

Application of Statistical Linearized Models for Investigations of Digital Dynamic Pulse-Frequency Control Systems

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Abstract : This paper is focused on dynamic pulse-frequency modulation (DPFM) control systems. Currently, the control law based on DPFM control signals is widely used in direct digital control subsystems introduced in the automated control systems of technological processes. Statistical analysis of automatic control systems is reduced to its construction of functional relationships between the statistical characteristics of the errors processes and input processes. Structural and dynamic Volterra models of digital pulse-frequency control systems can be used to develop methods for generating the dependencies, differing accuracy, requiring the amount of information about the statistical characteristics of input processes and computing labor intensity of their use.

Keywords : digital dynamic pulse-frequency control systems, dynamic pulse-frequency modulation, control object, discrete filter, impulse device, microcontroller

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