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Summaries of Papers Appearing in this Issue

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(These summaries may be reproduced)

MILAN GERYK, Přerov: *Roots of the circular cylindrical shell characteristic equation.* Apl. mat. 17 (1972), 409—421. (Original paper.)

In this paper the following fact is proved: the complete characteristic equation of 8-th degree for the closed circular cylindrical shell in Goldenweiser's version (Love-Timoshenko's approach to the change of circumferential curvature) has not real roots for harmonics $n = 2$, so that this version is not in contradiction to the law of conservation of energy. If we neglect little members in this equation, real roots appear. Solving this equation, two regions of the numerical instability arise. For the calculation of the roots a) algebraic algol-procedure RADICES, b) iteration method and c) asymptotic series, which is suitable in the instability region, are introduced.

NGUYEN-VAN-HUU, Ha-Noi: *Rank test of hypothesis of randomness against a group of regression alternatives.* Apl. mat. 17 (1972), 422—447. (Original paper.)

The problem of testing hypothesis of randomness against a group of alternatives of regression in a parameter is investigated and a rank test for this problem is suggested. This problem is a generalization of the problem of detecting a shift in a location parameter of a distribution occurring at an unknown time point between consecutively taken observations. The rank test in this work is shown to be locally average most powerful within the class of all possible rank tests in the sense of the definition in Section § 3. The asymptotic normality of the rank test statistic and the asymptotic efficiency of the rank test are shown not only for the case of location and scale parameter but for the case of general parameter.

JITKA SEGETHOVÁ, Praha: *Elimination on sparse symmetric systems of a special structure.* Apl. mat. 17 (1972), 448—460. (Original paper.)

The problem of solving sparse symmetric linear algebraic systems by elimination is discussed. A brief survey of the techniques used is given.

Another approach is introduced in the paper. It is more general than the bandmatrix approach. However, the matrix is not treated element by element as in the most general approach. The procedure for finding the ordering of rows and columns of a matrix suitable for the considered modification of elimination is given. The examples of matrices reordered by the proposed procedure are shown.