

A Frequently Asked Question About Topological Persistence

Why did it take so long for the ideas that eventually gave rise to Topological Data Analysis to be accepted by the mathematical community?

It was probably due to an unfortunate combination of my own lack of judgment in choosing the journals to which I submitted my papers, the incompleteness of my initial results, and a certain—perhaps natural—reluctance on the part of journals to embrace the new ideas they contained.

As an example, readers who are curious will find below the rejection letters for the paper *Metric Homotopies*, one of the first works to propose the idea of topological persistence in the setting of zero-dimensional homology, developed during the 1990s under the name *Size Theory*. The paper was eventually published in *Atti del Seminario Matematico e Fisico dell'Università di Modena* in 1999, ten years after it was first written.

Let me be clear: I do not intend this as a criticism of the journals or of their editors, who made their decisions on the basis of the referees' reports.

My only hope is that these letters may help illustrate the difficulties that topological persistence encountered in gaining recognition within the mathematical community.

PF

American Mathematical Society

Transactions

Department of Mathematics
Stanford University
Stanford, CA 94305

August 29, 1989

Professor Patrizio Frosini
Dottorato de Ricerca
Istituto Matematico "U. Dini"
Viale Morgagni, 67/A
50134 Firenze Italy

Dear Professor Frosini,

I regret to inform you that the referee of your paper:

"Metric Homotopies"

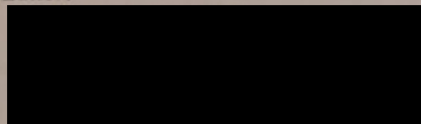
did not find it suitable for publication in the Transactions. A copy of the referee's report is enclosed.

Sincerely,



ADVANCES IN APPLIED MATHEMATICS

Editor:



Publisher:

ACADEMIC PRESS, INC.
Harcourt Brace Jovanovich Building
1250 Sixth Avenue
San Diego, California 92101

January 9, 1990

Dr. Patrizio Frosini
Dottorato di Ricerca
Ist. Matematico "U. Dini"
V.le Morgagne, 67/A
I - 50134 Firenze
ITALY

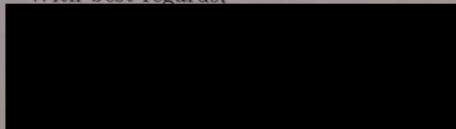
Dear Dr. Frosini,

Thank you for submitting your paper "Metric Homotopies" for consideration in *Advances in Applied Mathematics*.

Much as we would like to consider your paper for publication, we are very reluctantly forced to the decision not to do so. *Advances* has at present a considerable backlog which is running almost to three years. As long as the backlog does not subside, this journal will be forced to accept only a very few invited papers.

We hope you will consider publishing in *Advances in Applied Mathematics* at a future date.

With best regards,

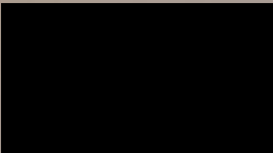


Editor



Manuscript encl.

LONDON MATHEMATICAL SOCIETY



School of Mathematics,
U.W.C.C.
Senghenydd Road,
Cardiff CF2 4AG.

3rd April, 1990

Professor Patrizio Frosini,
Istituto Matematico "Ulisse Dini",
Universita di Firenze,
Viale Morgagni 67/a,
50134 FIRENZE,
Italy.

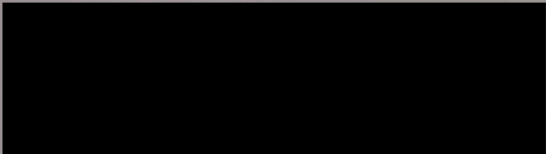
Dear Professor Frosini,

Thank you for submitting your paper "Metric Homotopies"
number 38.323, for publication in the Proceedings of the London Mathematical
Society.

I regret that the Society cannot offer to publish your paper
for you. We are under extremely severe pressure for space, and can accept
only those papers that receive the highest recommendations; the judgement
we got about your paper was not quite good enough. However, please do
submit it elsewhere.

We are not returning your typescript in the interests of
economy. However, should you require it, please let us know, and we will
send it to you.

Yours sincerely,



PACIFIC JOURNAL OF MATHEMATICS

DEPARTMENT OF MATHEMATICS
UNIVERSITY OF CALIFORNIA
LOS ANGELES, CALIFORNIA 90024-1555

July 17, 1990

Professor Patrizio Frosini
Istituto Matematico "Ulisse Dini"
Universita di Firenze
Viale Morgagni 67/a
50134 Firenze
Italy

Dear Professor Frosini:

Thank you for submitting your paper

METRIC HOMOTOPIES

to the Pacific Journal of Mathematics. We regret that we must return your paper to you. The reason for this is that the Pacific Journal is attempting to achieve and maintain a backlog of 10 months, and at the same time, to do this without becoming too specialized. As a result we are returning without prejudice papers which, in our opinion, would be more suitable for one of the many fine specialized journals now in existence.

