

**$a_0(1950)$** 

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

**OMITTED FROM SUMMARY TABLE**

Needs confirmation. Seen in  $\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K\bar{K}\pi$  by LEES 16A with significance  $2.5\sigma$  in  $K_S^0 K^\pm \pi^\mp$  and  $4.2\sigma$  in  $K^+ K^- \pi^0$ . Spin-2 explanation ( $a_2(1950)$ ) is not compatible with data.

 **$a_0(1950)$  MASS**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b><math>1931 \pm 14 \pm 22</math></b>	12k	<sup>1,2</sup> LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K\bar{K}\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$1949 \pm 32 \pm 76$	8k	<sup>1</sup> LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K_S^0 K^\pm \pi^\mp$
$1927 \pm 15 \pm 23$	4k	<sup>1</sup> LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K^+ K^- \pi^0$
<sup>1</sup> From a model-independent partial wave analysis fit to a relativistic Breit-Wigner function with a floating width.				
<sup>2</sup> Weighted average of the $K_S^0 K^\pm$ and $K^+ K^-$ decay modes.				

 **$a_0(1950)$  WIDTH**

VALUE (MeV)	EVTS	DOCUMENT ID	TECN	COMMENT
<b><math>271 \pm 22 \pm 29</math></b>	12k	<sup>1,2</sup> LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K\bar{K}\pi$
• • • We do not use the following data for averages, fits, limits, etc. • • •				
$265 \pm 36 \pm 110$	8k	<sup>1</sup> LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K_S^0 K^\pm \pi^\mp$
$274 \pm 28 \pm 30$	4k	<sup>1</sup> LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K^+ K^- \pi^0$
<sup>1</sup> From a model-independent partial wave analysis fit to a relativistic Breit-Wigner function with a floating mass.				
<sup>2</sup> Weighted average of the $K_S^0 K^\pm$ and $K^+ K^-$ decay modes.				

 **$a_0(1950)$  DECAY MODES**

Mode	Fraction ( $\Gamma_i/\Gamma$ )
$\Gamma_1 \quad K\bar{K}$	seen

 **$a_0(1950)$  BRANCHING RATIOS**

$\Gamma(K\bar{K})/\Gamma_{\text{total}}$	$\Gamma_1/\Gamma$			
VALUE	EVTS	DOCUMENT ID	TECN	COMMENT
<b>seen</b>	12k	<sup>1</sup> LEES	16A BABR	$\gamma\gamma \rightarrow \eta_c(1S) \rightarrow K\bar{K}\pi$
<sup>1</sup> From a model-independent partial wave analysis.				

 **$a_0(1950)$  REFERENCES**

LEES      16A    PR D93 012005      J.P. Lees *et al.*      (BABAR Collab.)