13th International Conference on Applied Physics and Mathematics (ICAPM 2023)

Journal of Physics: Conference Series Volume 2543

Singapore 10 - 12 March 2023

ISBN: 978-1-7138-7703-5

ISSN: 1742-6588

Printed from e-media with permission by:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

This work is licensed under a Creative Commons Attribution 3.0 International Licence. Licence details: http://creativecommons.org/licenses/by/3.0/.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2023)

For permission requests, please contact the Institute of Physics at the address below.

Institute of Physics Dirac House, Temple Back Bristol BS1 6BE UK

Phone: 44 1 17 929 7481 Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc. 57 Morehouse Lane Red Hook, NY 12571 USA Phone: 845-758-0400

Fax: 845-758-2633

Email: curran@proceedings.com Web: www.proceedings.com

TABLE OF CONTENTS

_	_	
D.	>fc	
F 1 6	712	16.6

Peer Review Statement	
The Geometrical and Möbius-Invariant Properties of Parabolic Cycles	1
Singularity Resolving in Solution of the Boundary Integral Equation in Two-Dimensional Vortex Methods	7
Hybrid Barnes – Hut/Multipole Algorithm Application to Vortex Particles Velocities Calculation and Integral Equation Solution	16
Alexandra Kolganova, Ilia Marchevsky, Evgeniya Ryatina	
On the Locating Rainbow Connection Number of Amalgamation of Complete Graphs	26
Coefficient Estimation of Simultaneous Equations in the Case of Stochasticity of Exogenous Variables A M Minitaeva	32
Critical Temperature in 2D Square Ising Model with Anisotropic Coupling Constant Using Kramers-Wannier Duality	38
Analytical Solutions to the Isothermal Euler Equations with Time-Dependent Damping	45
Mathematical Modeling of Pedestrian Flow Through the Obstacle Bottleneck	51
Using Multi-Flexible Body Dynamic Analysis and the Taguchi Method to Decrease the Variation of Output Angular Velocity in a Double Circular-Arc Harmonic Gear Drive	66
FDT for Fluctuations of a Special Perturbated Harmonic Oscillator and Its Application in Q-Deformed Harmonic Oscillator	73
Utilizing GOES-16 Instruments to Forecast Geomagnetic Storm During Solar Cycle 25	78
Atomic Hydrogen Adsorption on Freestanding A-Borophene Nanoribbons for Hydrogen Spillover Applications: Insights from Density Functional Theory Calculations	86
An Analysis of Slow Drift Type II Radio Burst and Its Association with Full Halo Coronal Mass Ejection on 12th January 2022	91
Power-Frequency Performance of Step-Graded Double Gunn Diodes	98

Author Index