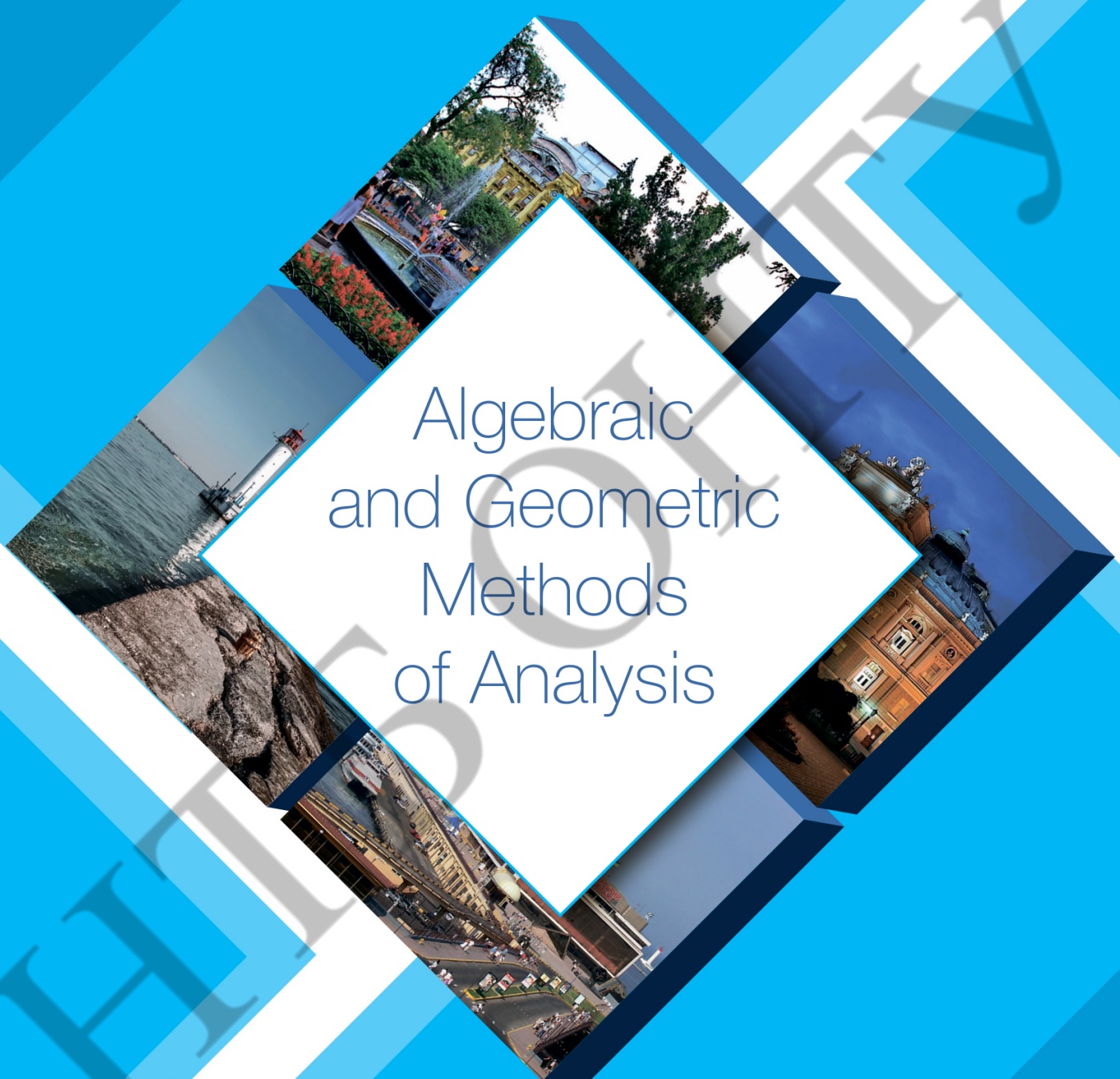


International  
Scientific Conference



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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# On some vanishing theorems of global character about geodesic mappings of complete Riemannian spaces

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Generalization of Bocher technique (see for example, [1]) allows to broad to the complete Riemannian spaces a lot of theorems of geodesic unique definiteness on the whole proved previously only for the compact ones (see for example, [2]). It seems to be interesting to indicate some of them.

**Theorem 1.** *Complete Ricci semi-symmetric Riemannian  $C^r$ -spaces  $V^n$  ( $n > 2$ ,  $r > 4$ ) with positively definite metric form, Einstein tensor of which doesn't equal to zero, don't admit non-trivial (different from the affine) geodesic mappings on the whole.*

**Theorem 2.** *Complete Riemannian  $C^r$ -spaces  $V^n$  ( $n > 2$ ,  $r > 4$ ) with positively definite metric form and non-negative scalar curvature ( $R \geq 0$ ) don't admit non-trivial (different from the affine) geodesic mappings on the whole.*

**Theorem 3.** *Complete Ricci semi-symmetric Riemannian  $C^r$ -spaces  $V^n$  ( $n > 2$ ,  $r > 4$ ) with positively definite Ricci form, Einstein tensor of which doesn't equal to zero, scalar curvature of which preserves its sign ( $R \geq 0$  or  $R \leq 0$  everywhere in  $V^n$ ) don't admit non-trivial (different from the affine) geodesic mappings on the whole.*

**Theorem 4.** *Complete Ricci semi-symmetric Riemannian  $C^r$ -spaces  $V^n$  ( $n > 2$ ,  $r > 4$ ) with positively definite Einstein form don't admit non-trivial (different from the affine) geodesic mappings on the whole.*

Examples of Riemannian spaces of the considered types are known.

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- [2] Sinyukova, H.N. Geodesic uniqueness in the whole of some generally recurrent Riemannian spaces, *Journal of Mathematical Sciences*, 177(2) : 710-715, 2010.

# Subwreath product as structure of normal subgroups of permutational wreath products

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In this research we continue our previous investigation of wreath product normal structure [1, 2] Normal subgroups and there structures for finite and infinite iterated wreath products  $S_{n_1} \wr \dots \wr S_{n_m}$ ,  $n, m \in \mathbb{N}$  and  $A_n \wr S_n$  are founded.

Let  $k(\pi)$  be the number of cycles in decomposition of permutation  $\pi$  of degree  $n$ .

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