1.2.2. Mathematical modeling, numerical methods and software packages

Уровень Training level: aspirantura
Form of training: aboutchnaya
Duration of training: 3 years old
Group of scientific specialties: *Computer Science and computer science*
Number of seats: 1 (contract)

Program Description

The purpose of mastering the postgraduate program is to write, design and submit for the defense of a dissertation for the degree of Candidate of Sciences, containing the solution of a scientific problem that is important for the development соответствof the corresponding branch of science.

The content of the specialty is the development of fundamental foundations and application of mathematical modeling, numerical methods and software packages for solving scientific and technical, fundamental and applied problems. An important feature of the specialty is that the works performed within its framework must contain original results simultaneously from three areas: mathematical modeling, numerical methods, and software packages.

The program is aimed at comprehensive and high-quality training of scientific and scientific-pedagogical personnel in the following areas:

1. Development of new mathematical methods for modeling objects and phenomena.
2. Development of qualitative and approximate analytical methods for studying mathematical models.
3. Development, justification and testing of effective computational methods using modern computer technologies.
4. Implementation of effective numerical methods and algorithms in the form of complex problem-oriented programs for conducting computational experiments.
5. Comprehensive research of scientific and technical problems using modern technology of mathematical modeling and computational experiment.
6. Development of new mathematical methods and algorithms for checking the adequacy of mathematical models of objects based on data from a full-scale experiment.
7. Development of new mathematical methods and algorithms for interpreting a full-scale experiment based on its mathematical model.
8. Development of computer and simulation modeling systems.