Reference = BABUSCI 15; PL B742 1
Verifier code = KLOE

Normally we send all verifications for one experiment to one person, usually the spokesperson or data-analysis co-ordinator, who then distributes them to the appropriate people. Please tell us if we should send the verifications for your experiment to someone else.

PLEASE READ NOW

PLEASE REPLY WITHIN ONE WEEK

Simona Giovannella

EMAIL: simona.giovannella@lnf.infn.it

July 21, 2016

Dear Colleague,

(1) Please check the results of your experiment carefully. They are marked.

(2) Please reply within one week.

(3) Please reply even if everything is correct.

(4) IMPORTANT!! Please tell WHICH papers you are verifying. We have lots of requests out.

(5) Feel free to make comments on our treatment of any of the results (not just yours) you see.

Thank you for helping us make the Review accurate and useful.

Sincerely,

Simon Eidelman
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Prospekt Lavrent'eva 11
RU-630090 Novosibirsk
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LIGHT UNFLAVORED MESONS ($S = C = B = 0$)

NODE=MXXX005

For $I = 1$ (π, b, ρ, a): $u\overline{d}$, $(u\overline{u}-d\overline{d})/\sqrt{2}$, $d\overline{u}$;
for $I = 0$ (η, η', h, h', ω, ϕ, f, f'): $c_1(u\overline{u} + d\overline{d}) + c_2(s\overline{s})$

NODE=MXXX005

NODE=M004

$\phi(1020)$

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

$\phi(1020)$ BRANCHING RATIOS

NODE=M004220

$\Gamma(\eta e^+ e^-)/\Gamma_{total}$ — **Γ_{11}/Γ**

NODE=M004R24
NODE=M004R24

	VALUE (units 10^{-4})	EVTS	DOCUMENT ID		TECN	COMMENT
	1.08 ±0.04 OUR AVERAGE					
YOUR DATA	$1.075 \pm 0.007 \pm 0.038$	30k	[1] BABUSCI	15	KLOE	$1.02\ e^+e^- \to \eta e^+e^-$
	$1.19 \pm 0.19 \pm 0.12$	213	[2] ACHASOV	01B	SND	$e^+e^- \to \eta e^+e^-$
	$1.14 \pm 0.10 \pm 0.06$	355	[3] AKHMETSHIN	01	CMD2	$e^+e^- \to \eta e^+e^-$
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
	$1.13 \pm 0.14 \pm 0.07$	183	[4] AKHMETSHIN	01	CMD2	$e^+e^- \to \eta e^+e^-$
	$1.21 \pm 0.14 \pm 0.09$	130	[5] AKHMETSHIN	01	CMD2	$e^+e^- \to \eta e^+e^-$
	$1.04 \pm 0.20 \pm 0.08$	42	[6] AKHMETSHIN	01	CMD2	$e^+e^- \to \eta e^+e^-$
	$1.3\ ^{+0.8}_{-0.6}$	7	GOLUBEV	85	ND	$e^+e^- \to \eta e^+e^-$

OCCUR=2
OCCUR=3
OCCUR=4

YOUR NOTE

[1] Using $B(\eta \to 3\pi^0) = (32.57 \pm 0.23)\%$ from PDG 12. NODE=M004R24;LINKAGE=A

[2] Using $B(\eta \to \gamma\gamma) = (39.25 \pm 0.32)\%$, $B(\phi \to \eta\gamma) = (1.26 \pm 0.06)\%$, and $B(\phi \to e^+e^-) = (3.00 \pm 0.06) \times 10^{-4}$. NODE=M004R;LINKAGE=VM

[3] The average of the branching ratios separately obtained from the $\eta \to \gamma\gamma$, $3\pi^0$, $\pi^+\pi^-\pi^0$ decays. NODE=M004R;LINKAGE=H1

[4] From $\eta \to \gamma\gamma$ decays and using $B(\eta \to \gamma\gamma) = (39.33 \pm 0.25) \times 10^{-2}$, $B(\eta \to \pi^+\pi^-\gamma) = (4.75 \pm 11) \times 10^{-2}$, and $B(\phi \to \eta\gamma) = (1.297 \pm 0.033) \times 10^{-2}$. NODE=M004R;LINKAGE=H2

[5] From $\eta \to 3\pi^0$ decays and using $B(\pi^0 \to \gamma\gamma) = (98.798 \pm 0.033) \times 10^{-2}$, $B(\eta \to 3\pi^0) = (32.24 \pm 0.29) \times 10^{-2}$, $B(\eta \to \pi^+\pi^-\gamma) = (4.75 \pm 0.11) \times 10^{-2}$, and $B(\phi \to \eta\gamma) = (1.297 \pm 0.033) \times 10^{-2}$. NODE=M004R;LINKAGE=H3

[6] From $\eta \to \pi^+\pi^-\pi^0$ decays and using $B(\pi^0 \to \gamma\gamma) = (98.798 \pm 0.033) \times 10^{-2}$, $B(\pi^0 \to e^+e^-\gamma) = (1.198 \pm 0.032) \times 10^{-2}$, $B(\eta \to \pi^+\pi^-\pi^0) = (23.0 \pm 0.4) \times 10^{-2}$, $B(\phi \to \pi^+\pi^-\pi^0) = (15.5 \pm 0.6) \times 10^{-2}$, and $B(\phi \to \eta\gamma) = (1.297 \pm 0.033) \times 10^{-2}$. NODE=M004R;LINKAGE=H4

PARAMETER β IN $\phi \to \eta e^+ e^-$ DECAY

NODE=M004BFP

In the one-pole approximation the electromagnetic transition form factor for $\phi \to \eta e^+ e^-$ is given as a function of the e^+e^- invariant mass squared, q^2, by the expression:

NODE=M004BFP

$$|F(q^2)|^2 = (1 - q^2/\Lambda^2)^{-2},$$

where vector meson dominance predicts parameter $\Lambda \approx 0.770$ GeV ($\Lambda^{-2} \approx 1.687$ GeV^{-2}). The slope of this form factor, $\beta = dF/dq^2(q^2{=}0)$, equals Λ^{-2} in this approximation.

The measurements below obtain β in the one-pole approximation.

NODE=M004BFP

	VALUE (GeV^{-2})	EVTS	DOCUMENT ID		TECN	COMMENT
	1.29±0.13 OUR AVERAGE					
YOUR DATA	$1.28 \pm 0.10\ ^{+0.09}_{-0.08}$	30k	[1] BABUSCI	15	KLOE	$1.02\ e^+e^- \to \eta e^+e^-$
	3.8 ± 1.8	213	ACHASOV	01B	SND	$1.02\ e^+e^- \to \eta e^+e^-$

YOUR NOTE

[1] The uncertainty is statistical only with negligible systematic one. NODE=M004BFP;LINKAGE=A

ϕ(1020) REFERENCES

NODE=M004

YOUR PAPER	BABUSCI	15	PL B742 1	D. Babusci *et al.*	(KLOE Collab.)	REFID=56374
	PDG	12	PR D86 010001	J. Beringer *et al.*	(PDG Collab.)	REFID=54066
	ACHASOV	01B	PL B504 275	M.N. Achasov *et al.*	(Novosibirsk SND Collab.)	REFID=48111
	AKHMETSHIN	01	PL B501 191	R.R. Akhmetshin *et al.*	(Novosibirsk CMD-2 Collab.)	REFID=48110
	GOLUBEV	85	SJNP 41 756	V.B. Golubev *et al.*	(NOVO)	REFID=40450
			Translated from YAF 41 1183.			