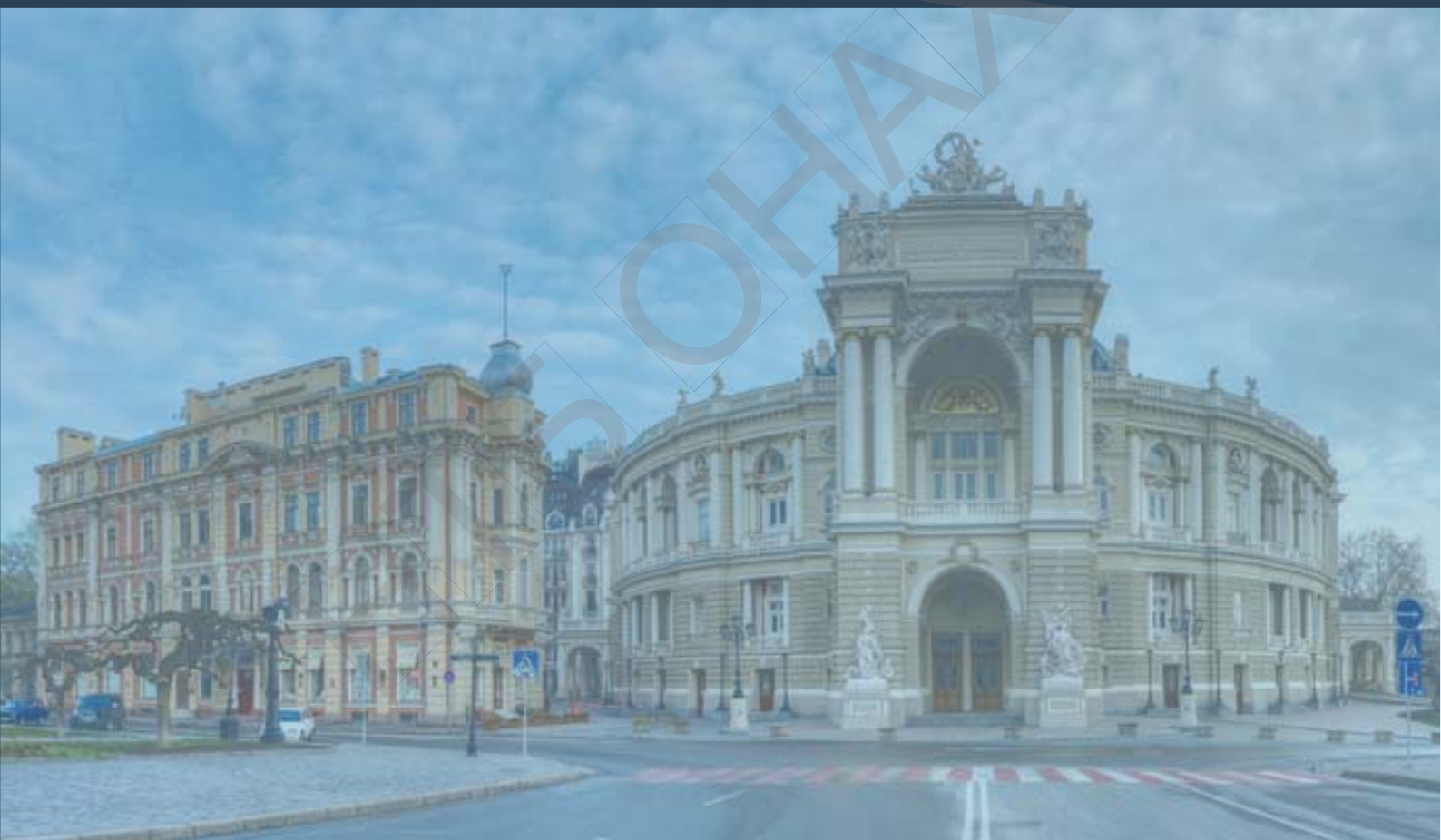


International scientific conference

**“Algebraic and Geometric
Methods of Analysis”**

Book of abstracts



May 28 - June 3, 2019

Odesa, Ukraine

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- Algebraic methods in geometry
- Differential geometry in the large
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- General and algebraic topology
- Dynamical systems and their applications
- Geometric problems in mathematical analysis
- Geometric and topological methods in natural sciences
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ФІТБ ОНАФТ

Formation of algorithmic culture of students in the classroom of higher mathematics

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The paper deals with the study and application of algorithms in the lessons of higher mathematics. The course of higher mathematics has sufficiently broad possibilities for the formation, study and application of algorithms, since its content naturally lays down the algorithmic line. The task of the formation of universal computer literacy should be solved when teaching all academic subjects of higher educational institutions. A significant role is given to the course of higher mathematics. When studying this course, students develop stable mathematical skills more successfully if special educational instructions and plans for solving important problems are introduced. They serve as propedeutics of the formation of the algorithmic culture in the future. On the other hand, a firm knowledge of the plans for solving the basic problems of a course in higher mathematics is the initial foundation of students' mathematical preparation.

Applying plans for solving problems in the process of teaching higher mathematics, students should be guided by the fact that they should not just remember one plan or another, but the main thing is to understand which theoretical sentences its application is based on, and each step of the training activity perform consciously, not automatically. Students are familiarized with plans by solving problems at a lecture, their further refinement is carried out in practical classes for various forms of work (frontal, group, individual).

Algorithmic culture of the future teacher of mathematics is an integral part of his general culture. The general culture of the future teacher of mathematics can be characterized as an expression of the maturity of the entire system of professionally significant personal qualities, productively implemented in the process of individual activity. General culture is the result of the qualitative development of knowledge, skills, abilities, interests, beliefs, norms of professional activity and behavior, abilities and social feelings of a future teacher of mathematics.

From the point of view of learning mathematical activity, algorithmic culture is part of mathematical culture. Algorithmic training contributes to the formation and development among students, and through them, students of specific ideas and skills related to understanding the essence of the algorithm and its properties, the essence of the programming language as a means of recording the algorithm, the algorithmic nature of mathematics methods and their applications associated with owning techniques and means of recording problem solving in an algorithmic language.

An algorithmic culture is understood as a set of specific "algorithmic" ideas, knowledge and skills that should be part of the general culture of a future teacher of mathematics at the present stage of society's development and, therefore, determine a purposeful component of a general cultural pedagogical education and student competence.

In conclusion, we note that the line of forming the algorithmic culture of students suggests the prospect of its further convergence at the level of interdisciplinary connections both with the course of mathematics and with other natural-mathematical and humanitarian academic disciplines.

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