OPTIMIZATION OF WORK OF THE EXCAVATOR BUCKET WHEEL IN EXPLOITATION OF COAL IN THE FUNCTION OF MINIMIZING MOVING COSTS

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ABSTRACT

The purpose of this paper is to analyze and give a practical contribution to the necessary optimization of work of the excavator bucket wheel in exploitation of coal in function of minimizing the costs to relocate the exact definition of the optimal technological schemes of work, excavator SRs 1050 as the newest excavator unit which is work in MU Mines Suvodol- Bitola and it works on the new site layer of underground lignite coal series, and to show that by using certain technical solutions for tracking and positioning of the excavator we can achieve significant reduction in time of the planned delays this would be achieved reducing production costs. With a practical example in the real operating conditions we can perform the reduction of costs which would make way for future to implement the same system and other excavator units.

Keywords: positioning control, optimization, technological schemes of work, displacement

1. INTRODUCTION

Optimization of the work of the excavator bucket wheel to reduce exploitation costs can be made by multiple models for optimization of which the most appropriate according to their ability to realization and effects of them in real working conditions in coal mines can separate the following:

- Model for optimality of technological schemes of work
- Model for work of the excavator bucket wheel in optimal regime.

Model for optimality of technological schemes of work of the excavator units determines the values of technological parameters in function of achieving the maximum capacity in different cases of work of the excavator in block of the bench for purpose the least time for excavation of one block [3].

Optimization of work of the excavator bucket wheel in exploitation of coal in the function of minimizing moving costs requires performing of the optimization in terms of: