

Seventh International Workshop: Group Analysis of Differential Equations and Integrable Systems 2014

(GADEIS VII)

Journal of Physics: Conference Series Volume 621

**Larnaca, Cyprus
15 – 19 June 2014**

**ISBN: 978-1-5108-0756-3
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© (2014) 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. (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: 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: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

ALGEBRAIC METHOD FOR FINDING EQUIVALENCE GROUPS	1
<i>Alexander Bihlo, Elsa Dos Santos Cardoso-Bihlo, Roman O Popovych</i>	
EQUIVALENCE GROUPOIDS OF CLASSES OF LINEAR ORDINARY DIFFERENTIAL EQUATIONS AND THEIR GROUP CLASSIFICATION	18
<i>Vyacheslav M Boyko, Roman O Popovych, Nataliya M Shapoval</i>	
PROPERTIES OF THE SUMS OF RESONANCES FOUND IN THE SINGULARITY ANALYSIS OF CERTAIN CLASSES OF ORDINARY DIFFERENTIAL EQUATIONS	35
<i>Kyriakos Charalambous, Peter Leach</i>	
GENERALIZED LOTKA—VOLTERRA SYSTEMS CONNECTED WITH SIMPLE LIE ALGEBRAS	43
<i>Stelios A Charalambides, Pantelis A Damianou, Charalambos A Evripidou</i>	
INTEGRABLE DISCRETE NONAUTONOMOUS QUAD-EQUATIONS AS BÄCKLUND AUTO-TRANSFORMATIONS FOR KNOWN VOLTERRA AND TODA TYPE SEMIDISCRETE EQUATIONS	55
<i>Rustem N Garifullin, Ravil I Yamilov</i>	
APPLICATION OF GROUP ANALYSIS TO THE SPATIALLY HOMOGENEOUS AND ISOTROPIC BOLTZMANN EQUATION WITH SOURCE USING ITS FOURIER IMAGE	73
<i>Yurii N Grigoriev, Sergey V Meleshko, Amornrat Suriyawichitseranee</i>	
GARDNER'S DEFORMATION OF THE KRASIL'SHCHIK—KERSTEN SYSTEM	82
<i>Arthemiy V Kiselev, Andrey O Krutov</i>	
EQUIVALENCE GROUPOID FOR (1+2)-DIMENSIONAL LINEAR SCHRÖDINGER EQUATIONS WITH COMPLEX POTENTIALS	101
<i>Célestin Kurujyibwami</i>	
THE POINCARÉ ALGEBRAS $P(1,1)$ AND $P(1, 2)$: REALIZATIONS AND DEFORMATIONS	108
<i>Maryna Nesterenko</i>	
LAPLACE—RUNGE—LENTZ VECTORS FOR ARBITRARY SPIN AND ARBITRARY DIMENSION	115
<i>Anatoly G Nikitin</i>	
EQUIVALENCE GROUPOID OF GENERALIZED POTENTIAL BURGERS EQUATIONS	131
<i>Oleksandr A Pocheheta</i>	
CANONICAL FORMS FOR MATRICES OF SALETAN CONTRACTIONS	141
<i>Dmytro R Popovych</i>	
GENERALIZED BÄCKLUND-DARBOUX TRANSFORMATION (GBDT): CONSERVATION LAWS, RATIONAL EXTENSIONS AND BISPECTRALITY	151
<i>Alexander Sakhnovich</i>	
SYMMETRIES OF SECOND-ORDER PDES AND CONFORMAL KILLING VECTORS	159
<i>Michael Tsamparlis, Andronikos Paliathanasis</i>	
LAPLACE TYPE INVARIANTS FOR VARIABLE COEFFICIENT MKDV EQUATIONS	176
<i>Christina Tsaousi, Rita Tracinà, Christodoulos Sophocleous</i>	
GROUP ANALYSIS OF BENJAMIN—BONA—MAHONY EQUATIONS WITH TIME DEPENDENT COEFFICIENTS	184
<i>Olena Vaneeva, Roman O Popovych, Christodoulos Sophocleous</i>	
GAUGE EQUIVALENT INTEGRABLE EQUATIONS ON $SL(3)$ WITH REDUCTIONS	196
<i>Alexandar B Yanovski</i>	
SOLUTIONS OF THE SYSTEM OF D'ALEMBERT AND EIKONAL EQUATIONS, AND CLASSIFICATION OF REDUCTIONS OF PDES	209
<i>Irina Yehorchenko</i>	
QUANTUM INTEGRABLE SYSTEMS IN THREE-DIMENSIONAL MAGNETIC FIELDS: THE CARTESIAN CASE	215
<i>Alexander Zhalij</i>	
Author Index	