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(These summaries may be reproduced)

R. SUBRAMANIAN and S. KUMARASWAMY, Madras: *A stochastic model for linear viscoelastic substances.* Apl. mat. 18 (1973), 141—145. (Original paper.)

The effect of a random strain history on the stress distribution in a viscoelastic material is studied with the help of stochastic point processes. The first two moments of the stress have been obtained. An explicit expression for the characteristic functional is obtained in the case of a Poisson model.

STANISLAV KOUKAL, Brno: *Piecewise polynomial interpolations in the finite element method.* Apl. mat. 18 (1973), 146—160 (Original paper.)

The reduction and the concentration of the parameters determining an interpolation polynomial on a triangle are presented. The interpolations obtained are combined with reduced Hermite interpolations and these combinations are then used for solving plane elliptic boundary value problems under the assumption that the considered domain is polygonal.

STANISLAV JÍLOVEC, Praha: *A note on the characterization of consistently estimable functions.* Apl. mat. 18 (1973), 161—166. (Original paper.)

In the paper a necessary and sufficient condition for the existence of consistent estimates constructed on the basis of independent observations is given, boundedness of the estimated function not being assumed.

JAN HURT, Praha: *On a simple estimate of correlations of stationary random sequences.* Apl. mat. 18 (1973), 176—187. (Original paper.)

Suppose that $\{X_t\}_{t\in T}$ is a stationary Gaussian discrete random process where T is the set of integers. Assume $EX_t = 0$, $t \in T$, and denote $Z_t = \operatorname{sign} X_t$, $T_{tj} = Z_t Z_{t+j}$ for j natural. It is shown that $ET_{tj} = 2 \arcsin \varrho_j/\pi$ so that the quantities T_{tj} may be used to estimate the correlation function $\{\varrho_j\}_{j\in N}$. (Here ϱ_j denotes the correlation between X_t and X_{t+j}.) Further, the formula for $\operatorname{cov}(T_{0j}, T_{kj})$ in terms of ϱ' s is given. Asymptotic properties of the mean $\bar{T}_j = \sum_{t=1}^{N-j} T_{tj}/(N-j)$ are studied under the assumption that the spectral density of $\{X_t\}_{t\in T}$ is nonzero and possesses bounded second derivative. Particularly, the derived results hold for stationary autoregressive Gaussian random sequences which is the most important case in practice. It is proved that $\bar{T}_j$ is asymptotically normally distributed and that the sequence $\{T_{tj}\}_{t\in T}$ satisfies the law of large numbers. Finally, some numerical examples and Monte-Carlo studies are given.

JIŘÍ FIALA, Praha: *An algorithm for Hermite-Birkhoff interpolation.* Apl. mat. 18 (1973), 167—175. (Original paper.)

An algorithm for the Hermite-Birkhoff interpolation is presented, which reduces the problem to the Hermite interpolation. The missing values and derivatives are expressed by some of the given values and calculated from a system of linear equations. The system itself and its right-hand sides are computed from a set of Hermite interpolation problems. The needed values and derivatives of the Hermite interpolation polymonial can be computed using the algorithm given in the Appendix.

И. А. Вильнер, Москва, Павел Галайда, Кошице: *Схема многомерной номографической модели для выбора оптимального решения общей задачи линейного программирования.* Apl. mat. 18 (1973), 188—203. (Оригинальная статья.)

В работе идет речь о построении многомерной номографической модели линейного программирования и ее обобщениях. Авторы получают формулы для построения многомерной номограммы нулевого жанра на равномерных прямолинейных шкалах в многомерном пространстве. Рассматриваются разные варианты указаной выше номограммы на прямолинейных равномерных шкалах в зависимости от той или иной аналитической интерпретации данной задачи линейного программирования. В работе отмечается применение номограмм при решении так — называемых оптимальных задач на предлагаемой номографической модели, — — зрительно наблюдать и перебрать, т. е. пересмотреть, в короткий промежуток времени континуум возможностей определяемой величины, определяя оптимальное решение.