

Use of Randomized Algorithms for Processing Information Signals in Aircraft Control¹

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We consider aircraft control systems where the formation of the control actions are implemented on the basis of the measured data signals. Kalman filtering algorithms are widely used to filter out the Gaussian noise. In the works of O. Granichin, use of randomized algorithms is considered for filtering random processes with measuring offset. The paper presents both continuous and discrete algorithms and extrapolation of the measured coordinates obtained in the framework of Kalman filtering methods; these are intended to be used in closed-loop control. Experiment performed in Matlab and the analysis of the results show that the system designed with a randomized algorithm processes the input signal and is insensitive to noises, as opposed to systems with Kalman filter, wherein the output coordinate monitors not only the input signal, but also a low frequency component of the noise measurement.

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