

# **37th International Conference on Quantum Probability and Related Topics (QP37)**

Journal of Physics: Conference Series Volume 819

Kuantan, Malaysia  
22 – 26 August 2016

## **Editors:**

**Luigi Accardi**  
**Farrukh Mukhamedov**  
**Pah Chin Hee**

ISBN: 978-1-5108-3903-8  
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.**

Copyright© (2016) by the Institute of Physics  
All rights reserved. The material featured in this book is subject to  
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2017)

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](mailto: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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# Table of contents

## Volume 819

**37th International Conference on Quantum Probability and Related Topics (QP37)**

**22–26 August 2016, Kuantan, Malaysia**

**Accepted papers received: 2 March 2017**

**Published online: 3 April 2017**

### **Preface**

011001

OPEN ACCESS

[37th International Conference on Quantum Probability and Related Topics \(QP37\)](#)

011002

OPEN ACCESS

[Peer review statement](#)

### **Papers**

#### **Quantum probability**

012001

OPEN ACCESS

[Quantum Probability, Orthogonal Polynomials and Quantum Field Theory](#)

Luigi Accardi.....1

012002

OPEN ACCESS

[2-Meixner random variables and semi-quantum operators](#)

Gabriela Popa and Aurel I. Stan.....13

012003

OPEN ACCESS

[On the structure of quantum Markov semigroups of weak coupling limit type](#)

J R Bolaños-Servín and F Fagnola.....41

012004

OPEN ACCESS

[Recurrence and Transience within Quantum Markov Chains](#)

Farrukh Mukhamedov.....51

012005

OPEN ACCESS

[Arcwise Connectedness of Solution Sets of Lipschitzian Quantum Stochastic Differential Inclusions](#)

D A Dikko and E O Ayoola.....56

012006

OPEN ACCESS

[On Translation Invariant Quantum Markov Chains associated with Ising-XY models on a Cayley tree](#)

Farrukh Mukhamedov, Abdessatar Barhoumi, Abdessatar Souissi and Soueidy El Gheteb.....69

### **Quadratic operators, algebras and dynamical systems**

012007

OPEN ACCESS

[On \(3,3\)-Gaussian Quadratic Stochastic Operators](#)

Nasir Ganikhodjaev and Nur Zatul Akmar Hamzah.....77

012008

OPEN ACCESS

[The Ganikhodjaev Model of ABO Blood Groups](#)

Mansoor Saburov and Mohd Saipuddin Bin Arshat.....84

012009

OPEN ACCESS

[Reaching Nonlinear Consensus via Non-Autonomous Polynomial Stochastic Operators](#)

Mansoor Saburov and Khikmat Saburov.....92

012010

OPEN ACCESS

[Orthogonal Preserving Quadratic Stochastic Operators: Infinite Dimensional Case](#)

Farrukh Mukhamedov, Ahmad Fadillah Embong and Chin Hee Pah.....101

012011

OPEN ACCESS

[On Genetic and Evolution Algebras](#)

Izzat Qaralleh.....108

012012

OPEN ACCESS

[On classification of  \$m\$ -dimensional algebras](#)

U. Bekbaev.....114

012013

OPEN ACCESS

[The Fundamental Basis Theorem of Geometry from an algebraic point of view](#)

U. Bekbaev.....122

012014

OPEN ACCESS

[Critical circle maps and thermodynamic formalism](#)

Gulnora Poshokhodjaeva.....132

012015

OPEN ACCESS

[Uniform ergodicities and perturbation bounds of Markov chains on ordered Banach spaces](#)

Nazife Erkursun Özcan and Farrukh Mukhamedov.....142

012016

OPEN ACCESS

[A Few Remarks on "Zero-Two" Law for Positive contractions in the Orlicz-Kantorovich spaces](#)

Inomjon Ganiev, Farrukh Mukhamedov and Dilmurod Bekbaev.....150

012017

OPEN ACCESS

[The Dynamics of The Potts-Bethe Mapping over  \$\mathbb{Q}\_p\$ : The Case  \$p \equiv 2 \pmod{3}\$](#)

Mansoor Saburov and Mohd Ali Khameini Ahmad.....155

### **Applications and models**

012018

OPEN ACCESS

[On the Lebesgue constants of Fourier-Laplace series by Riesz Means](#)

Ahmad Fadly Nurullah bin Rasedee, Abdumalik A. Rakhimov, Anvarjon A. Ahmedov and Torla Bin Hj Hassan.....170

012019

OPEN ACCESS

[Ising model on trees:  \$\(k\_0\)\$ - non translation-invariant Gibbs measures](#)

Muzaffar Rahmatullaev.....178

012020

OPEN ACCESS

[On Ground States of  \$\lambda\$ -Model on the Cayley Tree of order two](#)

Farrukh Mukhamedov, Chin Hee Pah and Hakim Jamil.....184

012021

OPEN ACCESS

[Anti-continuum approach on nonlinear localized modes in dipolar Bose-Einstein condensates in optical lattice](#)

M H Badarudin, M S A Hadi and B A Umarov.....192

012022

OPEN ACCESS

[Anti-continuum approach on odd solitons in binary discrete media with cubic-quintic nonlinearity](#)

L. A. Taib, M. S. A. Hadi and B. A. Umarov.....199

012023

OPEN ACCESS

[Scattering of a flat top solitons of cubic - quintic nonlinear Shrödinger equation by a linear delta potential](#)

B A Umarov and N A B Aklan.....207

012024

OPEN ACCESS

[The Soliton Interaction in Weakly Nonlocal Nonlinear Media on the External Potentials](#)

N A B Aklan and B A Umarov.....214

012025

OPEN ACCESS

[On Equiconvergence of Fourier Series and Fourier Integral](#)

Abdumalik A. Rakhimov, Torla Bin Hj Hassan and Ahmad Fadly Nurullah bin Rasedee.....220

012026

OPEN ACCESS

[Empirical performance of interpolation techniques in risk-neutral density \(RND\) estimation](#)

H Bahaludin and M H Abdullah.....225

012027

OPEN ACCESS

[Boundary Layer Flow of Dusty Fluid on a Stretching Sheet of Another Quiescent Fluid](#)

Sharena Mohamad Isa and Nurul Farahain Mohammad.....234

012028

OPEN ACCESS

[On Square Root Function over  \$\mathbb{Q}\_p\$  and its Application](#)

Mansoor Saburov and Muhammad Jundullah bin Ismail.....242

012029

OPEN ACCESS

[The quadriceps muscle of knee joint modelling Using Hybrid Particle Swarm Optimization-Neural Network \(PSO-NN\)](#)

Saadi Bin Ahmad Kamaruddin, Siti Marponga Tolos, Pah Chin Hee, Nor Azura Md Ghani, Norazan Mohamed Ramli, Noorhamizah Binti Mohamed Nasir, Babul Salam Bin Ksm Kader and Mohammad Saiful Huq.....252