

8TH CONFERENCE ON GEOMETRY AND TOPOLOGY

The international conference “8th Conference on Geometry and Topology of Manifolds” (Luxembourg-Poland-Ukraine conference, Lie algebroids, dynamical systems and applications) took place on April 30 - May 6. The conference was organized in two cities, the first part was held in Przemyśl (Poland) at the State High School of East Europe, the second part took place in Lviv, Ukraine, at the Ivan Franko National University of Lviv.

The conference was organized by the Ivan Franko National University of Lviv, Technical University of Łódź and Institute for Applied Problems of Mechanics and Mathematics of National Academy of Sciences of Ukraine. The Organizing Committee included:

J. Kubarski, R. Wolak, T. Rybicki, J. Draus, J. Musial, V. Kyrylych, M. Zarichnyi, T. Banakh, N. Poncin, R. M. Kushnir, A. Panasyuk, R. Matsyuk, I. Mykytyuk, V. O. Pelykh, V. Sharko,

and the Scientific Committee consisted of:

Yu. Aminov (Ukraine), B. Bojarski (Poland), A. Borisenko (Ukraine), R. Brown (UK), S. Brzychczy (Poland), J. Grabowski (Poland), J. Kubarski (Poland), P. Lecomte (Belgium), A.S. Mishchenko (Russia), V.Yu. Ovsienko (France) J. Pradines (France), A.O. Prishlyak (Ukraine), A.M. Samoilenko (Ukraine), V. Sharko (Ukraine), N. Teleman (Italy), M. Zarichnyi (Ukraine, Poland), N.T. Zhung (France).

The main aim of the conference series is to present and discuss new results on geometry and topology of manifolds with the particular attention paid to applications of algebraic methods. The topics usually discussed include: dynamical systems on manifolds and applications, Lie groups (including infinite dimensional), Lie algebroids and their generalizations, Lie groupoids, Characteristic classes, index theory, K -theory, Fredholm operators, Singular foliations, cohomology theories for foliated manifolds and their quotients, Symplectic, Poisson, Jacobi and special Riemannian manifolds, applications to mathematical physics.

The main speakers of the Conference delivered the following lectures: N. Teleman (Ancona, Italy, “Modified Hochschild and Periodic Cyclic Homology”, K. Abe(Matsumoto, Japan), “On equivariant Lipschitz homeomorphisms of G -manifolds with codimension one orbit”, V. Ovsienko (Lyon, France), “Projective structures on smooth manifolds: homotopy and invariant differential operators”, N. Poncin (Luxembourg), “Poisson cohomology and deformation quantization”, Y. Aminow (Kharkiv,Ukraine), “Electron motion and ruled surfaces”, J. Grabowski (Warsaw, Poland), “Higher vector bundles and multigraded manifolds”, H. Hall (Aberdeen, UK), “Projective Structure and the Principle of Equivalence in General Relativity”, M. Zarichnyi (Lviv, Ukraine), “Universal maps of infinite-dimensional manifolds”, V. Pelykh (Lviv, Ukraine), “Node points of Sen-Witten equations and positive energy theorem”, A. Sharkovsky (Kiev,Ukraine), “A little from history, a little from topology and dynamical systems”, J-C Hausmann (Geneve, Switzerland), “The topology and geometry of polygon spaces”.

More than 70 mathematicians from 14 countries participated at the conference. Let us mention here some of the talks: M. Rubin, “Recovering a foliated manifold from its homeomorphism group”, A. Pavlov, “An analogue of the Kazhdans property (T) for operator algebras”, S. Maksymenko, “Presentation for the fundamental groups of the orbits of Morse functions on surfaces”, G. Kass, “Examples of multiple solutions for the Yamabe problem on scalar curvature”, R. Matsyuk, “A note on the Lagrange differential in bigraded module of vertical tangent bundle valued forms”, A.Rodrigues, “Involutive Lie Pseudogroups and Filtered Lie Algebras”, P. Casati, “Vertex Operator construction of coupled soliton

hierarchies”, Y. Muranov, “Surgery on stratified manifolds”, V. Sharko, “Flows and L_2 invariants”, J. Eichhorn, “Hilbert diffeomorphism groups and their geometry for open manifolds”, J. Kubarski, “Flat connections with singularities in some Lie algebroids”, T. Banakh, “Homeomorphism groups of non-compact manifolds”, J. Jaworowski, “Maps of G-manifolds”, B. Hajduk, “Singular symplectic forms and round functions”, W. Sarlet, “Geometric calculus associated to second-order dynamics and applications”, P. Popescu, “Totally singular Lagrangians and affine hamiltonians”, H. Maakestad, “Jetbundles on flagvarieties”, P. Mormul, “The least Underdetermined systems of ODEs - geometric approach of E.Cartan”, M. Tosun, “On the Sectional Curvatures of Time Like Generalized Ruled Surfaces in \mathbb{R}_1^n ”.

The lecture by Ya.Prytula was devoted to the history of the Lviv School of mathematics.

The cultural program included the excursion in Lviv and excursion to the Lychakiv cemetery, Stefan Banach’s grave. Participants of the conference spent a lot of time observing Lviv’s highlights. It is a good place to mention that the city of Lviv is the motherland of the famous Scottish Cafe and the Scottish book.

The proceedings of the 8th Conference will appear in “Travaux mathematiques” published in the Luxembourg,

The organizers of the conference are grateful to the following sponsors:

- The Committee on Mathematics of the Polish Academy of Science,
- Rector of the Technical University of Łódź,
- Rector of the Jagiellonian University,
- Rector of the AGH University of Science and Technology,
- Rector of the Rzeszów University,
- Vice-Rector of Ivan Franko National University of Lviv,
- Dean of the Faculty of Technical Physics, Computer Science and Applied Mathematics of the Technical University of Łódź,
- Dean of the Faculty of Mathematics and Natural Sciences of the Rzeszów University,
- Head of the institute of the Mathematics, University of Luxembourg, Luxembourg,
- The Director of the Pidstryhach Institute for the Applied Problems of Mechanics and Mathematics of the National Academy of Sciences of Ukraine, Lviv, Ukraine,
- The Director of the Institute of the Mathematics of the National Academy of Sciences of Ukraine, Kyiv, Ukraine,
- Head of the Department of the Mathematical Methods in Physics, Faculty of Physics, University of Warsaw,
- Bank ”Dnister”, Lviv, Ukraine,
- ”Kredobank”, Lviv, Ukraine.

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