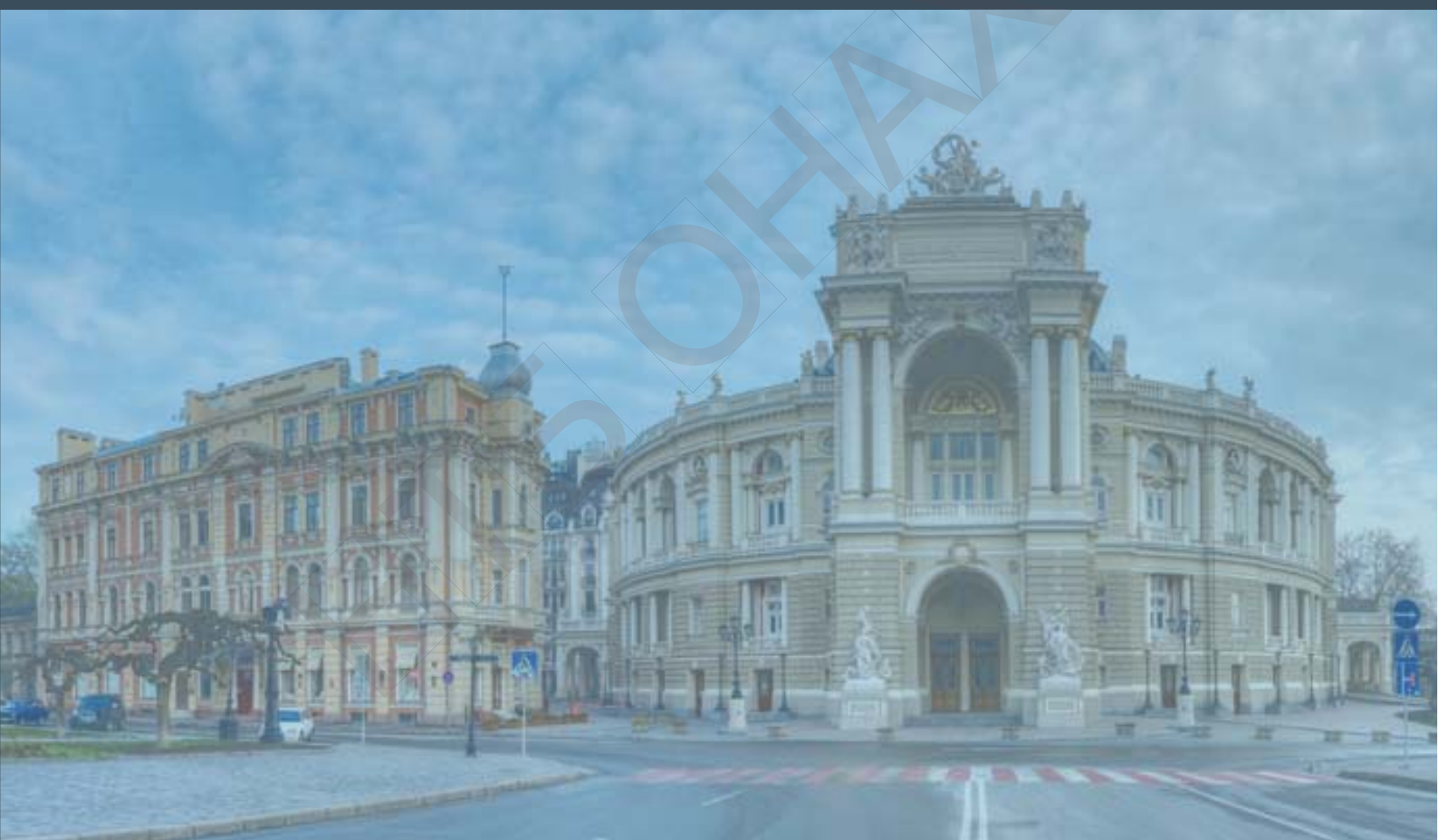


International scientific conference

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

Book of abstracts



May 28 - June 3, 2019

Odesa, Ukraine

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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 problems in mathematical analysis
- Geometric and topological methods in natural sciences
- History and methodology of teaching in mathematics

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ФІТБ ОНАФТ

The effectiveness of the use of computer programs in the teaching of mathematics in academic lyceums

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The article substantiates the role of mathematics in the general education system and reveals the expediency and possibility of using a computer program in mathematics lessons in academic lyceums.

The use of computer in the learning process, in essence, is a formative experiment aimed at studying and developing new personality traits. Important for the modern period of computerization of education is the realization of the fact that the use of computer technology will make the learning process more effective if they are used as a tool of knowledge, and not the transfer of knowledge. The computer is able to realize the many benefits of technical training. Modern computer programs allow you to create texts, various types of graphics, animation with sound, video. With their help, you can simulate the objects under study and conduct experiments to study their properties, simulate processes and phenomena, etc.

Interconnected training in computer science, mathematics and physics provides an opportunity to acquaint students with the use of applied mathematical packages as a tool in solving typical problems. Modeling is one of the difficult sections in the math course. The content-structural component of the model and mathematical modeling is an important component of the discipline, which is constantly being improved, as a result of which the study of the methodology for its study has not yet been completed. At the moment there is a large number of methodical training in computer modeling, which are actively used in the lessons of mathematics.

A model is a simplified resemblance of a real object or process. A key concept in modeling is considered a goal. The purpose of the simulation is the purpose of the future model. The target determines the properties of the original object to be reproduced in the model. You can model both material objects and processes. An information model is a description of a simulation object. On the basis of the presentation of the model are divided into tabular, graphical, object-informational and mathematical.

One of the available modeling tools is the Microsoft Excel office application, since almost all computer labs have MS Office. Microsoft Excel is a spreadsheet program that allows you to analyze large amounts of data. This program uses more than 600 mathematical, financial, statistical and other specialized functions, with which you can link various tables to each other, select arbitrary data presentation formats, create hierarchical structures. Mathcad is an application for engineering and mathematical computing, an industry standard for performing, distributing and storing calculations. Mathcad is a universal system, i.e. can be used in any field of science and technology - wherever mathematical methods are used. Blender is a free program for 3D modeling. The trick in this program is that during the creation of a 3-dimensional scene, the utility window can be divided into parts, each of which will be an independent window with a certain type of 3D scene, a timeline ruler, object settings.

Thus, the construction of simple graphical models, such as solving simple mathematical problems, is appropriate in the basic course of computer science. Independent development of graphical models requires programming knowledge, and this applies to material of increased difficulty, which is studied in a specialized computer science course or as part of an elective course [1].

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