Symmetry and Integrability of Equations of Mathematical Physics

(December 23-24 2022)

Workshop program

We use eastern Europe time (Kyiv local time).

The workshop working languages are Ukrainian and English (it is speaker's choice).

Link to connect to all meetings: https://bbb.imath.kiev.ua/b/dep-evh-zz9-ua9

December 23 (Friday)

14:00

Opening of the workshop

14:15

Rebenko A. (Institute of mathematics of NAS of Ukraine, Kyiv)

The simplest proof of Cayley's formula and how it arises in Statistical Mechanics

https://www.imath.kiev.ua/~appmath/Abstracts2022/Rebenko.html

14:45

Vladimirov V.[1], Sapa L.[1] and Skurativskyy S.[2] ([1]AGH University of Science and Technology, Kraków, Poland; [2]Subbotin Institute of Geophysics of NAS of Ukraine, Kyiv)

Influence of a choice of state equation describing heterogeneous media on the existence and stability of solitary wave self-similar solutions supported by the hydrodynamic-type model

https://www.imath.kiev.ua/~appmath/Abstracts2022/Vladimirov.html

15:15

Tsyfra I. (AGH University of Science and Technology, Krakow, Poland)

On the connection between the classical symmetry of ordinary differential equations of the second order and the stationary integrable Calogero-Bogoyavlenskyi-Schiff equation

https://www.imath.kiev.ua/~appmath/Abstracts2022/Tsyfra.html

15:45-16:00 Break for tea, coffee and online communication

December 23 (Friday)

16:00

Popovych R.[1,2] and Maltseva D.[2] ([1]Silesian University in Opava, Czech Republic; University of Vienna, Austria; [2]Institute of Mathematics, NAS of Ukraine, Kyiv)

Lie reductions of Boiti–Leon–Pempinelli system to ordinary differential equations

https://www.imath.kiev.ua/~appmath/Abstracts2022/Popovych.html

16:30

Koval S.[1] and Popovych R.[2] ([1]Memorial University of Newfoundland, Canada; Kyiv Academic University, Kyiv; [2]Silesian University in Opava, Czech Republic; Institute of Mathematics, NAS of Ukraine, Kyiv; University of Vienna, Austria)

Point symmetries with linear fractional components

https://www.imath.kiev.ua/~appmath/Abstracts2022/Koval.pdf

17:00

Fedorchuk V.M. and Fedorchuk V. (Pidstryhach Institute for Applied Problems of Mechanics and Mathematics of NAS of Ukraine, Lviv) On partial preliminary group classification of some class of (1+3)-dimensional Monge-Ampere equations. One-dimensional Lie algebras

https://www.imath.kiev.ua/~appmath/Abstracts2022/Fedorchuk.pdf

17:30

Buring R.[1] and Kiselev A.[2] ([1]Mathematical Institute, Johannes Gutenberg University of Mainz, Germany; [2]University of Groningen, The Netherlands; IHES, France)

The tower of Kontsevich deformations for Nambu-Poisson structures on R^d: dimension-specific micro-graph calculus

https://www.imath.kiev.ua/~appmath/Abstracts2022/Buring.html

18:00

Barannyk A.[1], Barannyk T.[2] and Yuryk I.[3] ([1]Institute of Mathematics, Pomeranian Pedagogical Academy, Słupsk, Poland; [2]Poltava V.G. Korolenko national pedagogical university; [3]National University of Food Technology, Kyiv)

The exact solutions with generalized separation of variables of the nonlinear heat equation with a source

https://www.imath.kiev.ua/~appmath/Abstracts2022/Yuryk.pdf

December 24 (Saturday)

11:00

Cherniha R. and Davydovych V. (Institute of mathematics of NAS of Ukraine, Kyiv; The University of Nottingham, UK)

Symmetries and exact solutions of Lotka-Volterra diffusion systems

https://www.imath.kiev.ua/~appmath/Abstracts2022/Cherniha.html

11:30

Serov M. and Podoshvelev Yu. (Poltava V.G. Korolenko national pedagogical university)

Nonlocal symmetries of the system of chemotaxis equations with reactive and convective terms

https://www.imath.kiev.ua/~appmath/Abstracts2022/Serov.html

12:00

Ivanova N. (European University of Cyprus, Nicosia)

Degenerations of complex associative algebras of dimension three via Lie and Jordan algebras 1

https://www.imath.kiev.ua/~appmath/Abstracts2022/Ivanova.html

12:15

Pallikaros C. (University of Cyprus, Nicosia)

Degenerations of complex associative algebras of dimension three via Lie and Jordan algebras 2

https://www.imath.kiev.ua/~appmath/Abstracts2022/Ivanova.html

12:30

Yegorchenko I. (Institute of mathematics of NAS of Ukraine, Kyiv)

A general solution of the eikonal equation for an arbitrary number of space variables

https://www.imath.kiev.ua/~appmath/Abstracts2022/Yegorchenko.html

13:00

Nikitin A. (Institute of Mathematics, NAS of Ukraine, Kyiv)

Classification of superintegrable quantum mechanical systems with position dependent mass

https://www.imath.kiev.ua/~appmath/Abstracts2022/Nikitin.html

Poster presentations

Cardoso-Bihlo E. (Memorial University of Newfoundland, Canada)

Differential invariants for symmetry groups and equivalence group

https://www.imath.kiev.ua/~appmath/Abstracts2022/CardosoBihlo.html

Huraka S. (Kyiv Academic University, Kyiv)

On the group classification of systems of linear ordinary second order differential equations with constant commutating matrices

https://www.imath.kiev.ua/~appmath/Abstracts2022/Huraka.html

Lokaziuk O. (Institute of mathematics of NAS of Ukraine, Kyiv)

On the group classification of the generalized Klein–Gordon and Dalambert equations

https://www.imath.kiev.ua/~appmath/Abstracts2022/Lokaziuk.html

Nesterenko M. (Institute of mathematics of NAS of Ukraine, Kyiv)

Application of orbit-functions to image processing

https://www.imath.kiev.ua/~appmath/Abstracts2022/Nesterenko.pdf

Popovych D. (Memorial University of Newfoundland, Canada; Institute of mathematics of NAS of Ukraine, Kyiv)

Algorithm for constructing generalized İnönü–Wigner contractions

https://www.imath.kiev.ua/~appmath/Abstracts2022/PopovychD.pdf

Spichak S.[1], Stognij V.[2] and Kopas I.[2] (1Institute of mathematics of NAS of Ukraine, Kyiv; [2]National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute")

Group classification of one class of (2+1)-dimensional linear equations of Asian option pricing

https://www.imath.kiev.ua/~appmath/Abstracts2022/Spichak.html

Vinnichenko O.[1], Boyko V.[1] and Popovych R.[1,2] ([1]Institute of mathematics of NAS of Ukraine, Kyiv; [2]Silesian University in Opava, Czech Republic; University of Vienna, Austria)

Point- and contact-symmetry pseudogroups of dispersionless Nizhnik equation

https://www.imath.kiev.ua/~appmath/Abstracts2022/Vinnichenko.html