

GEORGIAN MATHEMATICAL JOURNAL

EDITOR-IN-CHIEF

Ivan Kiguradze, *Tbilisi*

EXECUTIVE EDITOR

Tengiz Buchukuri, *Tbilisi*

EDITORIAL SECRETARY

Maia Kvinikadze, *Tbilisi*

EDITORIAL BOARD

Hans-Joachim Baues, *Bonn*

Oleg V. Besov, *Moscow*

Bogdan Bojarski, *Warsaw*

Pavel Drábek, *Plzeň*

Roland Duduchava, *Tbilisi*

Hans-Jürgen Engelbert, *Jena*

Lasha Ephremidze, *Tbilisi*

Revaz Gamkrelidze, *Moscow*

Hvedri Inassaridze, *Tbilisi*

Mamuka Jibladze, *Tbilisi*

Tornike Kadeishvili, *Tbilisi*

Otto H. Kegel, *Freiburg*

Alexander Kharazishvili, *Tbilisi*

Sergo Kharibegashvili, *Tbilisi*

Estate Khmaladze, *Wellington*

Tariel Kiguradze, *Melbourne*

Samuel Krushkal, *Ramat Gan*

Jaroslav Kurzweil, *Prague*

Stanislaw Kwapień, *Warsaw*

Hans Rudolf Lerche, *Freiburg*

Michael Mania, *Tbilisi*

Jean Mawhin, *Louvain-la-Neuve*

Alexander Meskhi, *Tbilisi*

Paolo Emilio Ricci, *Rome*

Vaja Tarieladze, *Tbilisi*

Hans Triebel, *Jena*

Fabio Zanolin, *Udine*

DE GRUYTER

GEORGIAN MATHEMATICAL JOURNAL publishes research articles of best scientific standard in pure and applied mathematics. Special emphasis is put on the presentation of results obtained by Georgian mathematicians.

All information regarding notes for contributors, subscriptions, Open access, back volumes and orders is available online at www.degruyter.com/gmj.

ABSTRACTED/INDEXED IN Baidu Scholar · Cabells Journalytics · CNKI Scholar (China National Knowledge Infrastructure) · CNPIEC: cnpLINKer · Dimensions · EBSCO (relevant databases) · EBSCO Discovery Service · Genamics JournalSeek · Google Scholar · Japan Science and Technology Agency (JST) · J-Gate · Journal Citation Reports/Science Edition · JournalGuide · JournalTOCs · KESLI-NDSL (Korean National Discovery for Science Leaders) · Mathematical Reviews (MathSciNet) · MyScienceWork · Naver Academic · Naviga (Softweco) · Primo Central (ExLibris) · Publons · QOAM (Quality Open Access Market) · ReadCube · SCImago (SJR) · SCOPUS · Semantic Scholar · Sherpa/RoMEO · Summon (ProQuest) · TDNet · Ulrich's Periodicals Directory/ulrichsweb · WanFang Data · Web of Science: Science Citation Index Expanded · WorldCat (OCLC) · X-MOL · Yewno Discover · zbMATH Open.

ISSN 1072-947X · e-ISSN 1572-9176 · CODEN GMJOE5

RESPONSIBLE EDITOR Tengiz Buchukuri, A. Razmadze Mathematical Institute of I. Javakhishvili Tbilisi State University,
2 M. Aleksidze Str., Turn 2, Tbilisi 0193, Georgia.
e-mail: t_buchukuri@yahoo.com

PUBLISHER Walter de Gruyter GmbH, Berlin/Boston, Genthiner Straße 13, 10785 Berlin, Germany

