

LITHUANIAN MATHEMATICAL SOCIETY
VILNIUS UNIVERSITY

**LIETUVOS
MATEMATIKOS
RINKINYS**

**Proceedings of the Lithuanian
Mathematical Society**

Series A

Volume 57

Vilnius University
Vilnius 2016

UDK 51(474.5)
Li 301

LIETUVOS MATEMATIKOS RINKINYS
Proceedings of the Lithuanian Mathematical Society
Series A

The LVI Conference of LMS was held on June 20–21, 2016
at Vilnius Gediminas Technical University

Editor-in-Chief

R. Leipus, Vilnius University

Associate Editor

S. Rutkauskas, Vilnius University

Editorial Board

Kaunas University of Technology: V. Pekarskas, B. Narkevičienė

Vilnius Gediminas Technical University: N. Kosareva, A. Krylovas,
K. Padvelskis

Vilnius University: K. Kubilius, A. Laurinčikas, E. Mazētits, J. Šiaulys,
A. Štikonas

Executive Secretary

R. Činčienė, e-mail: rita.cinciene@mii.vu.lt

Editorial Office:

VU Institute of Mathematics and Informatics
Akademijos str. 4, LT-08663 Vilnius
Tel.: 2109 336, e-mail: lmr@mii.vu.lt

LIETUVOS MATEMATIKOS RINKINYS
Proceedings of the Lithuanian Mathematical Society
Series A
Volume 57

2016 11 30. 6 apsk. sp. 1.
Parengė ir išleido VU Matematikos ir informatikos institutas
Akademijos 4, LT-08663 Vilnius

Contents

MATHEMATICS

R. Bieliauskas, E. Paliokas Bitcoin – a way to reach consensus in a completely decentralized manner	1
P. Daniušis, P. Vaitkus, L. Petkevičius Hilbert–Schmidt component analysis	7
J.V. Daugmaudis, A. Laurynėnas, J. Kulys, F. Ivanauskas A general biochemical kinetics data fitting algorithm for quasi-steady-state detection	12
A. Indriulionis, P. Vaitkus Radial basis function method modelling borehole heat transfer: the practical application	18
A.J. Janavičius, S. Turskienė Nonlinear thermal conductivity in gases	24
A. Kasparavičiūtė, D. Deltuvienė Discounted payments theorems for large deviations	29
P. Katauskis, Ž. Vidutytė Numerical study of two-molecular catalytic reaction on composite catalyst . . .	35
E. Laurinavičius, D. Rimkuvienė, A. Sakalauskaitė The basic solution ellipsoid method approach for the efficiency measurement problems	41
A.V. Misiukas Misiūnas, T. Meškauskas, R. Samaitienė Derivative parameters of electroencephalograms and their measurement methods	47
A. Molyte, A. Urnikyte, V. Kučinskas A comparative analysis of mathematical methods for effective population size estimation	53

G. Paukštaitė, A. Štikonas	
Nullspace of the m -th order discrete problem with nonlocal conditions	59
A. Podviezko, V. Podvezko	
Transformation of criteria with a-priori chosen optimal values	65
A. Rimkevičienė	
A discrete limit theorem for the periodic Hurwitz zeta-function. II	71
V. Skakauskas, S. Repšys	
Modelling of an age-structured population dynamics taking into account a discrete set of offspring	75
G. Stabingis	
Spatial classification rule with distance in three dimensional space	81
INFORMATICS	
A. Mihalkovich, E. Sakalauskas	
On the security of RSA textbook signature scheme on Paillier ciphertext	86
T. Petkus, O. Kurasova, E. Filatovas, A. Igumenov, S. Ivanikovas	
Effective utilization of processors in computer cluster when solving problems of various parallelizable scales	91
R. Pupeikis	
Revised fast convolution	97