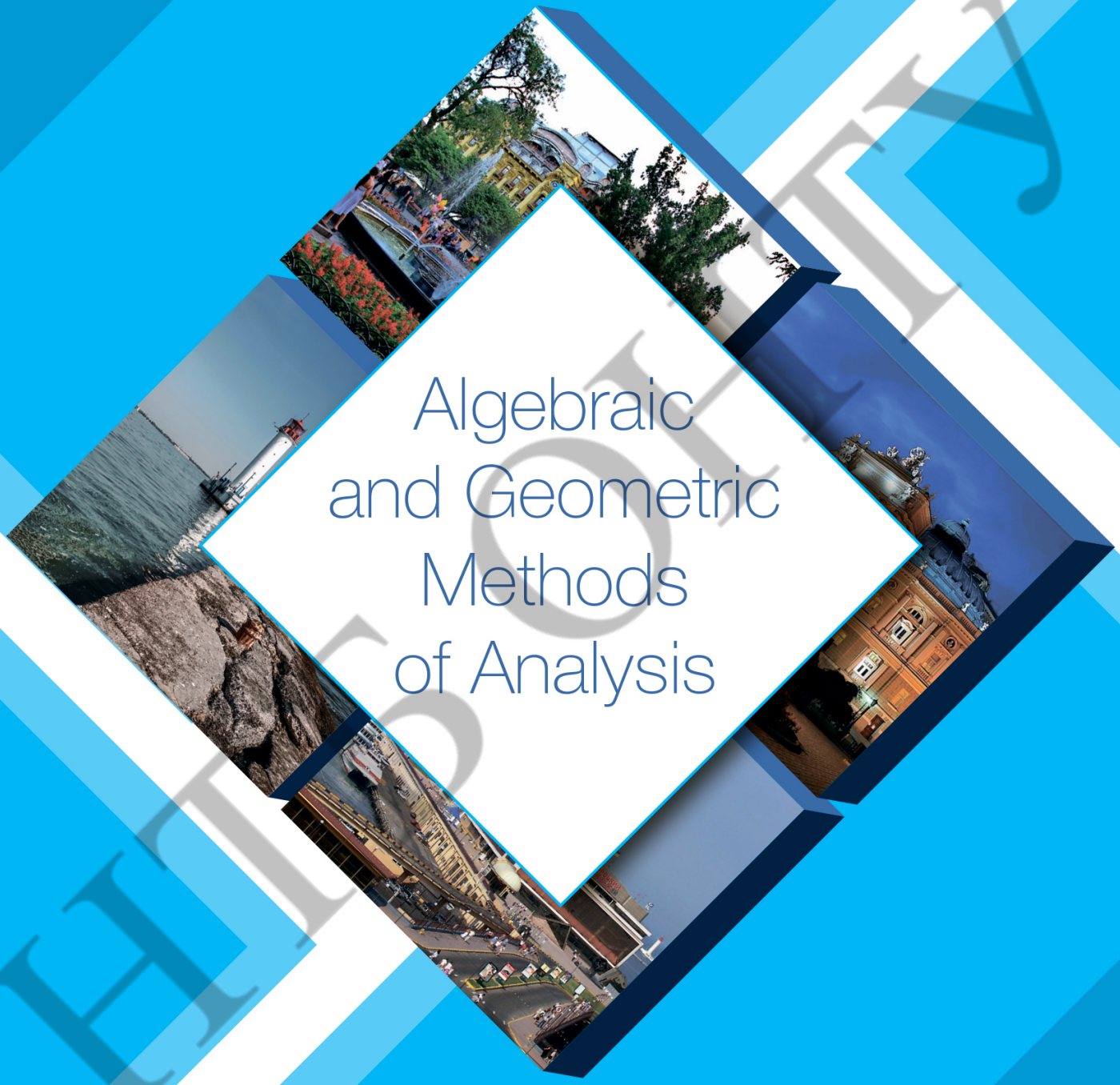
International
Scientific Conference



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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- Odesa National University of Technology, Ukraine
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On some nonlocal critical equations

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Aim of this talk will be to discuss some existence and multiplicity results for critical nonlocal fractional problems got via variational and topological methods. In particular we will present recent contributions got in the joint paper [1].

Fractional and nonlocal operators appear in various models coming from many different fields. This is one of the reason why, recently, nonlocal fractional problems attracted the interest of the entire scientific community and not just the mathematical one.

References

[1] G. Molica Bisci, K. Perera, R. Servadei and C. Sportelli. Nonlocal critical growth elliptic problems with jumping nonlinearities. *J. Math. Pures Appl.*, 183: 170–197, 2024.

On boundary estimates of mappings, acting onto domains with a locally quasiconformal boundary

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The following definitions are from [1]. A path γ in $\mathbb{R}^n$ is a continuous mapping $\gamma : \Delta \to \mathbb{R}^n$ where Δ is an interval in $\mathbb{R}$. Its locus $\gamma(\Delta)$ is denoted by $|\gamma|$. Given a family Γ of paths γ in $\mathbb{R}^n$, a Borel function $\rho : \mathbb{R}^n \to [0, \infty]$ is called *admissible* for Γ, abbr. $\rho \in \operatorname{adm}\Gamma$, if $\int\limits_{\gamma} \rho(x)|dx| \geqslant 1$ for each (locally rectifiable) $\gamma \in \Gamma$. The *modulus* of Γ is defined by the relation

$$M(\Gamma) := \inf_{\rho \in \operatorname{adm}\Gamma} \int\limits_{\mathbb{R}^n} \rho^n(x) dm(x) \tag{1}$$

interpreted as $+\infty$ if $\operatorname{adm}\Gamma = \varnothing$. Everywhere below, unless otherwise stated, the boundary and the closure of a set are understood in the sense of the extended Euclidean space $\overline{\mathbb{R}^n}$.