ANNALS OF THE ACADEMY OF ROMANIAN SCIENTISTS

Series on MATHEMATICS AND ITS APPLICATIONS

Contents

VLADIMIR RASVAN The seminar "Qualitative theory of differential equations and control theory" – 60 years	3
HENRI BONNEL Post-pareto analysis for multiobjective parabolic control systems	13
AURELIAN CERNEA A note on mild solutions for nonconvex fractional semilinear differential inclusions	35

VASILE DRAGAN, TOADER MOROZAN, ADRIAN-MIHAIL STOICA H2 Optimal filtering for discrete-time linear stochastic systems with periodic coefficients and markovian jumping

VASILE DRAGAN, TOADER MOROZAN, VIORICA UNGUREANU Some Lyapunov type positive operators on ordered banach spaces

(continued on inside front cover)

ACADEMY OF ROMANIAN SCIENTISTS



ANNALS

SERIES ON MATHEMATICS AND ITS APPLICATIONS

|--|

46

65

2013

TOPICS: ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS OPTIMIZATION, OPTIMAL CONTROL AND DESIGN NUMERICAL ANALYSIS AND SCIENTIFIC COMPUTING ALGEBRAIC, TOPOLOGICAL AND DIFFERENTIAL STRUCTURES

- PROBABILITY AND STATISTICS
- ALGEBRAIC AND DIFFERENTIAL GEOMETRY
- MATHEMATICAL MODELLING IN MECHANICS
- **ENGINEERING SCIENCES**
- MATHEMATICAL ECONOMY AND GAME THEORY
- MATHEMATICAL PHYSICS AND APPLICATIONS

GUEST EDITOR: TOADER MOROZAN

EDITURA ACADEMIEI OAMENILOR DE STIINȚĂ DIN ROMÂNIA



NUMBER 1-2

ISSN 2066 - 6594

Linear differential games with vector-valued criteria	108
ANDREI HALANAY, CORNEL MUREA, DAN TIBA Existence and approximation for a steady fluid-structure interaction problem using fictitious domain approach with penalization	120
DOINA CANDEA, ANDREI HALANAY, RODICA RADULESCU Stability analysis in a model for stem-like hematopoietic cells dynamics in leukemia under treatment	148
VALERIU PREPELITA, TIBERIU VASILACHE Minimal invariant subspaces and reachability of 2D hybrid LTI systems	177
DAN TIBA The implicit function theorem and implicit parametrizations	193
Short Notes	
DIANA MERLUSCA A duality algorithm for the obstacle problem	209

INFORMATION FOR AUTHORS SUBMITTING MANUSCRIPTS IN ELECTRONIC FORM

 Ordinary and partial differential equations
 Optimization, optimal control and design
 Numerical analysis and scientific computing
 Algebraic, topological and differential structures
Probability and statistics
Algebraic and differential geometry
 Mathematical modelling in mechanics and engineering science
 Mathematical economy and game theory
 Mathematical physics and applications
We encourage the publication of contributed papers, short notes, s a novel and correct content, in any area of mathematics and i published with priority on the recommendation of one of the men should be 3-6 pages long. They may not include proofs, but supple the statements are required and will be archivated. The authors extended version of the short note, elsewhere. Two issues are electronic and printed form. Special issues devoted to International mathematical events will be also considered.
The manuscript (in English) should be sent via email as a PDF file, any member of the Editorial Board together with a cover letter sta

AND ITS APPLICATIONS covers the following fields:

The manuscript (in English) should be sent via email as a PDF file, either to the series editors or to any member of the Editorial Board together with a cover letter stating the intention to publish it in Mathematics and its Applications. The submission of a manuscript entails the assurance that it has not been published or it is not under consideration for publication elsewhere and that all the coauthors have approved its submission to Mathematics and its Applications. The Editorial Board encourages the authors to post in a preprint format on <u>arXiv</u> their articles submitted to MATHEMATICS AND ITS APPLICATIONS and to add later the Journal <u>Reference</u>. A template that precises the style and the format of the manuscripts may be found at <u>www.mathematics-and-its-applications.com</u> where the online version is published.

After refereeing is complete, an official letter of acceptance or refusal is sent by email to the corresponding author together with the observations of the reviewers. For publication, the LATEX and PDF files of the revised paper are required, which may be edited by our Secretariate to follow the general presentation rules of the journal. If the manuscript includes figures, they should be added as separate files in the same email message. All **line drawings** and **photos** will be in **grey scale** in the printed version and may be coloured in the electronic version.Very long papers may be divided in several parts and published in subsequent issues of the journal.

A PDF file with the proofs will be sent to the corresponding author with indications for corrections.

For communication, the name, phone number and e-mail address of the author to whom proofs should be sent must be indicated. The corresponding author is responsible for informing all co-authors that the manuscript has been submitted for this series.

The ANNALS OF THE ACADEMY OF ROMANIAN SCIENTISTS, series on MATHEMATICS

nces

survey articles and reviews, with its applications. Short notes are mbers of the Editorial Board and lementary materials supporting all s are encouraged to publish the e published every year, both in al Conferences or other important