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SUBSTANTIATION OF CONSTRUCTIVE ELEMENTS FOR MINING C_4^2 COAL SEAM IN THE "SAMARA" MINE PJSC "DTEK PAVLOGRADUGOL"

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The purpose is to substantiate the structural elements of the development system during the mining the C_4^2 coal seam in the conditions of the Samara mine due to the introduction of modern mining equipment.

Methodology. The research is carried out by substantiating the parameters of the stress-strain state of the rockmass during the coal mining with longwall faces in order to substantiate the structural elements of the mining system during the extraction of the C_4^2 coal seam in the the mine "Samara".

Conclusions. In the work on the basis of analytical researches and software experiment the actual problem of substantiation of parameters of mining the C_4^2 coal seam in the conditions of mine "Samara" of PJSC "DTEK Pavlogradugol" is solved. The results of the analysis of the nature and forms of rock pressure in longwall faces shows necessity of the increasing speed of the face movement, the stabilizing the rocks condition of the direct roof, and the loads on the fastening of the near face space. This researches were provided in the experimental set with simulating the different mining conditions. An analytical software experiment was carried out, and the analysis of the results of which showed that the stress-strain state of the rock mass significantly affects the intensity of rock pressure in the workings. Thus, when the speed of the wallface is more than 5 m / day, the value of the reference pressure zone is about 10 m, while the physical parameters of the reference pressure zone do not change. At the same time subsidence of sections of fastening sharply decreases, that corresponds to the classical theory of formation and management of a zone of temporary reference pressure. The analysis of industrial observations established the regularity of the change in the amount of freezing of the rock console of the main roof and the load on the fastening section from the speed of movement of the clearing face in the conditions of coal seam C_4^2.

Keywords: coal extraction, wallface, mechanized complex, stress-strain state of the rock mass

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WAYS OF TRANSMITTING INFORMATION VIA THE CABLE POWER LINE

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Purpose. Study the possibility of transmitting information via the cable power line of using NLS based on pseudorandom sequences(PRS).

Methodology. At the moment there are two methods to study extensive power networks. The first method is analytical one, which makes it impossible to obtain all the necessary information about the physical phenomena occurring in the network, since with non-stationary objects the input resistance and the overall distribution of the signal level are continuously varied.

The second method is electrical simulation, which provides ample opportunities to explore the different modes of operation. This takes into account all the phenomena affecting the transmitted signal.

Under the electric modeling implies the creation of a set of active and reactive resistances of the equivalent cell line which is typed in the network diagram which is electrically equivalent to a real network located in the mine.

To achieve this goal it is necessary to develop a laboratory setting that allows to generate a modulated NLS based on the PRS of Huffman coding, which will be sent to the communication line, and then transmitted to the receiver for subsequent correlation and integration. The experimental data at different levels of noise in the communication line will be recorded for further statistical processing.