

An Algorithm for Estimating the Stable Operation Conditions of the Synchronous Motor of the Ore Mill Electric Drive

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Abstract : An algorithm for estimating the stable operation conditions of the synchronous motor of the ore mill electric drive is proposed. The stable operation conditions of the synchronous motor are revealed, taking into account the estimation of the δ angle change and the technological factors. The stability condition obtained allows to ensure the stable operation of the motor in the synchronous mode, taking into account the nonlinear character of the mill loading. The developed algorithm gives an opportunity to present the undesirable phenomena, arising in the electric drive system. The obtained stability condition can be successfully applied for the optimal control of the electromechanical system of the mill.

Keywords : electric drive, synchronous motor, ore mill, stability, technological factors

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