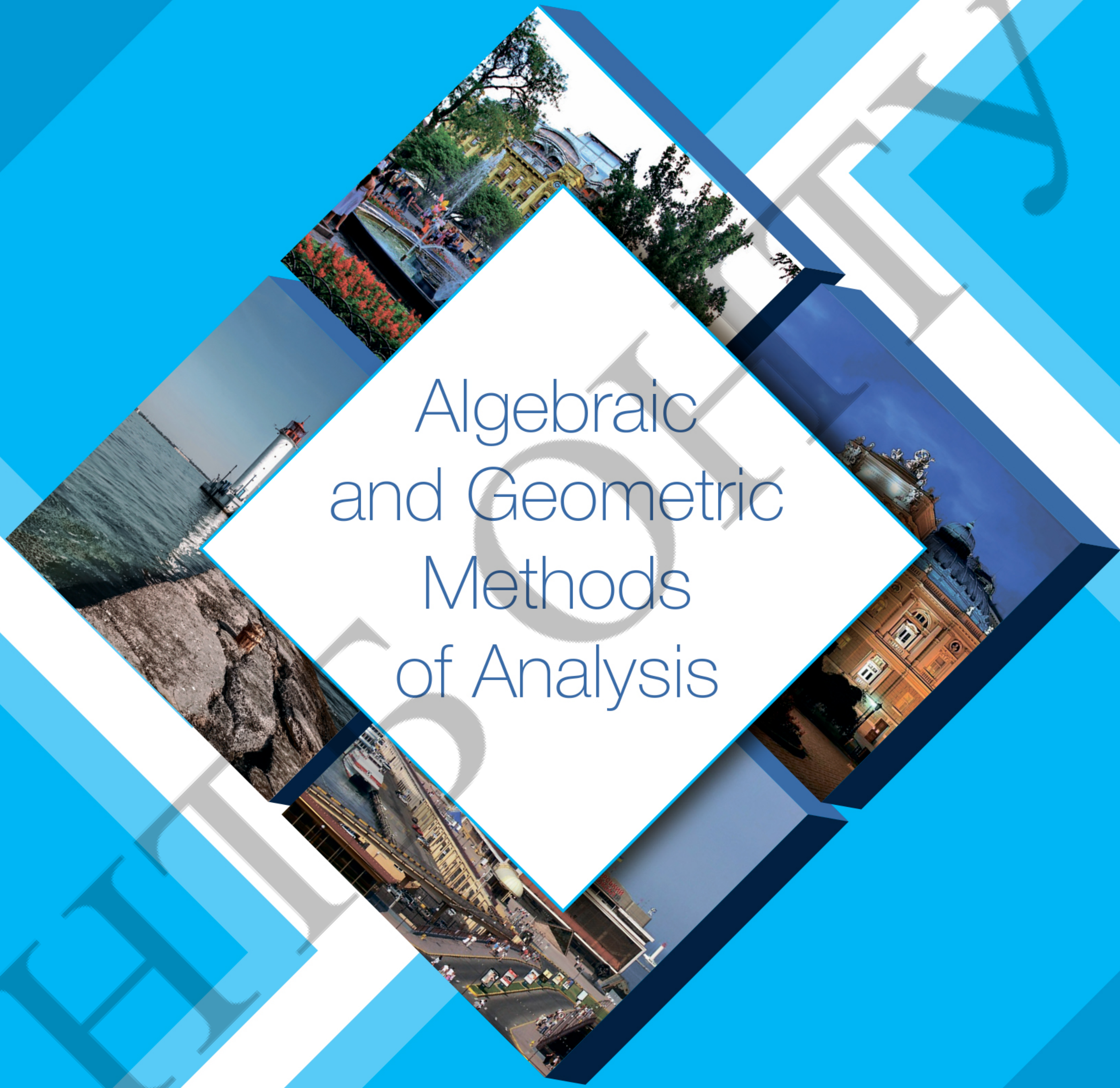
International
Scientific Conference



Algebraic and Geometric Methods of Analysis

27-30 May 2024

Odesa, Ukraine

The purpose of this conference is to bring together researchers in geometry, topology, algebra, analysis and dynamical systems and to provide for them a forum to present their recent work to colleagues from different nationalities. This way we aim to stimulate discussion about the latest findings in geometrical and topological methods in analysis and to increase international collaboration.

The conference continues the traditional annual conference «Geometry in Odesa» holding from 2004, and hosted by Odesa National University of Technology (Odesa National Academy of Food Technologies till 2021). From 2017 the conference was renamed to «Algebraic and geometric methods of analysis» (AGMA).

The Conference languages: Ukrainian and English.

List of topics

- Algebraic methods in geometry
- Differential geometry in the large
- Geometry and topology of differentiable manifolds
- General and algebraic topology
- Dynamical systems and their applications
- Geometric and topological methods in natural sciences
- Geometric problems in mathematical analysis

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Hypercyclicity of symmetric composition operator

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The classical Birkhoff theorem (1929) [1] asserts that any operator of composition with translation

$$x \mapsto x + a,$$
$$T_a \colon f(x) \mapsto f(x+a)$$

is hypercyclic on the space of entire functions $H(\mathbb{C})$ on the complex plane $\mathbb{C}$ if $a \neq 0$. A generalization of the Birkhoff theorem was proved by Godefroy and Shapiro in [2].

Definition 1. Let X be a topological space. A continuous linear operator $T : X \to X$ is said to be *hypercyclic* if there is some vector $x \in X$ such that the set

$$\operatorname{Orb}(T, x) = \{x, Tx, T^2x, \ldots\}$$

of iterates of x is dense in X. The vector x is called a hypercyclic vector associated to the hypercyclic operator T.

The hypercyclicity of a special operator on an algebra of symmetric analytic functions on ℓ_1 was proved in [3]. We construct new class of hypercyclic composition operators on an algebra of symmetric analytic functions on ℓ_1.

References

[1] G.D. Birkhoff, *Démonstration d'un théorème élémentaire sur les fonctions entières*, C. R. Acad. Sci. Paris **189** : 473–475, 1929.

[2] Godefroy G. and Shapiro J.H. *Operators with dense, invariant, cyclic vector manifolds*, J. Funct. Anal. **98** : 229–269, 1991.

[3] Z. Novosad, A. Zagorodnyuk, *Polynomial automorphisms and hypercyclic operators on spaces of analytic functions*, Archiv der Mathematik **89**(2) : 157–166, 2007.

On (i, j)-Baire Bilocales

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ABSTRACT: In the category of bitopological spaces, a bitopological space (X, τ_1, τ_2) is said to be *almost* (i, j)*-Baire* [1] if every sequence $\{G_n : n \in \mathbb{N}\}$ of τ_j-open τ_i-dense subsets of X satisfies the condition that $\bigcap_{n\in\mathbb{N}} G_n$ is τ_i-dense, where $i, j = 1, 2$, $i \neq j$. In this talk, we transfer this notion of almost (i, j)-Baireness to bilocales. In our notion though, the prefix "almost" is dropped. So, we define and characterize (i, j)-Baire bilocales. We also give internal properties of (i, j)-Baire bilocales which are not translated from properties of almost (i, j)-Baireness in bitopological spaces. For instance, we show that in the class of Noetherian bilocales, (i, j)-Baireness of a bilocale