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Summaries of Papers Appearing in this Issue

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(These summaries may be reproduced)

OLGA POKORNÁ, Praha: *A method of inverting matrices.* Apl. mat. 15 (1970), 1—9. (Original paper.)

In present paper a method of computing the inverse of a matrix is proposed by means of computing inverses of matrices having simpler form than the original matrix. In particular the case is discussed when the auxiliary matrix inverted in each step of the process is triangular and of a lower order than the matrix of the previous step.

JAROSLAV MORÁVEK, MILAN VLACH: *Über Netzwerke mit eindeutig bestimmtem Fluss.* Apl. mat. 15 (1970), 10—17. (Originalartikel.)

Das Hauptergebniss dieser Arbeit ist ein algebraisches Kriterium für die Existenz und Eindeutigkeit eines Flusses in einem Transportnetzwerk.

JIŘÍ ANDĚL, Praha: *The efficiency of estimates in stationary autoregressive series.* Apl. mat. 15 (1970), 18—30. (Original paper.)

Let $X_1, \ldots, X_N$ be a finite random sequence with the expectation $\mathrm{E}X_t = \alpha\varphi_t$ $(1 \leqq t \leqq N)$ and with the regular covariance matrix $\boldsymbol{G}$. The matrix $\boldsymbol{G}$ and the values of φ_t are supposed to be known; α is an unknown parameter. The least squares estimate $\hat{\alpha}$ and the best linear unbiased estimate (BLUE) $\tilde{\alpha}$ of the parameter α are mentioned. The efficiency $e_N = \operatorname{var}\hat{\alpha}/\operatorname{var}\tilde{\alpha}$ is derived. The exact value of e_N is given for cases when $X_1, \ldots, X_N$ is a finite part of the autoregressive series of the first and of the second order and $\varphi_t \equiv 1$ and $\varphi_t = t$ $(1 \leqq t \leqq N)$ and for the autoregressive series of the n-th order with $\varphi_t \equiv 1$. The efficiency and the asymptotic efficiency of the BLUE $\tilde{\alpha}$ in cases when $\boldsymbol{G}$ is not true covariance matrix is also considered.

VRATISLAV HORÁLEK, Běchovice u Prahy: *On the moments in nonhomogeneous birth, immigration and death processes.* Apl. mat. 15 (1970), 31—40. (Original paper.)

Several internal relations in the form of equalities and inequalities between the first three general moments in nonhomogeneous processes: birth-death process, birth process, death process, birth-immigration-death process and immigration-death process are derived.

JAN ZITKO, Praha: *Generalization of the minimax method for calculation of the spectral radius of a matrix.* Apl. mat. 15 (1970), 41—62. (Original paper.)

Let B be a non-negative irreducible $n \times n$ cyclic matrix of index 2, let I be the unite matrix.

In this paper the calculation of the spectral radius of the matrix $B + \alpha I$ by minimax method as well as the rate of convergence in dependence on the number α is studied.