Reference = AAIJ 15Y; PR D92 032002
Verifier code = LHCB

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

Vincenzo Vagnoni

EMAIL: vincenzo.vagnoni@bo.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
BINP, Budker Inst. of Nuclear Physics
Prospekt Lavrent'eva 11
RU-630090 Novosibirsk
Russian Federation

EMAIL: simon.eidelman@cern.ch

CHARMED MESONS
($C = \pm 1$)

NODE=MXXX035

$D^+ = c\overline{d}$, $D^0 = c\overline{u}$, $\overline{D}^0 = \overline{c}u$, $D^- = \overline{c}d$, similarly for D^*'s

NODE=MXXX035

NODE=M179

$D_0^*(2400)^\pm$

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

OMITTED FROM SUMMARY TABLE

J, P need confirmation.

NODE=M179

$D_0^*(2400)^\pm$ MASS

NODE=M179M

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
	2351± 7 OUR AVERAGE					
	2360±15±30		[1] AAIJ	15X	LHCB	$B^0 \to \overline{D}^0 K^+ \pi^-$
YOUR DATA	2349± 6± 4		[2] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0 \pi^+ \pi^-$
	2403±14±35	18.8k	LINK	04A	FOCS	γ A
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA	2354± 7±11		[3] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0 \pi^+ \pi^-$

NODE=M179M

NODE=M179M

OCCUR=2

[1] From the Dalitz plot analysis including various K^* and D^{**} mesons as well as broad structures in the $K\pi$ S-wave and the $D\pi$ S- and P-waves. NODE=M179M;LINKAGE=A

YOUR NOTE [2] Modeling the $\pi^+\pi^-$ S-wave with the Isobar formalism. NODE=M179M;LINKAGE=B

YOUR NOTE [3] Modeling the $\pi^+\pi^-$ S-wave with the K-matrix formalism. NODE=M179M;LINKAGE=C

$D_0^*(2400)^\pm$ WIDTH

NODE=M179W

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
	230±17 OUR AVERAGE Error includes scale factor of 1.1.					
	255±26±51		[1] AAIJ	15X	LHCB	$B^0 \to \overline{D}^0 K^+ \pi^-$
YOUR DATA	217±13±13		[2] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0 \pi^+ \pi^-$
	283±24±34	18.8k	LINK	04A	FOCS	γ A
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA	230±15±21		[3] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0 \pi^+ \pi^-$

NODE=M179W

NODE=M179W

OCCUR=2

[1] From the Dalitz plot analysis including various K^* and D^{**} mesons as well as broad structures in the $K\pi$ S-wave and the $D\pi$ S- and P-waves. NODE=M179W;LINKAGE=A

YOUR NOTE [2] Modeling the $\pi^+\pi^-$ S-wave with the Isobar formalism. NODE=M179W;LINKAGE=B

YOUR NOTE [3] Modeling the $\pi^+\pi^-$ S-wave with the K-matrix formalism. NODE=M179W;LINKAGE=C

$D_0^*(2400)^\pm$ REFERENCES

NODE=M179

	AAIJ	15X	PR D92 012012	R. Aaij *et al.* (LHCb Collab.)	REFID=56588
YOUR PAPER	AAIJ	15Y	PR D92 032002	R. Aaij *et al.* (LHCb Collab.)	REFID=56609
	LINK	04A	PL B586 11	J.M. Link *et al.* (FOCUS Collab.)	REFID=49775

NODE=M150

$D_2^*(2460)^\pm$

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

$J^P = 2^+$ assignment strongly favored(ALBRECHT 89B).

NODE=M150

$D_2^*(2460)^\pm$ MASS

NODE=M150M

	VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
	2465.4±1.3 OUR AVERAGE Error includes scale factor of 3.1. See the ideogram below.					
	2465.6±1.8±1.3		[1] AAIJ	15X	LHCB	$B^0 \to \overline{D}^0 K^+ \pi^-$
YOUR DATA	2468.6±0.6±0.3		[2] AAIJ	15Y	LHCB	$B^0 \to \overline{D}^0 \pi^+ \pi^-$
	2463.1±0.2±0.6	342k	AAIJ	13CC	LHCB	$pp \to D^0 \pi^+ X$
	$2460.6 \pm 4.4^{+3.6}_{-0.8}$	1371	[3] ABRAMOWICZ13		ZEUS	$e^\pm p \to D^{(*)0} \pi^+ X$
	2465.4±0.2±1.1	111k	[4] DEL-AMO-SA...10P		BABR	$e^+ e^- \to D^0 \pi^+ X$

NODE=M150M

	$2465.7 \pm 1.8^{+1.4}_{-4.8}$	2909	KUZMIN	07	BELL	$e^+ e^- \rightarrow$ hadrons
	$2463 \pm 3 \pm 3$	310	BERGFELD	94B	CLE2	$e^+ e^- \rightarrow D^0 \pi^+ X$
	$2453 \pm 3 \pm 2$	185	FRABETTI	94B	E687	γBe $\rightarrow D^0 \pi^+ X$
	$2469 \pm 4 \pm 6$		ALBRECHT	89F	ARG	$e^+ e^- \rightarrow D^0 \pi^+ X$
	• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA	$2468.1 \pm 0.6 \pm 0.5$		[5] AAIJ	15Y	LHCB	$B^0 \rightarrow \overline{D}^0 \pi^+ \pi^-$
	$2467.6 \pm 1.5 \pm 0.8$	3.5k	[6] LINK	04A	FOCS	γ A

