

**$f_0(1770)$** 

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

OMITTED FROM SUMMARY TABLE

See the review on "Spectroscopy of Light Meson Resonances."

 **$f_0(1770)$  Breit-Wigner MASS**

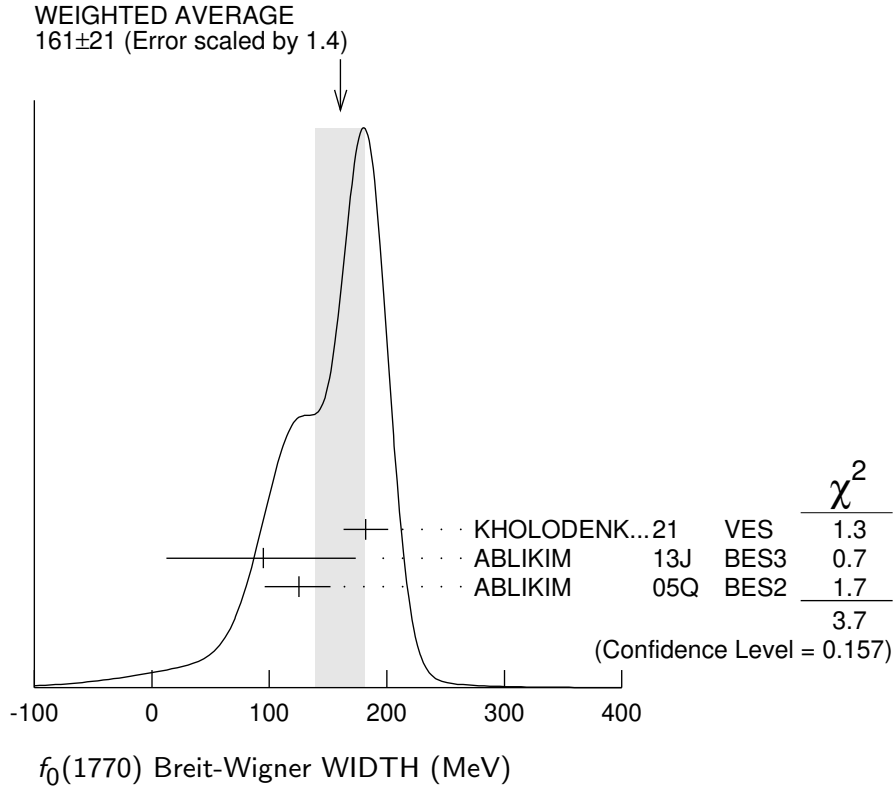
VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b><math>1784^{+16}_{-14}</math> OUR AVERAGE</b>		Error includes scale factor of 1.1.		
$1814 \pm 31$	7.2k	<sup>1</sup> KHOLODENK..21	VES	$29 \pi^- p \rightarrow n \omega \phi$
$1795 \pm 7^{+23}_{-20}$		ABLIKIM	13J BES3	$J/\psi \rightarrow \gamma \omega \phi$
$1760 \pm 15^{+15}_{-10}$		ABLIKIM	05Q BES2	$\psi(2S) \rightarrow \gamma \pi^+ \pi^- K^+ K^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$1765 \pm 15$		SARANTSEV	21 RVUE	$J/\psi \rightarrow \gamma (\pi\pi, K\bar{K}, \eta\eta, \omega\phi)$
$1814 \pm 18$		<sup>2,3</sup> AAIJ	14BR LHCB	$\bar{B}_s^0 \rightarrow J/\psi \pi^+ \pi^-$
$1812^{+19}_{-26} \pm 18$		<sup>4</sup> ABLIKIM	06J BES2	$J/\psi \rightarrow \gamma \omega \phi$
$1790^{+40}_{-30}$		ABLIKIM	05 BES2	$J/\psi \rightarrow \phi \pi^+ \pi^-$

