CONTENTS & ABSTRACTS

Klimchenko V.V.

Relations between the covariance matrices that are being calculated during the procedure of multichannel Levinson recursion are investigated. The dependencies revealed lead to halving operations of matrix inverting comparing to the standard version of the algorithm.

Keywords: system identification, multivariate time series, bock-toeplitz matrix, fast algorithm, Multichannel Levinson recursion.

**Bobrikov N.M., Denisov I.K., Kuznetsov S.I.,
and Shubladze A.M.**

The paper offers the procedure for automatic search for settings of regulators optimal with respect to the criterion of maximum degree of stability and matching structures that are determined by the rightmost roots of certain characteristic polynomial for PI- and PID- control laws. This procedure is developed on the basis of structures optimal with respect to the stated sense that have been derived earlier. The possibility to solve the examined task in different cases up to ultimate structures is shown.

Keywords: automatic search, systems with maximum degree of stability, solutions optimal with respect to the degree of stability.

Kurdukov A.P. and Timin V.N.

Second part of the paper addresses the problem of external disturbance attenuation in a power system. The problem solution is based on the technique of closed-loop pole placement in a given region of complex plain, as well as H_∞ technique of loop shaping using linear matrix inequalities. The comparison of features of loop systems with regulators that have been synthesized with and without H_∞ technique of loop shaping is given.

Keywords: power system control, H_∞ control theory, linear matrix inequalities, disturbance attenuation, loop shaping, closed-loop pole placement in a given region.

Gusev V.B., and Kosjanenko A.V.

The problem of forecasting macroeconomic parameters of the response of economic system on the change of volumes of government order connected with realization of the large-scale project is considered.

Keywords: scenario conditions, methods of indicative planning, model of the long-term forecast of reproduction of gross domestic product, volume of the government order, two ways model of the intermediate term forecast.

Gladkov Yu.M., Martinov V.L. and Shelkov A.B.

Formalized techniques for estimation of employer's backlog reimburse reserve of compulsory professional accident and disease insurance are considered.

Keywords: social insurance, insurance premium, backlog reserve.

Kleparskiy V.G.

Two components of the efficiency/cost ratio have been revealed with the use of «passive» experiment. The first component — a starting level of effectiveness/cost ratio is determined by the institutional development index. The second component — the current value of efficiency/cost ratio is determined by the level of use of fixed and human capital in the control process. A reasonably high adequacy of control of Russian economy is shown.

Keywords: effectiveness of control, efficiency/cost ratio, institutional development, human capital, adequacy of control.

Barminsky A.V.

The paper gives some recommendations (a strategy of inefficiency factors management) about how an indus-

trial economical subject should organize its operation to maximize efficiency of its activity. The mentioned strategy rests upon analysis of technical efficiency in the productive potential model, which is based on the stochastic frontier production function concept. In conclusion, this approach is compared with the classic regression analysis.

Keywords: production function, production factors, stochastic production function, stochastic frontier production function, inefficiency factors, technical efficiency.

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Keywords: regional polymeric complex, cluster method, development strategy.

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Silaev A.V.

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Keywords: large space structure, flexible oscillation, envelope, adaptive control.

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Andrienko A.Ya., and Ivanov V.P.

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Keywords: liquid rocket engine, power characteristics, fuel consumption control system.

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Keywords: medical diagnostics, pulse-wave form, diagnostics of a human vessels condition, expert system.

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