ± 27 OUR AV 430 $+$ 88 - 53 449 ± 156 + 144 - 81 536 ± 87 + 106 - 47 464 ± 28 ± 22 499 ± 52 + 55 410 ± 43 ± 87 • • We do not use to 550.4± 11.8 251 ± 48 545 + 235 - 110	ON 88 usir EVTS ERAGE 1.3k 1.4k 54k 25k 15k 5, the followir 141k 0.6k	2700) Breit-Wig DOCUMENT ID ACHARYA ACHARYA ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM CAWLFIELD 9 ISHIDA	TECN TECN TECN 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2 02 E791 res, fits, limit 08A CLEO 06A CLEO 97B RVUE	plitudes. $\begin{array}{c} \hline \hline \\ pp \rightarrow & K_{S}^{0}\pi^{\pm}X, 13 \text{ TeV} \\ J/\psi \rightarrow & K_{S}^{0}K_{S}^{0}\pi^{+}\pi^{-} \\ J/\psi \rightarrow & K^{\pm}K_{S}^{0}\pi^{\mp}\pi^{0} \\ D^{+} \rightarrow & K^{-}\pi^{+}\pi^{+} \\ J/\psi \rightarrow & \overline{K}^{*}(892)^{0}K^{+}\pi^{-} \\ D^{+} \rightarrow & K^{-}\pi^{+}\pi^{+} \\ s, \text{ etc. } \bullet \bullet \\ D^{+} \rightarrow & K^{-}\pi^{+}\pi^{+} \\ D^{0} \rightarrow & K^{+}K^{-}\pi^{0} \\ 11 & K^{-}p \rightarrow & K^{-}\pi^{+}n \end{array}$	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2 OCCUR=2
$\begin{array}{r} & \frac{VALUE (MeV)}{463 \pm 27} OUR \ AV \\ 430 \ + \ 88 \\ - \ 53 \\ 449 \ \pm 156 \ - \ 81 \\ 536 \ \pm \ 87 \ - \ 47 \\ 464 \ \pm \ 28 \ \pm \ 22 \\ 499 \ \pm \ 52 \ - \ 87 \\ 410 \ \pm \ 43 \ \pm \ 87 \\ \bullet \ \bullet \ We \ do \ not \ use \ t \\ 550.4 \pm \ 11.8 \\ 251 \ \pm \ 48 \\ 545 \ - \ 110 \\ \ 1 \ Assuming \ a \ Gaussi \end{array}$	ON 88 usir EVTS ERAGE 1.3k 1.4k 54k 25k 15k 5; the followin 141k 0.6k an source 5	700) Breit-Wig DOCUMENT ID ACHARYA ACHARYA ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ABLIKIM ADLIKIM A	TECN TECN 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2 02 E791 res, fits, limit 08A CLEO 06A CLEO 97B RVUE two-particle of	plitudes. $\begin{array}{c} \underline{COMMENT} \\ pp \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2 OCCUR=2 NODE=M174W;LINKAGE=D
⁹ Reanalysis of AST($\frac{VALUE (MeV)}{463 \pm 27}$ OUR AV 430 $\frac{+88}{-53}$ 449 $\pm 156 +144$ 536 $\pm 87 +106$ 536 $\pm 87 +106$ 464 $\pm 28 \pm 22$ 499 $\pm 52 + 55$ 410 $\pm 43 \pm 87$ • • We do not use t 550.4 ± 11.8 251 ± 48 545 $+235$ -110 ¹ Assuming a Gaussi atic error dominate ² The Broit Wireco	EVTS ERAGE 1.3k 1.4k 54k 25k 15k 5; the followin 141k 0.6k an source 1 es. For 0–1	(700) Breit-Wig <u>DOCUMENT ID</u> ¹ ACHARYA ² ABLIKIM ³ ABLIKIM ⁴ ABLIKIM ⁶ AITALA ⁶ dITALA ⁷ BONVICINI ⁸ CAWLFIELD ⁹ ISHIDA ¹ to the measured to 00% multiplicity	TECN TECN 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2 02 E791 res, fits, limit 08A CLEO 06A CLEO 97B RVUE two-particle of causon interest	plitudes. $\begin{array}{c} \underline{COMMENT} \\ pp \rightarrow K_{S}^{0}\pi^{\pm}X, 13 \text{ TeV} \\ J/\psi \rightarrow K_{S}^{0}K_{S}^{0}\pi^{+}\pi^{-} \\ J/\psi \rightarrow K^{\pm}K_{S}^{0}\pi^{\mp}\pi^{0} \\ D^{+} \rightarrow K^{-}\pi^{+}\pi^{+} \\ J/\psi \rightarrow \overline{K}^{*}(892)^{0}K^{+}\pi^{-} \\ D^{+} \rightarrow K^{-}\pi^{+}\pi^{+} \\ s, \text{ etc. } \bullet \bullet \\ D^{+} \rightarrow K^{-}\pi^{+}\pi^{+} \\ D^{0} \rightarrow K^{+}K^{-}\pi^{0} \\ 11 K^{-}p \rightarrow K^{-}\pi^{+}n \\ \text{correlation function. System-} \\ \end{array}$	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2 OCCUR=2 NODE=M174W;LINKAGE=D
⁹ Reanalysis of AST(463 ± 27 OUR AV 463 ± 27 OUR AV 430 $+$ 88 - 53 449 ±156 $+$ 144 - 81 536 ± 87 $+$ 106 - 47 464 ± 28 ± 22 499 ± 52 $+$ 55 410 ± 43 ± 87 • • We do not use to 550.4 ± 11.8 251 ± 48 545 $+$ 235 - 110 ¹ Assuming a Gaussia atic error dominate ² The Breit-Wigner matrix pole positio	ON 88 usir <i>EVTS</i> ERAGE 1.3k 1.4k 54k 25k 15k 5; the followin 141k 0.6k an source for parameters n is (764 ±	The provided as the provided	TECN TECN 24C ALCE 11B BES2 10E BES2 10E BES2 07B FOCS 06C BES2 02 E791 res, fits, limit 08A CLEO 06A CLEO 97B RVUE two-particle of seven interro 06 ± 149 ⁺¹	plitudes. $\begin{array}{c} \underline{COMMENT} \\ pp \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2 OCCUR=2 NODE=M174W;LINKAGE=D NODE=M174W;LINKAGE=LI
⁹ Reanalysis of AST($\frac{VALUE (MeV)}{463 \pm 27}$ OUR AV 430 $+ 88$ - 53 449 $\pm 156 + 144$ - 81 536 $\pm 87 + 106$ - 47 464 $\pm 28 \pm 22$ 499 $\pm 52 + 55$ - 87 410 $\pm 43 \pm 87$ • • We do not use t 550.4 ± 11.8 251 ± 48 545 $+ 235$ - 110 ¹ Assuming a Gaussi atic error dominate ² The Breit-Wigner matrix pole positio ³ From a fit includi	EVTS ERAGE 1.3k 1.4k 54k 25k 15k 5 the followin 141k 0.6k an source 7 parameters n is (764 = ng ten add	2700) Breit-Wig DOCUMENT ID ¹ ACHARYA ² ABLIKIM ³ ABLIKIM ⁴ ABLIKIM ⁶ AITALA ⁶ dITALA ⁷ BONVICINI ⁸ CAWLFIELD ⁹ ISHIDA to