Aplikace matematiky

Summaries of Papers Appearing in this Issue

Aplikace matematiky, Vol. 16 (1971), No. 5, (394a)

Persistent URL: http://dml.cz/dmlcz/103371

SUMMARIES OF PAPERS APPEARING IN THIS ISSUE

(These summaries may be reproduced)

IGOR VAJDA, Praha: *A discrete theory of search II.* Apl. mat. 16 (1971), 319—335. (Original paper.)

The first part of this paper has been published in the preceding number of this volume. In this part asymptotic estimates and formulas for the Bayes error are given, mostly under the assumption that the sampling is governed by a random strategy, and relations between random strategies of search and random coding are studied.

JAROSLAV HROUDA, Praha: *A contribution to Balas' algorithm.* Apl. mat. 16 (1971), 336—353. (Original paper.)

The article gives an alternative description of the Balas' algorithm (for the solution of the zero-one linear programming problem) suitable as a propedeutics for our next article. In addition, it systematizes and generalizes some older tests.

JAROSLAV HROUDA, Praha: *Staging in Balas' algorithm.* Apl. mat. 16 (1971), 354—369. (Original paper.)

The staging arises when some right-hand sides of the zero-one linear programming problem (the objective function being constrained by its current lowest value) gradually expand by discrete values. A generalization of Glover's way of recording the backtrack-type enumeration process is developed to solve such problems.

KAREL BUCHÁČEK, Praha: *Thermodynamics of monopolar continuum of grade n.* Apl. mat. 16 (1971), 370—383. (Original paper.)

Contrary to the theory of the simple material it is assumed that the values of physical quantities at a point are affected by the deformation history of a finite neighborhood of the point. In the case of the monopolar continuum of grade n, the physical quantities are in a functional dependence on the temperature and, moreover, on n deformation gradients which are found from a single shift function. Equations of equilibrium and the boundary values for all n stress tensors are evaluated on the basis of the First Law of Thermodynamics. Introducing the Hilbert space with the norm which expresses the fading of the memory it is possible to derive the system of constitutive equations from the Second Law of Thermodynamics. These equations enable us to evaluate the entropy as well as all stress tensors provided the functional dependence of the free energy on the history of n deformation gradients and on the history of temperature is given.