The 14th international conference
Analytic and algebraic methods in physics

September 11 - 14, 2017, Trojanova street 13, lecture hall 301

→ programme ←

(the final version)

P. T. O.

Analytic and algebraic methods in physics

September 11th: Monday

Start of the conference

14:00 - 14:30	the last minute registrations
14:30 - 14:35	OPENING
	session I: **analytic methods** chair: **H. Jones**
14:35 - 15:05	**Oktay Veliev** (Istanbul) *Schrödinger operator with the periodic PT-symmetric potentials*
15:10 - 15:40	**Axel Pérez-Obiol** (Řež) *Spontaneous twisting and shrinking of carbon nanotubes*
15:45 - 16:15	coffee break
	session II: **algebraic methods** chair: **A. Mostafazadeh**
16:15 - 16:45	**Ray Rivers** (London) *The Simple Harmonic Oscillator*
16:50 - 17:20	**Albert T. Kotvytskiy** (Kharkov) *The Analysis of a Set of Images of an N-point* *Gravitational Lens by the Algebraic Geometry Methods*
17:25 - 17:55	**Joshua Feinberg** (Haifa) *Renormalizing Rectangles in Random Matrix Theory*
18:00	THE END OF THE FIRST DAY

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September 12th: Tuesday

Morning programme

session III: **physics of open quantum systems** chair: **D. S. Kulshreshta**	
9:30 - 10:00	**Holger Cartarius** (Stuttgart) *Open many-body quantum systems with topologically nontrivial phases*
10:05 - 10:35	**Yogesh N. Joglekar** (Indianapolis) *Parity-time symmetric systems with time-delayed gain and loss*
10:40 - 11:10	coffee break
session IV: **mathematical methods in field theory** chair: **R. Rivers**	
11:10 - 11:40	**Teoman Turgut** (Istanbul) *Uniqueness of the ground state for Lee model*
11:45 - 12:15	**Václav Zatloukal** (Prague) *Hamiltonian constraint formulation of field theories*
12:20 - 14:00	LUNCHTIME

September 12th: Tuesday

Afternoon programme

session V: **quantization techniques** chair: **Uwe Günther**	
14:00 - 14:30	**Fabio Bagarello** (Palermo) *Bi-coherent states for pseudo-bosons: preliminary results*
14:35 - 15:05	**Usha Kulshreshtha** (Delhi) *Study of Boson Stars and Boson-Shells in Gravity Theory (General Relativity)*
15:10 - 15:40	**Daya Shankar Kulshreshtha** (Delhi) *The Instant-Form versus Light-Front Quantization of Field Theories and String Theories*
15:45 - 16:15	coffee break
session VI: **exactly solvable models** chair: **M. Maamache**	
16:15 - 16:45	**Géza Lévai** (Debrecen) *The finite PT-symmetric square well potential*
16:50 - 17:20	**Artur Ishkhanyan** (Ashtarak) *Solutions of the bi-confluent Heun equation in terms of the Hermite functions*
17:25 - 18:00	**[informal sub-session on open problems]** *(round-table discussion)*
18:00	THE END OF THE SECOND DAY

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September 13th: Wednesday

Morning programme

session VII: **scattering theory** chair: **F. Bagarello**	
9:30 - 10:00	**Ali Mostafazadeh** (Istanbul) *Exact solution of the two-dimensional scattering problem* *for the delta-function potentials supported on subsets of a line*
10:05 - 10:35	**Hugh Jones** (London) *Properties of the Transfer Matrix*
10:40 - 11:10	coffee break
session VIII: **non-Hermitan quantum physics** chair: **Y. Joglekar**	
11:10 - 11:40	**Vít Jakubský** (Řež) *Optical systems with PT-symmetric refractive index and* *confluent Crum-Darboux transformations in Dirac Hamiltonians*
11:45 - 12:15	**Miloslav Znojil** (Prague) *Unitary evolution in non-Hermitian interaction picture*
12:20 - 14:00	LUNCHTIME

September 13th: Wednesday

Afternoon programme

session IX: **Lie groups and algebras** chair: **G. Lévai**	
14:00 - 14:30	**Mustapha Maamache** (Setif) *Quantum Evolution of the Time-Dependent Non-Hermitian SU(1,1) and SU(2) Hamiltonians*
14:35 - 15:05	**Jan Kotrbatý** (Jena) *Lie fields and representations of the Poincaré groups*
15:10 - 15:40	**Satoshi Ohya** (Tokyo) *Exactly Solvable Bound-State Problems and Lie Algebras so(2,1), so(3), and iso(2)*
15:45 - 16:15	coffee break
session X: **discrete structures** chair: **T. Turgut**	
16:15 - 16:45	**Daniel Reitzner** (Bratislava) *Navigating a maze using quantum-walk searches*
16:50 - 17:20	**Stanislav Skoupý** (Prague) *Perfect state transfer by means of discrete-time quantum walk search algorithms on highly symmetric graphs*
17:25 - 17:55	**Jiří Hrivnák** (Prague) *Discrete Cosine and Sine transforms on Honeycomb Lattice*
18:00	THE END OF THE THIRD DAY

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September 14th: Thursday

(the last day of the conference)

session XI: **physics of quasicrystals** chair: **F. M. Fernández**	
9:30 - 10:00	**Petr Ambrož (Prague)** *Voronoi tilings of quasicrystals*
10:05 - 10:35	**Jan Mazáč** (Prague) *Quasicrystals and the affine self-similarity*
10:40 - 11:10	coffee break
session XII: **quantum mechanics in practice** chair: **J. Feinberg**	
11:10 - 11:40	**Fabio Rinaldi** (Rome) *Gaussian potential is essentially solvable*
11:45 - 12:15	**Francisco M. Fernández** (La Plata) *Highly accurate calculation of the real and complex eigenvalues of one-dimensional anharmonic oscillators*
12:20 - 12:30	CLOSING CEREMONY
12:30	THE END OF THE CONFERENCE