

# ψ(3770)

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

## ψ(3770) MASS

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>3770.0±2.4 OUR EVALUATION</b>	Error includes scale factor of 1.8. From $m_{\psi(2S)}$ and mass difference below.		

• • • We do not use the following data for averages, fits, limits, etc. • • •

3766.1±2.0	<sup>1</sup> SCHINDLER	80	MRK2	$e^+e^-$
3772.1±2.0	<sup>1</sup> BACINO	78	DLCO	$e^+e^-$
3774.1±3.0	<sup>1</sup> RAPIDIS	77	MRK1	$e^+e^-$

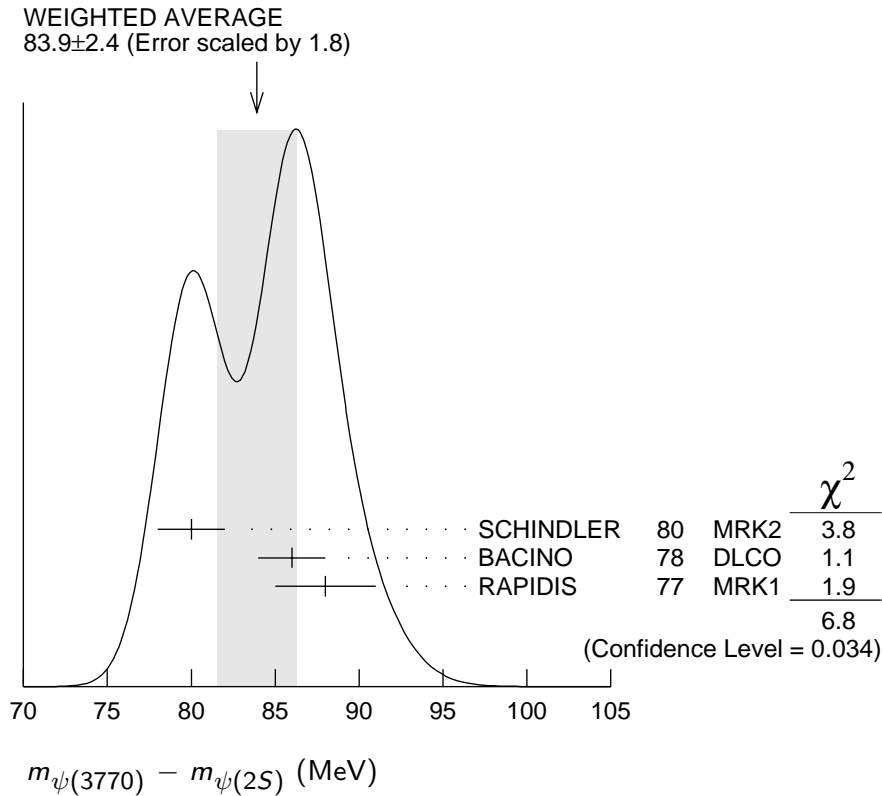
<sup>1</sup>Recalculated by us from  $m_{\psi(2S)} = 3686.093 \pm 0.034$  MeV and mass difference below.

## $m_{\psi(3770)} - m_{\psi(2S)}$

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>83.9±2.4 OUR AVERAGE</b>	Error includes scale factor of 1.8. See the ideogram below.		

80 ±2	SCHINDLER	80	MRK2	$e^+e^-$
86 ±2	<sup>2</sup> BACINO	78	DLCO	$e^+e^-$
88 ±3	RAPIDIS	77	MRK1	$e^+e^-$

<sup>2</sup>SPEAR  $\psi(2S)$  mass subtracted (see SCHINDLER 80).



## $\psi(3770)$ WIDTH

VALUE (MeV)	DOCUMENT ID	TECN	COMMENT
<b>23.6±2.7 OUR FIT</b>	Error includes scale factor of 1.1.		
<b>25.3±2.9 OUR AVERAGE</b>			
24 ±5	SCHINDLER	80 MRK2	$e^+e^-$
24 ±5	BACINO	78 DLCO	$e^+e^-$
28 ±5	RAPIDIS	77 MRK1	$e^+e^-$

## $\psi(3770)$ DECAY MODES

Mode	Fraction ( $\Gamma_i/\Gamma$ )	Scale factor
$\Gamma_1$ $D\bar{D}$	dominant	
$\Gamma_2$ $e^+e^-$	$(1.12\pm 0.17) \times 10^{-5}$	1.2

## $\psi(3770)$ PARTIAL WIDTHS

$\Gamma(e^+e^-)$	DOCUMENT ID	TECN	COMMENT	$\Gamma_2$
<b>0.26 ±0.04 OUR FIT</b>	Error includes scale factor of 1.2.			
<b>0.24 ±0.05 OUR AVERAGE</b>	Error includes scale factor of 1.2.			
0.276±0.050	SCHINDLER	80 MRK2	$e^+e^-$	
0.18 ±0.06	BACINO	78 DLCO	$e^+e^-$	
• • • We do not use the following data for averages, fits, limits, etc. • • •				
0.37 ±0.09	<sup>3</sup> RAPIDIS	77 MRK1	$e^+e^-$	
<sup>3</sup> See also $\Gamma(e^+e^-)/\Gamma_{\text{total}}$ below.				

## $\psi(3770)$ BRANCHING RATIOS

$\Gamma(D\bar{D})/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	$\Gamma_1/\Gamma$
<b>dominant</b>	PERUZZI	77 MRK1	$e^+e^- \rightarrow D\bar{D}$	

$\Gamma(e^+e^-)/\Gamma_{\text{total}}$	DOCUMENT ID	TECN	COMMENT	$\Gamma_2/\Gamma$
<b>1.12±0.17 OUR FIT</b>	Error includes scale factor of 1.2.			
<b>1.3 ±0.2</b>	RAPIDIS	77 MRK1	$e^+e^-$	

## $\psi(3770)$ REFERENCES

SCHINDLER	80	PR D21 2716	R.H. Schindler <i>et al.</i>	(Mark II Collab.)
BACINO	78	PRL 40 671	W.J. Bacino <i>et al.</i>	(SLAC, UCLA, UCI)
PERUZZI	77	PRL 39 1301	I. Peruzzi <i>et al.</i>	(Mark I Collab.)
RAPIDIS	77	PRL 39 526	P.A. Rapidis <i>et al.</i>	(Mark I Collab.)