

Bachelor's thesis: 105 p., 14 fig., 7tabl., 2 appendixes, 15 sources.

The topic of the research: "System analysis of optimal acoustic fields for a given region".

The object of research is inhomogeneous sound field in oceanic waveguides of different configurations.

The subject of the study is optimal amplitude and phase control of acoustic fields in inhomogeneous waveguides.

The aim of the study:

- 1) study the problem of managing the sound field in a plane parallel to the waveguide;
- 2) development of software that, using a parabolic approximation method realizes optimal default search acoustic fields.

Theoretical and methodological basis of the study is the work of domestic and foreign scientists in the field of sonar theory and mathematical physics.

During the thesis by quality criteria acoustic fields generated and solved the problem corresponding amplitude and phase, amplitude and phase synthesis sonar antennas. It was created by the software to determine the optimum control of sound fields with the specified parameters.

The methodology is implemented on the basis of already known algorithms and using their own development.

The software is implemented using the programming language Python.

HYDROACOUSTIC, PARABOLIC EQUATION IN
HYDROACOUSTICS, PARABOLIC APPROXIMATION, OPTIMAL
CONTROL ARRAY, ANTENNA ARRAY