

## Abstract

The master's thesis contains: 109 pages, 66 drawings, 15 tables, 8 appendices, 22 sources in the list of links.

The object of study is coal production, which is subject to gas-dynamic phenomena.

The subject of the study is the automated subsystem of coal production management on the emission-hazardous coal seams.

The purpose of the work is to operate the coal mining subsystem on the emission-hazardous coal seams to ensure safe operation and increase the percentage of coal seam production.

The result of this work is an automated coal mining management subsystem that allows to increase the accuracy of forecasting at mines and reduce the risk of doing work, increase profits by increasing the percentage of coal production. Development of a Startup project based on the analysis of technical and economic indicators of the system operation.

The practical significance of the results obtained. Implementation of the coal mining management subsystem will increase the production of coal at the hazardous layers and reduce the risk of miners.

Relevance of work. To date, the forecasting methods at the mines are outdated, which is why the forecasting accuracy is rather low. This leads to mine crashes and reduced coal production. The following method of forecasting based on the method of processing time series of Hearst will increase the accuracy of the forecast and maintain it in real time. This will reduce the risks of doing the work, save the lives of the miners and increase the percentage of production that will increase profits.

Relationship with working with scientific programs, plans, topics. The scientific work was carried out in cooperation with the Research Center "Carbon Innovation" at the request of the Ministry of Energy and Coal Industry of Ukraine.

Testing the results of the thesis. II All-Ukrainian scientific-practical Internet conference of students, graduate students and young scientists on the topic: "Modern computer systems and networks in management". XIII International Scientific and Practical Conference "Ukrainian School of Mining Engineering". VII International Scientific and Practical Conference on "Computer Modeling in Chemistry and Technology and Systems for Sustainable Development". Publications. Based on the materials of the master's thesis, 2 articles and abstracts were published in the conference proceedings.

AUTOMATED CONTROL SYSTEM, COAL PRODUCTION, ALGORITHM, SOFTWARE.