SIELMEN 2019

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DOI: 10.1109/CSCS.2019.00026

Analytical Algorithms for Synthesis of PID Controllers to the Complex Objects

Abstract:
In this paper it is proposed to extend the maximum stability degree criterion method for synthesis of the typical controllers to the model of objects with arbitrary order inertia and non-minimum phase, astatism and time delay for the automatic control systems with aperiodic response. There are designed the analytical algorithms for synthesis of the P, PI, PD and PID controllers, which represent simple algebraic expressions, that require the reduced volume of calculations and not impose the restrictions on the complexity of the control object. It was

analyzed the efficiency of the developed algorithms and some study cases are presented.