

ABSTRACT

Master's dissertation on the topic: " Investigation of two-channel capacitive MEMS sensitive element of automated measuring system with elements of artificial intelligence " contains: 96 pages., 32 tables, 22 figures, 48 appendices.

Object of research: The process of measuring the acceleration of gravity by creating a computer-integrated system with elements of artificial intelligence based on a new modern microelectromechanical two-channel capacitive gravimeter.

Subject of research: automated gravimetric system with elements of artificial intelligence.

Purpose: to increase the accuracy and speed of gravity acceleration measurements by developing and researching a computer-integrated system with artificial intelligence elements based on a new modern microelectromechanical two-channel capacitive gravimeter.

The results and their novelty:

1. Developed a scheme of automated gravimetric system based on unmanned aerial vehicle, which uses as a sensitive element capacitive MEMS gravimeter, and signal processing is using artificial computer intelligence;
2. The use is substantiated and an example of using artificial computer intelligence to process the input signal and obtain a clear response at the output is given.

Recommendations for the use of the results of the work: The developed system can be used in geological exploration works using gravimetric survey of the area.

Keywords. *UAV, MEMS*, artificial intelligence, gravimeter, fuzzy logic, capacitive gravimeter, two-channel capacitive gravimeter.