



About

The International Journal of Applied Mathematics and Computer Science is a quarterly published in Poland since 1991 by the University of Zielona Góra in partnership with the Lubuskie Scientific Society and De Gruyter Poland, under the auspices of the Committee on Automatic Control and Robotics of the Polish Academy of Sciences. It strives to meet the demand for the presentation of interdisciplinary research in various fields related to control theory, applied mathematics, scientific computing, and computer science.

In particular, AMCS publishes original, high-quality full-length research papers in the following areas: modern control theory and practice; artificial intelligence methods and their applications; applied mathematics and mathematical optimisation techniques; and mathematical methods in engineering, computer science and biology.

Chief indexing and abstracting services

ACM Digital Library, Applied Mechanics Reviews, Clarivate Analytics (formerly Thomson Reuters), Current Mathematical Publications (AMS), DBLP Computer Science Bibliography, EBSCO, Elsevier, Google Scholar, Inspec, Mathematical Reviews (MathSciNet), Proquest, Zentralblatt MATH, and others.

Jan SOKOLOWSKI

Impact Factor

1.694 (2017) 5-Year **IF**: **1.712** (2017)



Editor-in-Chief

Józef KORBICZ University of Zielona Góra, Poland

Deputy Editor

Dariusz UCIŃSKI University of Zielona Góra, Poland

Associate Editors

Vincent COCQUEMPOT
Lille 1 University, France
Stefan DOMEK
West Pomeranian University of Technology in Szczecin, Poland
Joanna KOŁODZIEJ
Cracow University of Technology, Poland
Marios M. POLYCARPOU
University of Cyprus, Nicosia, Cyprus
Vincenç PUIG
Technical University of Catalonia, Barcelona, Spain
Silvio SIMANI
University of Ferrara, Italy
Yonghong TAN
Shanghai Normal University, China

Board Members

Harald ASCHEMANN
University of Rostock, Germany
Cherukuri ASWANI KUMAR
VIT University, Vellore, India
Czesław BAJER
Polish Academy of Sciences, Warsaw, Poland
Andrzej BARTOSZEWICZ
Technical University of Łódź, Poland
Marek BODNAR
University of Warsaw, Poland
Jérôme CIESLAK
University of Bordeaux, France
Julio CLEMPNER
National Polytechnic Institute, Mexico City, Mexico
Bogusław CYGANEK

AGH University of Science and Technology, Cracow, Poland

Miroslav FIKAR Slovak University of Technology in Bratislava, Slovakia Luís GOMES New University of Lisbon, Portugal Xiao HE Tsinghua University, Beijing, China Bin JIANG Nanjing University of Aeronautics and Astronautics, China Janusz KACPRZYK Polish Academy of Sciences, Warsaw, Poland Mehmet KARAKÖSE Firat University, Elazığ, Turkey Jerzy KLAMKA Silesian University of Technology, Gliwice, Poland Jacek KLUSKÁ Rzeszów University of Technology, Poland Jan M. KOŚCIELNY

Warsaw University of Technology, Poland
Zdzisław KOWALCZUK
Rong
Gdańsk University of Technology, Poland
Marek KURZYŃSKI
Wrocław University of Technology, Poland
Vyacheslav MAKSIMOV
Russian Academy of Sciences, Ural Branch, Ekaterinburg, Russia
Krzysztof MALINOWSKI
Warsaw University of Technology, Poland
Wojciech MITKOWSKI
AGH University of Science and Technology, Cracow, Poland
Warsac

Stanisław OSOWSKI
Warsaw University of Technology, Poland
Yongping PAN
National University of Singapore, Singapore
Ronald J. PATTON
University of Hull, UK
Witold PEDRYCZ

University of Alberta, Edmonton, Canada Piotr PORWIK University of Silesia in Katowice, Poland

Jianbin QIU
Harbin Institute of Technology, China
Ewaryst RAFAJŁOWICZ
Wrocław University of Technology, Poland
Rotislay RAZUMCHIK

Russian Academy of Sciences, Moscow, Russia Leszek RUTKOWSKI Technical University of Częstochowa, Poland Horst SCHUITF

Horst SCHULTE
HTW Berlin, Germany
Piotr SKRZYPCZYŃSKI
Poznań University of Technology, Poland
Roman SŁOWINSKI

Poznari University of Technology, Poland Mircea-Traian SOFONEA University of Perpignan, France

