# XXII International Conference on Integrable Systems and Quantum Symmetries 2014 

(ISQS-22)

Journal of Physics: Conference Series Volume 563

## Prague, Czech Republic 23-29 June 2014

Editors:

Cestmir Burdik
Ondrej Navratil
Severin Posta

ISBN: 978-1-63439-671-4
ISSN:1742-6588

# Printed from e-media with permission by: 



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

Copyright® by the Institute of Physics
All rights reserved.
Printed by Curran Associates, Inc. (2015)
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: 441179297481
Fax: $\quad 441179200979$
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: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

## Table of contents

Volume 563
$\underline{2014}$

XXII International Conference on Integrable Systems and Quantum Symmetries (ISQS-22)
23-29 June 2014, Prague, Czech Republic

Accepted papers received: 10 November 2014
Published online: 26 November 2014

## Preface

011001

XXII International Conference on Integrable Systems and Quantum Symmetries (ISQS22) OPEN ACCESS

011002

Peer review statement

## Papers

012001

Virasoro representations with central charges $1 / 2$ and 1 on the real neutral fermion Fock
space $F^{1 / 2}$ OPEN ACCESS I I Anguelova 1
012002
Classical-quantum semigroups OPEN ACCESS P Aniello 14
012003
Clusters of bound particles in a quantum integrable many-body system and number theory OPEN ACCESS B Basu-Mallick, T Bhattacharyya and D Sen 26

012004

Yang-Mills gauge fields conserving the symmetry algebra of the Dirac equation in a homogeneous space OPEN ACCESS A I Breev and A V Shapovalov 39

012005

An integrable Hierarchy on the Perfect Schrödinger Lie Algebra OPEN ACCESS P Casati 54

012006

Algebraic formulation of hadronic supersymmetry based on octonions: new mass formulas and further applications OPEN ACCESS S Catto, Y Gürcan, A Khalfan and L Kurt 64

012007
Ground state configurations of charged particles in a disk at zero temperature OPEN ACCESS M Cerkaski and R G Nazmitdinov 81

012008
Multiplet classification for SU(n,n) OPEN ACCESS V K Dobrev 87
012009
Symplectic dual pair related to So $_{a 1, \ldots, a n-1}(n)$ OPEN ACCESS A Dobrogowska and G Jakimowicz 108

012010
$Q$-representations and unitary representations of the super-Heisenberg group and harmonic superanalysis OPEN ACCESS A M Frydryszak 116

012011
Bethe vectors for XXX-spin chain OPEN ACCESS Č Burdík, J Fuksa and A Isaev 128
012012
On the derivation of Darboux form for the action- angle dual of trigonometric $\mathrm{BC}_{\underline{n}}$ Sutherland system OPEN ACCESS T F Görbe 142

012013
Bosonization and Lie Group Structure OPEN ACCESS Y K Ha 152

Vortex solutions in a Witten-type model OPEN ACCESS S Itaya, N Sawado and M Suzuki 162

012015

Yangian symmetric correlators, R operators and amplitudes OPEN ACCESS R Kirschner 170

012016
Quasicrystallography from $B_{n}$ lattices OPEN ACCESS M Koca, N O Koca, A AlMukhaini and A Al-Qanabi 182

012017
$\underline{\text { h-fold Symmetric quasicrystallography from affine Coxeter groups OPEN ACCESS N O }}$ Koca, M Koca and S Al-Shidhani 200

012018

A Mathematica package to derive weight-homogeneous decompositions of vector fields OPEN ACCESS R A Kycia 217

012019

Scattering Amplitudes for Multi-indexed Extensions of Soliton Potential and Extended KdV Integer Solitons OPEN ACCESS J-C Lee 223

012020
Integrable deformations of the $\operatorname{AdS}_{5} \times \mathrm{S}^{5}$ superstring and the classical Yang-Baxter equation - Towards the gravity/CYBE correspondence - OPEN ACCESS T Matsumoto and K Yoshida 230

012021
Supersymmetry and non-Abelian geometric phase for a free particle on a circle with point-like interactions OPEN ACCESS S Ohya 246

012022
Exact Results for the $\mathrm{SU}(\infty)$ Principal Chiral Model OPEN ACCESS P Orland 255
012023

Generalized symmetries generating Noether currents and canonical conserved quantities OPEN ACCESS M Palese and E Winterroth 262

012024

Consistency and renormalization of the $\lambda=1 / 3$ soft breaking model of the complete Hořava theory OPEN ACCESS A Restuccia, J Bellorín and A Sotomayor 266

012025

On discrete and continuous nonlinear Fourier transforms OPEN ACCESS P Saksida 272
012026

From noncommutative spacetimes to Lorentz symmetry violation OPEN ACCESS M Schreck 285

012027
The chiral massive fermions in the graphitic wormhole OPEN ACCESS J Smotlacha 293
012028

Hamiltonian structure for a class of parametric coupled systems of the Korteweg-de Vries type OPEN ACCESS A Sotomayor and A Restuccia 301

012029
Gamma distributed random variables and their semi-quantum operators OPEN ACCESS G Popa and A I Stan 307

012030
Belavin-Drinfeld cohomologies and introduction to classification of quantum groups OPEN ACCESS A Stolin and I Pop 317

012031
Temporal extension of particles to interpret and intuitively describe quantum symmetries and related quantum and relativistic phenomena OPEN ACCESS A Szucs 332

012032
Aspects of $C_{3}$-symmetric calorons from numerical Nahm transform OPEN ACCESS A Nakamula, N Sawado and K Takesue 342

Killing forms and toric Sasaki-Einstein spaces OPEN ACCESS V Slesar, M Visinescu and G E Vîlcu 351

012034

Function algebras on a 2-dimensional quantum complex plane OPEN ACCESS I Cohen and E Wagner 360

012035
Exposition on classification of finite dimensional irreducible representations of the Lie superalgebra $B(m, n)$ OPEN ACCESS H Yamane 371

012036
Homogeneous grading affine Toda quantum solitons OPEN ACCESS A Zuevsky 375

