

## Obtaining the Analytic Dependence for Estimating the Ore Mill Operation Modes

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**Abstract :** The particular significance of comprehensive estimation of the increase in the operation efficiency of the mill motor electromechanical system, providing the main technological process for obtaining a metallic concentrate, as well as the technical state of the system are substantiated. The works carried out in the sphere of investigating, creating, and improving the operation modes of electric drive motors and ore-grinding mills have been studied. Analytic dependences for estimating the operation modes of the ore-grinding mills aimed at improving the ore-crushing process maintenance and technical service efficiencies have been obtained. The obtained analytic dependencies establish a link between the technological and power parameters of the electromechanical system, and allow to estimate the state of the system and reveal the controlled parameters required for the efficient management in case of changing the technological parameters. It has been substantiated that the changes in the technological factors affecting the consumption power of the drive motor do not cause an instability in the electromechanical system.

**Keywords :** electromechanical system, estimation, operation mode, productivity, technological process, the mill filling degree

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