<sup>1</sup> From partial wave analysis of  $\omega\phi$  invariant mass including  $0^{++}$ ,  $2^{++}$ , and  $0^{-+}$  resonances.<sup>2</sup> Second solution:  $1800 \pm 22$  MeV. The fit favors  $f_0(1770)$  to  $f_0(1710)$ .<sup>3</sup> Statistical error only.<sup>4</sup> Not seen by LIU 09 in  $B^\pm \rightarrow K^\pm \omega \phi$ . **$f_0(1770)$  Breit-Wigner WIDTH**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b><math>161 \pm 21</math> OUR AVERAGE</b>		Error includes scale factor of 1.4. See the ideogram below.		
$182 \pm 19$	7.2k	<sup>1</sup> KHOLODENK..21	VES	$29 \pi^- p \rightarrow n \omega \phi$
$95 \pm 10^{+78}_{-82}$		ABLIKIM	13J BES3	$J/\psi \rightarrow \gamma \omega \phi$
$125 \pm 25^{+10}_{-15}$		ABLIKIM	05Q BES2	$\psi(2S) \rightarrow \gamma \pi^+ \pi^- K^+ K^-$
● ● ● We do not use the following data for averages, fits, limits, etc. ● ● ●				
$180 \pm 20$		SARANTSEV	21 RVUE	$J/\psi \rightarrow \gamma (\pi\pi, K\bar{K}, \eta\eta, \omega\phi)$
$328 \pm 34$		<sup>2,3</sup> AAIJ	14BR LHCB	$\bar{B}_s^0 \rightarrow J/\psi \pi^+ \pi^-$
$105 \pm 20 \pm 28$		<sup>4</sup> ABLIKIM	06J BES2	$J/\psi \rightarrow \gamma \omega \phi$
$270^{+60}_{-30}$		<sup>5</sup> ABLIKIM	05 BES2	$J/\psi \rightarrow \phi \pi^+ \pi^-$

<sup>1</sup> From partial wave analysis of  $\omega\phi$  invariant mass including  $0^{++}$ ,  $2^{++}$ , and  $0^{-+}$  resonances.<sup>2</sup> Second solution:  $263 \pm 30$  MeV. The fit favors  $f_0(1770)$  to  $f_0(1710)$ .<sup>3</sup> Statistical error only.<sup>4</sup> Not seen by LIU 09 in  $B^\pm \rightarrow K^\pm \omega \phi$ .

<sup>5</sup>  $f_0(1710)$  width fixed to PDG value.



### $f_0(1770)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1$ $\pi\pi$	seen
$\Gamma_2$ $K\bar{K}$	seen
$\Gamma_3$ $\eta\eta$	seen
$\Gamma_4$ $\omega\phi$	seen

### $\Gamma(\pi\pi)/\Gamma_{\text{total}}$ $\Gamma_1/\Gamma$

VALUE	DOCUMENT ID	TECN	COMMENT
seen	SARANTSEV 21	RVUE	$J/\psi \rightarrow \gamma(\pi\pi, K\bar{K}, \eta\eta, \omega\phi)$
seen	AAIJ 14BR	LHCB	$\bar{B}_s^0 \rightarrow J/\psi \pi^+ \pi^-$
<b>seen</b>	ABLIKIM 05	BES2	$J/\psi \rightarrow \phi \pi^+ \pi^-$

### $\Gamma(K\bar{K})/\Gamma_{\text{total}}$ $\Gamma_2/\Gamma$

VALUE	DOCUMENT ID	TECN	COMMENT
<b>seen</b>	SARANTSEV 21	RVUE	$J/\psi \rightarrow \gamma(\pi\pi, K\bar{K}, \eta\eta, \omega\phi)$

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

VALUE
seen

DOCUMENT ID	TECN	COMMENT
SARANTSEV 21	RVUE	$J/\psi \rightarrow \gamma (\pi\pi, K\bar{K}, \eta\eta, \omega\phi)$

 $\Gamma_3/\Gamma$  $\Gamma(\omega\phi)/\Gamma_{\text{total}}$ 

VALUE	EVTS
seen	7.2k
seen	

DOCUMENT ID	TECN	COMMENT
KHOLODENK..21	VES	$29 \pi^- p \rightarrow n\omega\phi$
SARANTSEV 21	RVUE	$J/\psi \rightarrow \gamma (\pi\pi, K\bar{K}, \eta\eta, \omega\phi)$

 $\Gamma_4/\Gamma$  $f_0(1770)$  REFERENCES

KHOLODENK...21	PAN 83 1602	M.S. Kholodenko	(VES Collab.)
SARANTSEV 21	PL B816 136227	A.V. Sarantsev <i>et al.</i>	(BONN, PNPI)
AAIJ	14BR PR D89 092006	R. Aaij <i>et al.</i>	(LHCb Collab.)
ABLIKIM	13J PR D87 032008	M. Ablikim <i>et al.</i>	(BESIII Collab.)
LIU	09 PR D79 071102	C. Liu <i>et al.</i>	(BELLE Collab.)
ABLIKIM	06J PRL 96 162002	M. Ablikim <i>et al.</i>	(BES Collab.)
ABLIKIM	05 PL B607 243	M. Ablikim <i>et al.</i>	(BES Collab.)
ABLIKIM	05Q PR D72 092002	M. Ablikim <i>et al.</i>	(BES Collab.)