Summaries of Papers Appearing in this Issue

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(These summaries may be reproduced)

HELENA RŮŽIČKOVÁ, Brno: *Boundary value problems for the mildly non-linear ordinary differential equation of the fourth order.* Apl. mat. 19 (1974), 216—231. (Original paper.)

In this paper, the finite difference method is applied to a boundary value problem for the mildly non-linear ordinary differential equation of the fourth order. The existence of a unique solution of both the differential and the difference problem is proved and an $O(h^2)$ estimate of the discretization error and its first difference quotient is derived. Some numerical examples are given.

VÁCLAV VÍTEK, Praha: *Periodic solution of a weakly nonlinear hyperbolic equation in E_2 and E_3.* Apl. mat. 19 (1974), 232—245. (Original paper.)

For $n = 2$ and 3 the existence and uniqueness of classical periodic solution of

$$\Box_n u + 2au_t + 2(B, \nabla_n u) + cu = h(t, x) + \varepsilon f(t, x, u, \varepsilon)$$

($x = (x_1, x_2, \ldots, x_n)$) is proved assuming the periodicity of the right-hand side.

JIŘÍ ANDĚL, Praha: The most significant interaction in a contingency table. Apl. mat. 19 (1974), 246—252. (Original paper.)

Let us have a $r \times c$ contingency table with positive frequencies. The interaction is derived which is statistically most significant. A direct proof is given that the test based on this most significant interaction is asymptotically equivalent with the common χ^2-test (under the hypothesis of independence in the contingency table).

IVAN HLAVÁČEK, Praha, JOACHIM NAUMANN, Berlin: *Inhomogeneous boundary value problems for the von Kármán equations, I.* Apl. mat. 19 (1974), 253—269. (Original paper.)

The existence of a "variational" solution to the system of nonlinear equations, governing the equilibrium of a thin elastic plate is proved. The boundary conditions correspond with a plate, the edge of which is partially clamped, supported and elastically supported or clamped, being loaded by moments, transversal loads and by forces in the plane of the plate. In Part I only "fixed" plates are studied, i.e. such that any deflection of a rigid plate on rigid supports and clampings is eliminated by the kinematic constraints.