# INFLUENCE VOLTAGE ASYMMETRY TRANSITION ASYNCHRONOUS ELECTRIC SHOCK LOADS IN

**V. Savchenko**

**O. Sinyavsky**

**V. Savchenko**

*The research of electromagnetic and electromechanical transients in asynchronous electric asymmetry in voltages. The influence of voltage unbalance of the length of the transition process and the established rate.*

***Asynchronous motor, power, voltage asymmetry, electromagnetic time constant, electromechanical time constant, established rate, duration of start-up.***

Transitional regimes affect the performance of working machines and quality product that is processed. For electric, long working in transient conditions, may be essential as the loss of electricity for acceleration or braking system, resulting in reduced efficiency electric [1].

In the transition process in asynchronous electric drives greatly affects voltage asymmetry. Therefore, the study of the effect of voltage unbalance Transition asynchronous electric drives has theoretical and practical importance.

The purpose of research - to analyze the impact of voltage unbalance on the transition process in asynchronous electric drives.

Materials and methods of research. Analysis of transients in asynchronous electric conducted using the theory of electric relating to electromechanical properties of induction motors, dynamics and transients in electric drives, and the use of mathematical modeling.

Results. Moment and angular speed of the engine change over time nonlinear. And the default of angular velocity depends on the voltage unbalance and the transition process does not depend on it.

## Conclusions

Voltage asymmetry affects the nature of transients in asynchronous electric. For drives with a small electromechanical time constant voltage asymmetry can

eliminate voltage fluctuations and speed. This decreases the value of the maximum deviation point and increases dynamic fall speed. For electric drives, in which electromechanical time constant than the electromagnetic more than four times the speed of change and moment in time there are exponentially. When voltage unbalance moment and the angular velocity of the motor reaches steady-state value longer. For electric drives, in which electromechanical time constant is four electromagnetic moment and angular velocity of the engine change over time nonlinear. The factory default angular velocity depends on the voltage unbalance and the transition process does not depend on it.