Sincerely yours,

MATHEMATISCHES INSTITUT
UNIVERSITÄT ERLANGEN-NÜRNBERG
Prof. Dr. Karl Strambach

Erlangen, December 10, 1990

Postanschrift - mailing address:
Mathematisches Institut
Universität Erlangen - Nürnberg
Bismarckstrasse 1½
D-8520 Erlangen

Tel. (09131) 85 2500 (Durchwahl)

Dott. Patrizio Frosini
Dottorato di Ricerca
Ist. Mathematico 'U. Dini'
V. le Morgagni, 67/A

I-50134 Firenze

Italien

Dear Dr. Frosini,

I am sorry having to inform you in the name of the editors of Forum Mathematicum that the paper

Patrizio Frosini: METRIC HOMOTOPIES

cannot be accepted for publication in Forum Mathematicum. For your information please find the referee's report enclosed.

Considering that, as mentioned in the report, sections 4 and 5 of your paper contain new facts, I would like to make you the following suggestion.

I am a co-editor of the journal [REDACTED] which is published in [REDACTED]. If you are prepared to shorten your paper according to the comments made by the referee, I would be glad if, in case you are interested, you decided to resubmit a revised version of your paper in which the known facts are omitted, for publication in [REDACTED].

I would be glad to hear from you again in this matter and remain sincerely yours,

[REDACTED]

Encl.



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3300 AA Dordrecht
The Netherlands

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Date 17/06/91

Dr P. Frosini
Dipart. di Matematica
P. di Porta San Donato, 5

40127 Bologna
ITALY

F2 103948 JOFLETF2

Our ref: ACAP00603

Re: Metric homotopies
FROSINI

Dear Dr Frosini

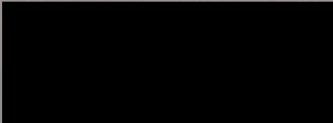
We have received the reports from our advisors on your manuscript.

With regret, I must inform you that, based on the advice received, the Editor feels that your manuscript cannot be accepted for publication in ACTA APPLICANDAE MATHEMATICAE in its present form.

I have enclosed the reviewers' comments for your perusal and I am also returning the manuscript to you.

I would like to thank you very much for forwarding your manuscript to us for consideration and wish you every success in finding an alternative form of publication.

Sincerely yours,
KLUWER ACADEMIC PUBLISHERS



Stichting Mathematisch Centrum
Centrum voor Wiskunde en Informatica

Postbus 4079 1009 AB Amsterdam

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Telefoon +31 20 592 9333 Telex 12571 mactrl nl Fax +31 20 592 4199

Uw referentie

Datum

Onze referentie

Datum

Telefoon

13 August 1991

+31 20 592 4166

Dr. Patrizio Frosini

Dear dr. Frosini,

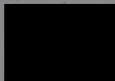
Thank you for sending your paper on metric homotopies for possible publication in my journal *Acta Applicandae Mathematicae*. I regret to have to inform you that in its present form I can not accept your paper.^{*)} However, instead of sending you a standard rejection message I would like to go into the matter a little bit more deeply.

The fact is that I like your basic ideas and initial results quite well. It is also a topic that, when fleshed out with applications, would fit my journal very well. On the other hand your paper in its present form is not very convincing as a mature piece of research; in fact I feel that you would do your ideas and yourself an injustice if your paper were published in its present form. What I would like to propose is that you thoroughly revise your present paper, and combine it with the 'application paper' that you promise in the current paper, to obtain a large complete paper. I shall be very happy to reconsider such a complete new version for my journal.

Yours sincerely,



^{*)} You should already have had a communication to that effect earlier from the publisher



Aequationes Mathematicae

EDITORIAL OFFICE
Dept. of Pure Mathematics
UNIVERSITY OF WATERLOO

WATERLOO, ON
CANADA
N2L 3G1

August 6, 1993

Professor Patrizio Frosini
Dipartimento di Matematica
Universita degli studi di Bologna
Piazza di Porta S. Donato 5
40127 Bologna
Italy

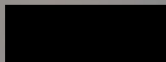
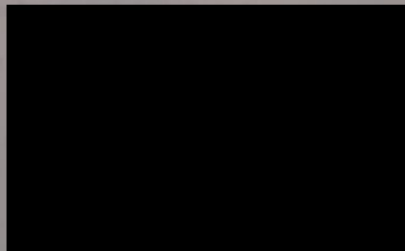
Dear Professor Frosini:

I regret to advise you that the referees have recommend against the publication of your paper entitled, *Metric Homotopies in Aequationes Mathematicae*. In view of the referees' reports we encourage you to add further results (some of which you may have already developed since you submitted this paper) and write a new article, richer in content.

Enclosed please find a copy of your paper together with copies of the referees' reports.

Thank you for considering our journal.

Yours sincerely,



Enclosures

 3 novembre 1994.

Prof. P. Frosini
Dipartimento di Matematica
Università
Piazza Porta S. Donato, 5
40127 Bologna

Gentile Prof. Frosini,

sono spiacente di doverLa informare che il Suo lavoro "Metric homotopies" non è adatto per essere pubblicato sul Bollettino della Unione Matematica Italiana. Accludo un riassunto delle osservazioni del referee.

Cordiali saluti.