OCCUR=2

[1] From the Dalitz plot analysis including various K^* and D^{**} mesons as well as broad structures in the $K\pi$ S-wave and the $D\pi$ S- and P-waves. NODE=M150M;LINKAGE=A

YOUR NOTE [2] Modeling the $\pi^+\pi^-$ S-wave with the Isobar formalism. NODE=M150M;LINKAGE=B

[3] From the fit of the $M(D^0\pi^+)$ distribution. The widths of the D_1^+ and D_2^{*+} are fixed to 25 MeV and 37 MeV, and A_{D_1} and A_{D_2} are fixed to the theoretical predictions of 3 and -1, respectively. NODE=M150M;LINKAGE=AB

[4] At a fixed width of 50.5 MeV. NODE=M150M;LINKAGE=DE

YOUR NOTE [5] Modeling the $\pi^+\pi^-$ S-wave with the K-matrix formalism. NODE=M150M;LINKAGE=C

[6] Fit includes the contribution from $D_0^*(2400)^\pm$. Not independent of the corresponding mass difference measurement, $(m_{D_2^*(2460)^\pm}) - (m_{D_2^*(2460)^0})$. NODE=M150M;LINKAGE=LI

$D_2^*(2460)^\pm$ WIDTH

NODE=M150W

NODE=M150W

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	COMMENT
46.7 ± 1.2 OUR AVERAGE					
$46.0 \pm 3.4 \pm 3.2$		[1] AAIJ	15X	LHCB	$B^0 \rightarrow \overline{D}^0 K^+ \pi^-$
YOUR DATA $47.3 \pm 1.5 \pm 0.7$		[2] AAIJ	15Y	LHCB	$B^0 \rightarrow \overline{D}^0 \pi^+ \pi^-$
$48.6 \pm 1.3 \pm 1.9$	342k	AAIJ	13CC	LHCB	$pp \rightarrow D^0 \pi^+ X$
$49.7 \pm 3.8 \pm 6.4$	2909	KUZMIN	07	BELL	$e^+ e^- \rightarrow$ hadrons
$34.1 \pm 6.5 \pm 4.2$	3.5k	[3] LINK	04A	FOCS	γ A
$27 \; {}^{+11}_{-8} \pm 5$	310	BERGFELD	94B	CLE2	$e^+ e^- \rightarrow D^0 \pi^+ X$
$23 \pm 9 \pm 5$	185	FRABETTI	94B	E687	γBe $\rightarrow D^0 \pi^+ X$
• • • We do not use the following data for averages, fits, limits, etc. • • •					
YOUR DATA $46.0 \pm 1.4 \pm 1.8$		[4] AAIJ	15Y	LHCB	$B^0 \rightarrow \overline{D}^0 \pi^+ \pi^-$

OCCUR=2

[1] From the Dalitz plot analysis including various K^* and D^{**} mesons as well as broad structures in the $K\pi$ S-wave and the $D\pi$ S- and P-waves. NODE=M150W;LINKAGE=A

YOUR NOTE [2] Modeling the $\pi^+\pi^-$ S-wave with the Isobar formalism. NODE=M150W;LINKAGE=B

[3] Fit includes the contribution from $D_0^*(2400)^\pm$. NODE=M150W;LINKAGE=LI

YOUR NOTE [4] Modeling the $\pi^+\pi^-$ S-wave with the K-matrix formalism. NODE=M150W;LINKAGE=C

$D_2^*(2460)^\pm$ REFERENCES

NODE=M150

AAIJ	15X	PR D92 012012	R. Aaij *et al.*	(LHCb Collab.)	REFID=56588
YOUR PAPER AAIJ	15Y	PR D92 032002	R. Aaij *et al.*	(LHCb Collab.)	REFID=56609
AAIJ	13CC	JHEP 1309 145	R. Aaij *et al.*	(LHCb Collab.)	REFID=55581
ABRAMOWICZ	13	NP B866 229	H. Abramowicz *et al.*	(ZEUS Collab.)	REFID=54743
DEL-AMO-SA...	10P	PR D82 111101	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53534
KUZMIN	07	PR D76 012006	A. Kuzmin *et al.*	(BELLE Collab.)	REFID=51854
LINK	04A	PL B586 11	J.M. Link *et al.*	(FOCUS Collab.)	REFID=49775
BERGFELD	94B	PL B340 194	T. Bergfeld *et al.*	(CLEO Collab.)	REFID=44099
FRABETTI	94B	PRL 72 324	P.L. Frabetti *et al.*	(FNAL E687 Collab.)	REFID=43687
ALBRECHT	89B	PL B221 422	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40736
ALBRECHT	89F	PL B231 208	H. Albrecht *et al.*	(ARGUS Collab.)	REFID=40931

