

CONTENTS

Preface	v
The QP-DYN Algorithms	1
<i>L. Accardi, M. Regoli and M. Ohya</i>	
Study of Transcriptional Regulatory Network Based on Cis Module Database	17
<i>S. Akasaka, T. Urushibara, T. Suzuki and S. Miyazaki</i>	
On Lie Group-Lie Algebra Correspondences of Unitary Groups in Finite von Neumann Algebras	29
<i>H. Ando, I. Ojima and Y. Matsuzawa</i>	
On a General Form of Time Operators of a Hamiltonian with Purely Discrete Spectrum	41
<i>A. Arai</i>	
Quantum Uncertainty and Decision-making in Game Theory	51
<i>M. Asano, M. Ohya, Y. Tanaka, A. Khrennikov and I. Basieva</i>	
New Types of Quantum Entropies and Additive Information Capacities	61
<i>V. P. Belavkin</i>	
Non-Markovian Dynamics of Quantum Systems	91
<i>D. Chruściński and A. Kossakowski</i>	
Self-collapses of Quantum Systems and Brain Activities	101
<i>K.-H. Fichtner, L. Fichtner, W. Freudenberg and M. Ohya</i>	

Statistical Analysis of Random Number Generators	117
<i>L. Accardi and M. Gäbler</i>	
Entangled Effects of Two Consecutive Pairs in Residues and Its Use in Alignment	129
<i>T. Hara, K. Sato and M. Ohya</i>	
The Passage from Digital to Analogue in White Noise Analysis and Applications	137
<i>T. Hida</i>	
Remarks on the Degree of Entanglement	145
<i>D. Chruściński, Y. Hirota, T. Matsuoka and M. Ohya</i>	
A Completely Discrete Particle Model Derived from a Stochastic Partial Differential Equation by Point Systems	157
<i>K.-H. Fichtner, K. Inoue and M. Ohya</i>	
On Quantum Algorithm for Exptime Problem	173
<i>S. Iriyama and M. Ohya</i>	
On Sufficient Algebraic Conditions for Identification of Quantum States	185
<i>A. Jamiołkowski</i>	
Concurrence and Its Estimations by Entanglement Witnesses	199
<i>J. Jurkowski</i>	
Classical Wave Model of Quantum-like Processing in Brain	209
<i>A. Khrennikov</i>	
Entanglement Mapping vs. Quantum Conditional Probability Operator	223
<i>D. Chruściński, A. Kossakowski, T. Matsuoka and M. Ohya</i>	

Constructing Multipartite Entanglement Witnesses <i>M. Michalski</i>	237
On Kadison–Schwarz Property of Quantum Quadratic Operators on $M_2(\mathbb{C})$ <i>F. Mukhamedov and A. Abduganiev</i>	255
On Phase Transitions in Quantum Markov Chains on Cayley Tree <i>L. Accardi, F. Mukhamedov and M. Saburov</i>	267
Space(-Time) Emergence as Symmetry Breaking Effect <i>I. Ojima</i>	279
Use of Cryptographic Ideas to Interpret Biological Phenomena (<i>and Vice Versa</i>) <i>M. Regoli</i>	291
Discrete Approximation to Operators in White Noise Analysis <i>Si Si</i>	311
Bogoliubov Type Equations via Infinite-dimensional Equations for Measures <i>V. V. Kozlov and O. G. Smolyanov</i>	321
Analysis of Several Categorical Data Using Measure of Proportional Reduction in Variation <i>K. Yamamoto, K. Tahata, N. Miyamoto and S. Tomizawa</i>	339
The Electron Reservoir Hypothesis for Two-dimensional Electron Systems <i>K. Yamada, T. Uchida, M. Fujita, H. Koizumi and T. Toyoda</i>	355
On the Correspondence between Newtonian and Functional Mechanics <i>E. V. Piskovskiy and I. V. Volovich</i>	363

Quantile-Quantile Plots: An Approach for the Inter-species Comparison of Promoter Architecture in Eukaryotes	373
<i>K. Feldmeier, J. Kilian, K. Harter, D. Wanke and K. W. Berendzen</i>	
Entropy Type Complexities in Quantum Dynamical Processes	387
<i>N. Watanabe</i>	
A Fair Sampling Test for Ekert Protocol	403
<i>G. Adenier, A. Yu. Khrennikov and N. Watanabe</i>	
Brownian Dynamics Simulation of Macromolecule Diffusion in a Protocell	413
<i>T. Ando and J. Skolnick</i>	
Signaling Network of Environmental Sensing and Adaptation in Plants: Key Roles of Calcium Ion	427
<i>K. Kuchitsu and T. Kurusu</i>	
NetzCope: A Tool for Displaying and Analyzing Complex Networks	437
<i>M. J. Barber, L. Streit and O. Strogan</i>	
Study of HIV-1 Evolution by Coding Theory and Entropic Chaos Degree	451
<i>K. Sato</i>	
The Prediction of Botulinum Toxin Structure Based on in Silico and in Vitro Analysis	461
<i>T. Suzuki and S. Miyazaki</i>	
On the Mechanism of D-wave High T_c Superconductivity by the Interplay of Jahn–Teller Physics and Mott Physics	469
<i>H. Ushio, S. Matsuno and H. Kamimura</i>	