Optoelectronics, Instrumentation and Data Processing 2015 vol.51 N5, pages 449-455

Estimation of directly unmeasurable external perturbations using functional observers

Asanov A., Dem'yanov D.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

© 2015, Allerton Press, Inc. It is shown that the problem of estimating unmeasurable external perturbations from a mathematical point of view is equivalent to estimating some of the state variables of an extended plant. An algorithm for estimating unmeasurable external perturbations using a functional observer is proposed, and conditions for the solvability of the synthesis problem are formulated. The resulting solution is obtained using the method of matrix canonization.

http://dx.doi.org/10.3103/S8756699015050039

Keywords

estimation, external perturbations, functional observer, matrix canonization, synthesis algorithm