

Book reviews

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BOOK REVIEWS

J. Nešetřil. TOPOLOGICAL, ALGEBRAICAL AND COMBINATORICAL VOLUME. North-Holland, (1992).

Tento sborník obsahuje převážně příspěvky, které byly uveřejněny v časopise *Discrete Mathematics* (108). Obsahuje však i anglický překlad podstatné části řeči, kterou proslovil prof. M. Katětov na pohřbu Z. Frolíka, a český originál vzpomínky spisovatele Bohumila Hrabala na Z. Frolíka, jakož i její anglický překlad; autorem tohoto nesnadného překladu je M.A. Hein (Los Angeles). Součástí sborníku je stručný vědecký životopis Z. Frolíka a úplný seznam jeho publikací.

Třicet devět odborných příspěvků je rozděleno do tří částí:

- I. Geometrie a topologie
- II. Struktury a algebra
- III. Kombinatorika.

Šíře témat odráží obsah zimních škol z abstraktní analýzy, jejichž zakladatelem a dlouholetým organizátorem Z. Frolík byl. Je pochopitelné, že celé oblasti, např. teorie míry, musely být opomenuty, i když také byly centrálními náměty některých ročníků.

Podářilo se soustředit příspěvky významných světových i domácích matematiků, jména autorů jako P. Erdős, A. Hajnal, P. Frankl, T. Gallai, A.A. Razborov jsou toho přesvědčivým dokladem.

Odrazem centrálního postavení Z. Frolíka v české matematice je okolnost, že ve sborníku jsou příspěvky od autorů Z. Frolíkovi generačně blízkých (prof. M. Fiedler, prof. V. Pták, prof. V. Trnková), až po matematiky nejmladší generace (P. Valter, I. Kříž, J. Matoušek, R. Thomas).

Sborník lze doporučit pozornosti všech, kteří se zajímají o kombinatoriku a její aplikace v topologii a analýze.

Knihu lze objednat u nakladatele (North-Holland, Elsevier Science Publishers, P.O. Box 1991, 1000 BZ Amsterdam, Nizozemí).

Jan Pelant, Praha

TOPICS IN CALCULUS OF VARIATIONS. (Montecatini Terme 1987). Edited by M. Giaquinta. Lecture Notes in Mathematics, Vol. 1365, Springer-Verlag, Berlin 1989, x+196 pp., price DM 37,-

The volume under review comprises the texts of six lectures presented (or intended to be presented) at the international course on the calculus of variations held in Montecatini in Italy in July 1987. Let us list the titles of these lectures: H. Brézis, S^k -valued maps with singularities; L. A. Caffarelli, Free boundary problems. A survey; J. Moser, Minimal foliations on a torus; L. Nirenberg, Variational methods in nonlinear problems; R. M. Schoen, Variational theory for the total scalar curvature functional for Riemannian metrics and related topics; A. J. Tomba, A classical variational approach to Teichmüller theory. Two of these lectures (L. A. Caffarelli, L. Nirenberg) are introductory, the other ones, devoted to problems of geometric origin, are more specialized.

Jan Seidler, Praha

ESTIMATION AND CONTROL OF DISTRIBUTED PARAMETER SYSTEMS. Edited by W. Desch, F. Kappel, and K. Kunisch, International Series of Numerical Mathematics, Vol. 100, Birkhäuser Verlag, Basel-Boston-Berlin 1991, xii+389 pp., price SFr 118,-.

This volume consists of 27 papers presented at the "International Conference on Control and Estimation of Distributed Parameter Systems", held in July 1990 in Vorau (Austria). All contributions are full-length papers and were subjected to a refereeing process, which raises the value of the book. A wide range of problems in linear and nonlinear control and parameter estimation for systems described by partial differential equations is addressed; in most cases via infinite-dimensional methods.

The book is produced in \TeX and this contributes to the good impression of this proceedings.

Bohdan Maslowski, Praha

Manfredo Perdigão do Carmo: RIEMANNIAN GEOMETRY. Birkhäuser, Boston, 1992, s. 300, cena SFr 78,-.

Kniha je úvodem do studia riemannovské geometrie. V prvních kapitolách jsou definovány základní pojmy – varieta, metrika, konexe. Kapitoly následující jsou věnovány vlastnostem geodetik, křivosti a základům variačního počtu na varietách. Závěrečné kapitoly pojednávají o globálních vlastnostech Riemannových variet. Zde se mimo jiné studuje fundamentální grupa variet se zápornou křivostí a kapitola poslední je věnována důkazu věty o sféře. Tuto větu považuji za tak krásnou, že si ji dovoluji citovat: Pokud M je kompaktní, jednoduše souvislá Riemannova varieta jejíž křivost K splňuje nerovnost $\frac{1}{4} < K \leq 1$, potom M je homeomorfní sféře. Pokud vím, recenzovaná kniha je první učebnicí, kde je tato věta prezentována.

Kniha nevyžaduje, kromě základů diferenciálního počtu, žádné předběžné znalosti, dobře se čte a mohu ji vřele doporučit.

Martin Markl, Praha

COMPUTATION AND CONTROL II. K. L. Bowers, J. Lund, editors, Progress in Systems and Control Theory, Vol. 11, Birkhäuser, Boston-Basel-Berlin 1991, 369 pp.

This volume comprises 24 articles which were presented at the second Bozeman conference on computation and control, held at Montana State University in August 1990. Most of the papers is devoted to the optimal control of distributed parameter systems, and topics related to numerical mathematics prevail, both theoretical and computational aspects being addressed. We would like to mention here explicitly at least F. Kappel's survey paper on the linear quadratic regulator problem for delay systems via the semigroup theory.

Jan Seidler, Praha

INSTRUCTIONS FOR AUTHORS

The journal *Mathematica Bohemica* publishes papers of high scientific quality which bring new mathematical results. Papers which have been published or submitted for publication elsewhere are not acceptable. English language is preferred, but German and French languages are also admissible.

It is sufficient to send one copy of the manuscript to the Editorial Office, but not a carbon copy. However, the author should keep a copy of his contribution, because the Editor cannot take the responsibility for a possible loss of the manuscript during the refereeing procedure. Every manuscript is passed to a referee for his opinion and comments, and then it is subject to the approval of the Editorial Board. The manuscript must be the final version of the paper, changes during the galley proofs being admissible only exceptionally.

The arrangement of the paper should be as follows: Title of the paper; Author's name and city; Summary (not exceeding 12 lines); Keywords; AMS classification; text of the paper; References; Author's precise address (possibly also e-mail address).

The manuscript should be typewritten or printed (with usual size of types), double-spaced, on one side of sheets of A4 size (297 mm × 210 mm). Mathematical formulae must be clearly readable. Since the journal is typeset by $\text{T}_{\text{E}}\text{X}$, all usual fonts of $\text{T}_{\text{E}}\text{X}$ are available for mathematical symbols. However, if some more unusual fonts, or many different fonts are used, it is advisable to mark them in some clear way, and to attach a special list of these marks and corresponding fonts.

Displayed formulae are numbered on the left side. References should be listed in the following style:

[1] P. G. Ciarlet: *The Finite Element Method for Elliptic Problems*. North-Holland, Amsterdam 1978.

[2] M. Křížek: On semiregular families of triangulations on linear interpolation. *Appl. Math.* 36 (1991), 223–232.

References in the text should be quoted by the name of the author and the corresponding number in brackets [.]

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