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(These summaries may be reproduced)

ZOLTÁN SADOVSKÝ, Bratislava: *Rectangular thin elastic plate with edges "remaining straight" during the deformation.* Apl. mat. 20 (1975), 478—386. (Original paper.)

The paper deals with the v. Kármán equations of a thin elastic plate. The edges of the rectangular plate are simply supported or clamped and the membrane effects due to the deflection of the plate do not alter its curvature. It is shown that the boundary condition can be given completely in terms of the deflection function and the stress function. After defining the variational solution of the problem two special cases, namely the buckling problem and the bending problem are treated. A bifurcation theorem is proved in the first case and an existence theorem in the other.

Иржи Кобза, Olomouc: *Методы типа Адамса с вторыми производными.* Apl. mat. (20 (1975), 389—405. (Оригинальная статья.)

Для численного решения задачи $y' = f(x, y)$, $y(a) = b$ изучаются методы типа Адамса

$$\sum_{\nu=0}^{m} \alpha_\nu y_{k-\nu} = h \sum_{\nu=0}^{n} \beta_\nu f_{k+r-\nu} + h^2 \sum_{\nu=0}^{l} \gamma_\nu g_{k+s-\nu}, \quad k = 1, 2, \ldots;$$

$$y_k = \eta_h(x_k), \quad k = q+1, \ldots, -1, 0; \quad q = \max(m, n-r, l-s);$$

$$[g = f_x + f \cdot f_y; \quad f_j = f(x_j, y_j), \; g_j = g(x_j, y_j)].$$

Выведены условия разрешимости разностной задачи, аппроксимации и сходимости предлагаемых методов.

ZBYNĚK ŠIDÁK, Praha: *Tables for the two-sample median test.* Apl. mat. 20 (1975), 406—420. (Original paper.)

For the non-parametric median test for two samples whose sizes m, n satisfy $3 \leqq m \leqq n$, $m + n \leqq 41$, tables of the upper tail probabilities are presented up to the point where 10% is exceeded for the first time.

JÁN LOVÍŠEK, Bratislava: *Weak solution of boundary value problem for the orthotropic plate reinforced with stiffening ribs.* Apl. mat. 20 (1975), 421—431. (Original paper.)

In this paper we prove the existence and the uniqueness of the weak solution of an orthotropic plate with stiffening ribs by methods of the abstract variational calculus. The solution of boundary value problem is obtained in the space $V(\Omega) \subset W_2^2(\Omega)$, where the bilinear form is $V(\Omega)$-elliptic. We introduce classical Galerkin's method for numerical solution Galerkin's approximation in space $V(\Omega)$ strongly converges to weak solution of boundary value problem in $V(\Omega)$.

GRAHAM SMITH, Sydney: *On the Morávek and Vlach conditions for the existence of a solution to the multi-index problem.* Apl. mat. 20 (1975), 432—435. (Original paper.)

The smallest possible example of a 3 index multi-index problem which satisfies the 1967 Morávek and Vlach conditions but does not have a solution is given.

FRIDRICH SLOBODA, Bratislava: *Parallel method of conjugate directions for minimization.* Apl. mat. 20 (1975), 436—446. (Original paper.)

A nongradient method of conjugate directions for minimization is described. The method has the quadratic convergence property and is closely related to the method for linear systems, which makes it possible to use reduced algorithms when the corresponding matrix is sparse.

JAROSLAV CHUDÝ, Praha: *Geometrische Synthese der Bewegung bei gegebener Polkonfiguration.* Apl. mat. 20 (1975), 446—456. (Originalartikel.)

In der Arbeit sind die Komplanarbewegungen untersucht, die durch eine gewisse Bedingung für drei nacheinander folgende Rastpole in der Abhängigkeit von der Konfigurationsfunktion gegeben sind. Für einige Konfigurationsfunktionen sind spezielle Bewegungen untersucht.