

## Summaries of articles published in this issue

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## SUMMARIES OF ARTICLES PUBLISHED IN THIS ISSUE

(Publication of these summaries is permitted)

MIROSLAV FIEDLER, VLASTIMIL PTÁK, Praha: *A quantitative extension of the Perron-Frobenius theorem for doubly stochastic matrices.* Czech. Math. J. 25 (100), (1975), 339–353. (Original paper.)

The best possible estimates for the distance of  $-1$  from the set of eigenvalues of a symmetric stochastic matrix in terms of the measure of irreducibility and the measure of primitivity are found.

THOMAS BOWMAN, Gainesville: *Left translations of compact semilattices and generalizations.* Czech. Math. J. 25 (100), (1975), 369–375. (Original paper.)

This paper shows that every left translation of a compact semilattice is continuous, and that the semilattice of all left translations with the compact-open topology is isomorphic to the semilattice of all retract ideals with the hyperspace topology. A corollary to the latter result is that the semilattice of all left translations of a compact semilattice is compact.

MILAN MEDVEĚ, Bratislava: *Generic properties of parametrized vectorfields I.* Czech. Math. J. 25 (100), (1975), 376–388. (Original paper.)

This paper is concerned with vectorfields depending on a parameter. Similar problems have been studied by P. Brunovský, whose works deal with one-parameter families of diffeomorphisms. These problems for parametrized vectorfields have been studied by V. I. Arnold, too.

GERNOT M. ENGEL, Owego, HANS SCHNEIDER, Madison: *Diagonal similarity and equivalence for matrices over groups with 0.* Czech. Math. J. 25 (100), (1975), 389–403. (Original paper.)

Conditions are given for the diagonal similarity of (possibly infinite) irreducible square matrices with entries in a group with 0. A technique is developed for deriving conditions for the diagonal equivalence of rectangular matrices. An application is given to the scaling of a finite real or complex matrix.

Jiří VESELÝ, Praha: *On a generalized heat potential.* Czech. Math. J. 25 (100), (1975), 404–423. (Original paper.)

A generalized heat potential corresponding in the classical case to the sum of single and double layer heat potentials connected with domains having non-smooth and time-dependent boundaries is introduced and studied in high dimensional Euclidean spaces. The importance of this concept lies in the fact that one can treat the Dirichlet boundary value problem for the heat equation by means of the method of integral equations with no a priori restrictions imposed on boundaries of regions in question.

JIŘÍ ROSICKÝ, Brno: *Concerning binding categories*. Czech. Math. J. 25 (100), (1975), 362—368. (Original paper.)

In this paper it is found a small category  $C$  such that an equational class of algebras with finitary operations is binding (i.e. any full category of algebras can be fully embedded into it) if and only if  $C$  can be fully embedded into it.

PETER WINTGEN, Berlin: *Homotopien von Untermannigfaltigkeiten mit nicht ausgearteter zweiter Fundamentalform*. Czech. Math. J. 25 (100), (1975), 424—437. (Originalartikel.)

Der Autor betrachtet in dieser Arbeit Immersionen in eine affin oder allgemeiner projektiv zusammenhängende Mannigfaltigkeit, welche nicht ausgeartete zweite Fundamentalformen besitzen und Homotopien, die ganz aus solchen Immersionen bestehen. Die Frage nach der Existenz solcher Immersionen und Homotopien scheint uns eine natürliche Verallgemeinerung des Homotopieklassifikationsproblems für nicht degenerierte Kurven in einer Riemannschen Mannigfaltigkeit zu sein, welches vor allem von E. A. Feldmann bearbeitet wurde. In ähnlicher Weise verallgemeinerte er unlängst das Problem, indem er Homotopien von Untermannigfaltigkeiten mit nicht verschwindendem mittlerem Krümmungsvektor untersuchte.

CORNELIU URSESCU, Jassy: *Multifunctions with convex closed graphs*. Czech. Math. J. 25 (100), (1975), 438—441. (Original paper.)

In this paper the author established some properties of multifunctions with convex closed graph which are in connection with the “open mapping theorem” and the “closed graph theorem”.

JÁN JAKUBÍK, Košice: *Sublattices with saturated chains*. Czech. Math. J. 25 (100), (1975), 442—444. (Original paper.)

In this note the problem is investigated whether a variety of modular lattices can be characterized by the requirement of not containing any sublattice with saturated chains isomorphic to some lattice belonging to a given set of lattices.

PAVEL DOKTOR, Praha: *Remark to the dependence of solution of nonlinear operator equation on the space in which it is solved*. Czech. Math. J. 25 (100), (1975), 475—479. (Original paper.)

In this paper, we consider dependence of solution of nonlinear boundary value problem on the given parameters, namely, on the type of boundary conditions. Results are given in abstract form for nonlinear operator equation in reflexive Banach space  $S$ .

JAROLÍM BUREŠ, Praha: *Some remarks on surfaces in the 4-dimensional Euclidean space*. Czech. Math. J. 25 (100), (1975), 480—490. (Original paper.)

In this paper surfaces in  $E^4$  contained in a hyperplane, compact surfaces with constant mean curvature and non-negative Gaussian curvature and surfaces in 3-dimensional sphere  $S^3$  in  $E^4$  are characterized.