the measured t 00% multiplicity ⁹ from a fit with $63^{+71}_{-54}) - i$ (30)	t-Wigner am gner Width $\frac{TECN}{24C}$ 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2 02 E791 ges, fits, limit 08A CLEO 06A CLEO 97B RVUE two-particle of class. seven interr 06 \pm 149 ⁺¹ es and energe	plitudes. $pp \rightarrow K_{S}^{0}\pi^{\pm}X, 13 \text{ TeV}$ $J/\psi \rightarrow K_{S}^{0}K_{S}^{0}\pi^{+}\pi^{-}$ $J/\psi \rightarrow K^{\pm}K_{S}^{0}\pi^{\mp}\pi^{0}$ $D^{+} \rightarrow K^{-}\pi^{+}\pi^{+}$ $J/\psi \rightarrow \overline{K}^{*}(892)^{0}K^{+}\pi^{-}$ $D^{+} \rightarrow K^{-}\pi^{+}\pi^{+}$ s, etc. • • $D^{+} \rightarrow K^{-}\pi^{+}\pi^{+}$ $D^{0} \rightarrow K^{+}K^{-}\pi^{0}$ $11 K^{-}p \rightarrow K^{-}\pi^{+}n$ correlation function. System- mediate resonances. The S- $\frac{43}{85}$ MeV. gy-independent Breit-Wigner	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2 OCCUR=2 NODE=M174W;LINKAGE=D NODE=M174W;LINKAGE=LI NODE=M174W;LINKAGE=BL
⁹ Reanalysis of AST(463 ± 27 OUR AV 463 ± 27 OUR AV 430 $\stackrel{+ 88}{- 53}$ 449 ±156 $\stackrel{+ 144}{- 81}$ 536 ± 87 $\stackrel{+ 106}{- 47}$ 464 ± 28 ± 22 499 ± 52 $\stackrel{+ 55}{- 87}$ 410 ± 43 ± 87 • • We do not use to 550.4 ± 11.8 251 ± 48 545 $\stackrel{+ 235}{- 110}$ ¹ Assuming a Gaussia atic error dominate ² The Breit-Wigner matrix pole positio ³ From a fit includi width. ⁴ A fit in the K [*] ₀ (700)	ON 88 usir $\mathcal{K}_{0}^{*}($ EVTS ERAGE 1.3k 1.4k 54k 25k 15k 5; the followin 141k 0.6k an source 7 parameters n is (764 ± ng ten add 0) + $\mathcal{K}^{*}(89)$	and interfering Breit (700) Breit-Wig DOCUMENT ID 1 ACHARYA 2 ABLIKIM 3 ABLIKIM 4 ABLIKIM 4 ABLIKIM 6 AITALA 10 data for average 7 BONVICINI 8 CAWLFIELD 9 ISHIDA 10 to the measured to 10 multiplicity 10 from a fit with 10 $\pm 63^{+71}_{-54}$) - <i>i</i> (30 10 ditional resonance 12) + K*(1410) m	t-Wigner am gner Width TECN 24C ALCE 11B BES2 10E BES2 07B FOCS 06C BES2 02 E791 ces, fits, limit 08A CLEO 06A CLEO 97B RVUE two-particle co class. seven interr 06 \pm 149 ⁺¹ es and energe model with ma	plitudes. $\begin{array}{c} \underline{COMMENT} \\ pp \rightarrow \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	NODE=M174M;LINKAGE=IS NODE=M174W NODE=M174W OCCUR=2 OCCUR=2 OCCUR=2 NODE=M174W;LINKAGE=D NODE=M174W;LINKAGE=LI NODE=M174W;LINKAGE=BL

