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THE ANALYSIS OF ELECTROMAGNETIC PROCESSES IN OUTPUT CIRCUIT OF THE GENERATOR OF DISCHARGE PULSES WITH NON-LINEAR MODEL OF PLASMA-EROSIVE LOAD AT CHANGE THEIR PARAMETERS IN WIDE RANGES

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Abstract

In program medium Matlab Simulink modeling of transients in an output circuit of the generator of discharge pulses with non-linear model of plasma-erosive load adequate in wide ranges of change of their parameters is completed. As a result of modeling time dependences and also dependences of basic parameters of discharge pulses and their derivatives from amplitude of voltage of pulses and values of jet devices of an output circuit of the generator are gained and analyzed. Time dependences and dependences from amplitudes of voltage of pulses value of the charges which have transited through plasma channels and a hydraulic medium are calculated for the first time. On the basis of the analysis of dependences of their relations a *ranges of change of voltage and duration of pulses in which specific electrochemical activity of current is minimally are found. The card of electrical modes of plasma-erosive processing of the granulated conductive medium and recommendations about control of a grain-size composition of plasma-erosive particles are elaborated.* References 18, figures 10, table 1.

Key words: nonlinear resistance, discharge pulses, granular conductive media, plasma channels, modeling.

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