JOURNAL COORDINATOR Masha Dorogova, e-mail: masha.dorogova@degruyter.com

ADVERTISEMENTS e-mail: anzeigen@degruyter.com

© 2023 Walter de Gruyter GmbH, Berlin/Boston

TYPESETTING WisSat Publishing + Consulting GmbH, Fürstenwalde

PRINTING Franz X. Stickle Druck und Verlag e.K., Ettenheim



Offenlegung der Inhaber und Beteiligungsverhältnisse gem. § 7a Abs. 1 Ziff. 1, Abs. 2 Ziff. 3 des Berliner Pressegesetzes: Die Gesellschafter der Walter de Gruyter GmbH sind: Cram, Gisela, Rentnerin, Berlin; Cram, Dr. Georg-Martin, Unternehmens-Systemberater, Stadtbergen; Cram, Maike, Wien (Österreich); Cram, Jens, Mannheim; Cram, Ingrid, Betriebsleiterin, Tuxpan/Michoacan (Mexiko); Cram, Sabina, Mexico, DF (Mexiko); Cram, Silke, Wissenschaftlerin, Mexico DF (Mexiko); Cram, Björn, Aachen; Cram, Berit, Hamm; Cram-Gomez, Susana, Mexico DF (Mexiko); Cram-Heydrich, Walter, Mexico DF (Mexiko); Cram-Heydrich, Kurt, Angestellter, Cancún (Mexiko); Duvenbeck, Brigitta, Oberstudienrätin i.R., Bad Homburg; Gädeke, Gudula, M.A., Atemtherapeutin/Lehrerin, Tübingen; Gädeke, Martin, Student, Ingolstadt; Gomez Cram, Arturo, Walter, Global Key Account Manager, Bonn; Gomez Cram, Ingrid Arlene, Studentin, Mexico, DF (Mexiko); Gomez Cram, Roberto, Assistant Professor, London (UK); Lubasch, Dr. Annette, Ärztin, Berlin; Schütz, Dr. Christa, Ärztin, Mannheim; Schütz, Sonja, Diplom.-Betriebswirtin (FH), Berlin; Schütz, Juliane, Berlin; Schütz, Antje, Berlin; Schütz, Valentin, Mannheim; Seils, Dorothee, Apothekerin, Stuttgart; Seils, Gabriele, Journalistin, Berlin; Seils, Christoph, Journalist, Berlin; Siebert, John-Walter, Pfarrer, Oberstenfeld; Anh Vinh Alwin Tran, Student, Zürich (Schweiz), Tran, Renate, Mediatorin, Zürich (Schweiz); Carmen Siebert, Angestellte, Kempten; Duyen Anh Johann Tran, Architekt, Zürich (Schweiz); Lang Lieu Laurin Tran, Lehrperson, Zürich (Schweiz); Duyen Mai Marie Tran, Studentin, Zürich (Schweiz); Anh Huy Merlin Tran, Schüler, Zürich (Schweiz).

Contents

Shota Akhalaia, Malkhaz Ashordia, Mzia Talakhadze

On the well-posedness of nonlocal boundary value problems for a class of systems of linear generalized differential equations with singularities — 1

Farouq S. Alshormani, Hocine Guediri

Products of Toeplitz operators with angular symbols — 19

Mohammad Ashraf, Mohammad Afajal Ansari, Md Shamim Akhter

Characterization of Lie-type higher derivations of triangular rings — 33

Malkhaz Bakuradze, Alexander Gamkrelidze

On classifying map of the integral Krichever–Hoehn formal group law — 47

Slim Chelly, Aref Jeribi, Bilel Krichen

Democompactness perturbation in Banach algebras and some stability results — 53

Nilay Değirmen, Birsen Sağır

On bicomplex BC-modules $I_p^k(\mathbb{BC})$ and some of their geometric properties — 65

Mohamed El Ouaarabi, Chakir Allalou, Said Melliani

On a class of nonlinear degenerate elliptic equations in weighted Sobolev spaces — 81

Mekki Hammi, Mohamed Ali Hammami, Abbas Imad Eddine

Asymptotic behaviors of solutions of a class of time-varying differential equations — 95

Ammar S. Issa, Maslina Darus

Fekete–Szegő problem of strongly α -close-to-convex functions associated with generalized fractional operator — 111

Surinder Pal Singh Kainth, Narinder Singh

Some properties of Vitali sets — 117

Sulkhan Mukhigulashvili

Optimal conditions of solvability of periodic problem for systems of differential equations with argument deviation — 121

Mohammad Aslam Siddeeqe, Ali Ahmed Abdullah, Nazim Khan

Generalized derivations with Engel condition on Lie ideals of prime rings — 137

Devaraj Vivek, Elsayed M. Elsayed, Kuppusamy Kanagarajan

Attractivity of implicit differential equations with composite fractional derivative — 151

Corrigendum

Musa Cakir, Baransel Gunes

Exponentially fitted difference scheme for singularly perturbed mixed integro-differential equations — 159