in $\tau^- \rightarrow K_S^0 \pi^- \nu_{\tau}$ decay studied by EPIFANOV 07. Averaged value from different parameterizations. ⁵ Not seen by KOPP 01 using 7070 events of $D^0 \rightarrow K^- \pi^+ \pi^0$. LINK 02E and LINK 05I

show clear evidence for a constant non-resonant scalar amplitude rather than $K_0^*(700)$ in their high statistics analysis of $D^+ \rightarrow \ \kappa^- \pi^+ \mu^+ \nu_\mu.$

⁶AUBERT 07T does not find evidence for the charged $K_0^{*}(700)$ using 11k events of $D^0 \rightarrow$ ${}^{7}_{0} {}^{K^-}_{K^+} {}^{\pi^0}_{\pi^0}$. ⁷Using parameters from the model that fits data best.

⁸Statistical error only. A fit to the Dalitz plot including the $K_0^*(700)^{\pm}$, $K^*(892)^{\pm}$, and ϕ resonances modeled as Breit-Wigners. A significant *S*-wave can be also modeled as a 9 non-resonant contribution. 9 Reanalysis of ASTON 88 using interfering Breit-Wigner amplitudes.

NODE=M174W;LINKAGE=IS

NODE=M174W;LINKAGE=A

NODE=M174W;LINKAGE=AU

NODE=M174W;LINKAGE=C

NODE=M174W;LINKAGE=CA

K^{*}₀(700) DECAY MODES

 Mode

 $K\pi$

 Γ_1

NODE=M174215;NODE=M174

Fraction (Γ_i/Γ)

100 %

K^{*}₀(700) REFERENCES

ACHARYA	24C	PL B856 138915	S. Acharya <i>et al.</i>	(ALICE Collab.)
DANILKIN	21	PR D103 114023	I. Danilkin, O. Deineka, M.	Vanderhaeghen (MAINZ)
PELAEZ	20	PRL 124 172001	J.R. Pelaez <i>et al.</i>	- , , ,
PELAEZ	17	EPJ C77 91	J.R. Pelaez, A.Rodas, J.R.	de Elvira
ABLIKIM	11B	PL B698 183	M. Ablikim et al.	(BES II Collab.)
GUO	11B	PR D84 034005	ZH. Guo, J.A. Oller	
ABLIKIM	10E	PL B693 88	M. Ablikim et al.	(BES II Collab.)
BUGG	10	PR D81 014002	D.V. Bugg	(LOQM)
LINK	09	PL B681 14	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)
BONVICINI	08A	PR D78 052001	G. Bonvicini et al.	(CLEO Collab.)
AUBERT	07T	PR D76 011102	B. Aubert et al.	(BABAR Collab.)
EPIFANOV	07	PL B654 65	D. Epifanov <i>et al.</i>	(BELLE Collab.)
LINK	07B	PL B653 1	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)
ABLIKIM	06C	PL B633 681	M. Ablikim <i>et al.</i>	(BES Collab.)
AITALA	06	PR D73 032004	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)
Also		PR D74 059901 (errat.)	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)
BUGG	06	PL B632 471	D.V. Bugg	(LOQM)
CAWLFIELD	06A	PR D74 031108	C. Cawlfield et al.	(CLEO Collab.)
DESCOTES-G	. 06	EPJ C48 553	S. Descotes-Genon, B. Mou	ssallam
GUO	06	NP A773 78	F.K. Guo <i>et al.</i>	
ZHOU	06	NP A775 212	Z.Y. Zhou, H.Q. Zheng	
LINK	05I	PL B621 72	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)
ZHENG	04	NP A733 235	H.Q. Zheng <i>et al.</i>	
BUGG	03	PL B572 1	D.V. Bugg	
AITALA	02	PRL 89 121801	E.M. Aitala <i>et al.</i>	(FNAL E791 Collab.)
LINK	02E	PL B535 43	J.M. Link <i>et al.</i>	(FNAL FOCUS Collab.)
KOPP	01	PR D63 092001	S. Kopp <i>et al.</i>	(CLEO Collab.)
ISHIDA	97B	PTP 98 621	S. Ishida <i>et al.</i>	
ASTON	88	NP B296 493	D. Aston <i>et al.</i>	(SLAC, NAGO, CINC, INUS)
VANBEVEREN	86	ZPHY C30 615	E. van Beveren <i>et al.</i>	(NIJM, BIEL)
ESTABROOKS	78	NP B133 490	P.G. Estabrooks <i>et al.</i>	(MCGI, CARL, DURH+)
BINGHAM	72	NP B41 1	H.H. Bingham <i>et al.</i>	(International K ⁺ Collab.)
MERCER	71	NP B32 381	R. Mercer et al.	(JHU)
ROY	71	PL 36B 353	S.M. Roy	

$\mathsf{DESIG}{=}1;\!\mathsf{OUR}\;\mathsf{EVAL};\!\rightarrow\mathsf{UNCHECKED}\leftarrow$

NODE=M174