University of Lorraine, Nancy, France Jerzy STEFANOWSKI Poznań University of Technology, Poland Andrzej ŚWIĘRNIAK Silesian University of Technology, Gliwice, Poland Zoltán SZABÓ Hungarian Academy of Sciences, Budapest, Hungary Ryszard TADEUSIEWICZ AGH University of Science and Technology, Cracow, Poland Piotr TATJEWSKI Warsaw University of Technology, Poland Didier THEILLIOL University of Lorraine, Nancy, France Ewaryst TKACZ Silesian University of Technology in Gliwice, Poland Marcin WITCZAK University of Zielona Góra, Poland Rongni YANG Shandong University, Jinan, China Shen YIN Harbin Institute of Technology, China Guisheng ZHAI Shibaura Institute of Technology, Tokyo, Japan Alexey ZHIRABOK Far Eastern Federal University, Vladivostok, Russia Teresa ZIELIŃSKA Warsaw University of Technology, Poland Jacek M. ZURADA

Editorial Office

University of Zielona Góra Institute of Control & Computation Engineering ul. prof. Z. Szafrana 2 65-516 Zielona Góra Poland

+48 683282506

 amcs@uz·zgora·pl
 www·amcs·uz·zgora·pl

Agnieszka ROŻEWSKA

anager

Agata WIŚNIEWSKA-KUBICKA Technical Editor



Requirements in brief

Our basic rules include electronic paper submission and processing, the LaTeX format following a special AMCS style, a license to publish, and page charges.

Paper submission

Paper proposals may be submitted only through our on-line submission system. If suitable for our journal, the papers will be subject to a full review procedure, and a decision on whether or not to accept the paper will be made based on the reviewers' comments.

Paper style

The style of papers to be published in AMCS is determined by a special LaTeX class, which is described in detail in our instructions for authors. No other formats are accepted.

License to publish

All authors must sign a license to publish upon paper acceptance. The license governs in detail the commercial and non-commercial use of papers published by our journal, and determines user and author rights.

Page charge

The authors are expected to pay page charges, which cover the costs of the publishing process and will be invoiced upon paper acceptance.

Provisions

One sample copy of the journal and the electronic version of the paper are provided for authors once the issue has been published.

Details, submission and downloads

The complete guide for authors can be found on our website at www.amcs.uz.zgora.pl.

Present your research with us!

www.amcs.uz.zgora.pl

© University of Zielona Góra. Some rights reserved. Contents available for non-commercial use under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 (CC BY-NC-ND 3.0) license. Printed in 130 copies. Primary version: print.



Our subscription is annual and covers four printed issues.

2019 Rates

Domestic

Individuals & scientific institutions: 180 PLN Other customers: 480 PLN

Foreign

Individuals: 120 EUR Institutions: 200 EUR

Prices exclusive of VAT. Postage free for standard delivery.

Payment methods

We accept bank transfers and off-line credit card payments.

Orders

Please contact the Editorial Office for subscription orders.



Recent special issues and sections

2018, Vol. 28, No. 2: Special section
ADVANCED DIAGNOSIS AND FAULT-TOLERANT CONTROL METHODS
Editors: Vicenç PUIG, Dominique SAUTER, Christophe AUBRUN,
Horst SCHULTE
Authors: S. Pröll et al., S. Simani et al., B. Li et al.,
M. Quiñones-Grueiro et al., M. Pazera et al., G.P. Falconí et al.,
N. Harrabi et al.

2018, Vol. 28, No. 1: Special section ISSUES IN PARAMETER IDENTIFICATION AND CONTROL *Editor*: Abdel AITOUCHE *Authors*: K.A. Markowski, E. Zattoni, M. Patan and D. Kowalów, K. Srinivasarengan *et al.*, S. Li *et al.*, M. Zhou *et al.*, F. Karimi Pour *et al.*, N. El Fezazi *et al.*

2017, Vol. 27, No. 4: Special section EXPLORING COMPLEX AND BIG DATA Editors: Jerzy STEFANOWSKI, Krzysztof KRAWIEC, Robert WREMBEL Authors: J. Stefanowski et al., R. Bembenik et al., B. Bilalli et al., M. Gorawski and M. Lorek, M. Koziarski and M. Woźniak, A.I. Weinberg and M. Last

2017, Vol. 27, No. 3: Special section SYSTEMS ANALYSIS: MODELLING AND CONTROL Editors: Vyacheslav MAKSIMOV, Boris MORDUKHOVICH Authors: M. Blizorukova and V. Maksimov, V.I. Maksimov and B.S. Mordukhovich, V.G. Pimenov and A.S. Hendy, R. Rabah et al.