NODE=M203

$D(2750)$

$I(J^P) = \frac{1}{2}(3^-)$

OMITTED FROM SUMMARY TABLE

J^P determined by AAIJ 15Y from the Dalitz plot analysis of $B^0 \rightarrow \overline{D}^0 \pi^+ \pi^-$ decays. J^P consistent with natural parity (AAIJ 13CC). NODE=M203

$D(2750)$ MASS

NODE=M203M

NODE=M203M

VALUE (MeV)	EVTS	DOCUMENT ID		TECN	CHG	COMMENT
2763 ± 4 OUR AVERAGE		Error includes scale factor of 2.3. See the ideogram below.				
YOUR DATA $2798 \pm 7 \pm 7$		[1] AAIJ	15Y	LHCB		$B^0 \rightarrow \overline{D}^0 \pi^+ \pi^-$
$2761.1 \pm 5.1 \pm 6.5$	14k	AAIJ	13CC	LHCB	0	$pp \rightarrow D^{*+} \pi^- X$
$2760.1 \pm 1.1 \pm 3.7$	56k	AAIJ	13CC	LHCB	0	$pp \rightarrow D^+ \pi^- X$

OCCUR=2

	2771.7± 1.7± 3.8	20k	AAIJ	13CC	LHCB	+	$pp \to D^0 \pi^+ X$	OCCUR=3
	2752.4± 1.7± 2.7	23.5k	[2] DEL-AMO-SA..	10P	BABR	0	$e^+ e^- \to D^{*+} \pi^- X$	
	2763.3± 2.3± 2.3	11.3k	[2] DEL-AMO-SA..	10P	BABR	0	$e^+ e^- \to D^+ \pi^- X$	OCCUR=2
	2769.7± 3.8± 1.5	5.7k	[2,3] DEL-AMO-SA..	10P	BABR	+	$e^+ e^- \to D^0 \pi^+ X$	OCCUR=3
	• • • We do not use the following data for averages, fits, limits, etc. • • •							
YOUR DATA	2802 ±11 ±10		[4] AAIJ	15Y	LHCB		$B^0 \to \overline{D}^0 \pi^+ \pi^-$	OCCUR=2

YOUR NOTE [1] Modeling the $\pi^+ \pi^-$ S-wave with the Isobar formalism. NODE=M203M;LINKAGE=A

[2] The states observed in the $D^* \pi$ and $D \pi$ final states are not necessarily the same. NODE=M203M;LINKAGE=DE

[3] At a fixed width of 60.9 MeV. NODE=M203M;LINKAGE=DA

YOUR NOTE [4] Modeling the $\pi^+ \pi^-$ S-wave with the K-matrix formalism. NODE=M203M;LINKAGE=B

$D(2750)$ WIDTH

NODE=M203W

NODE=M203W

	VALUE (MeV)	*EVTS*	*DOCUMENT ID*	*TECN*	*CHG*	*COMMENT*	
	65 ± 5 OUR AVERAGE						
YOUR DATA	105 ±18 ±24		[5] AAIJ	15Y	LHCB		$B^0 \to \overline{D}^0 \pi^+ \pi^-$
	74.4± 3.4±37.0	14k	AAIJ	13CC	LHCB	0	$pp \to D^{*+} \pi^- X$
	74.4± 3.4±19.1	56k	AAIJ	13CC	LHCB	0	$pp \to D^+ \pi^- X$
	66.7± 6.6±10.5	20k	AAIJ	13CC	LHCB	+	$pp \to D^0 \pi^+ X$
	71 ± 6 ±11	23.5k	[6] DEL-AMO-SA..	10P	BABR		$e^+ e^- \to D^{*+} \pi^- X$
	60.9± 5.1± 3.6	11.3k	[6] DEL-AMO-SA..	10P	BABR		$e^+ e^- \to D^+ \pi^- X$
	• • • We do not use the following data for averages, fits, limits, etc. • • •						
YOUR DATA	154 ±27 ±16		[7] AAIJ	15Y	LHCB		$B^0 \to \overline{D}^0 \pi^+ \pi^-$

YOUR NOTE [5] Modeling the $\pi^+ \pi^-$ S-wave with the Isobar formalism. NODE=M203W;LINKAGE=A

[6] The states observed in the $D^* \pi$ and $D \pi$ final states are not necessarily the same. NODE=M203W;LINKAGE=DE

YOUR NOTE [7] Modeling the $\pi^+ \pi^-$ S-wave with the K-matrix formalism. NODE=M203W;LINKAGE=B

$D(2750)$ REFERENCES

NODE=M203

YOUR PAPER	AAIJ 15Y PR D92 032002	R. Aaij *et al.*	(LHCb Collab.) JP	REFID=56609
	AAIJ 13CC JHEP 1309 145	R. Aaij *et al.*	(LHCb Collab.)	REFID=55581
	DEL-AMO-SA... 10P PR D82 111101	P. del Amo Sanchez *et al.*	(BABAR Collab.)	REFID=53534