

Ensembles convexes et inégalités géométriques

Objektyp: **Chapter**

Zeitschrift: **L'Enseignement Mathématique**

Band (Jahr): **47 (2001)**

Heft 3-4: **L'ENSEIGNEMENT MATHÉMATIQUE**

PDF erstellt am: **23.09.2024**

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differential geometry, topology, the theory of Lie groups and many more. The authors detail these connections, some of which are well known, but many much less so.

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Herbert EDELSBRUNNER. — **Geometry and topology for mesh generation.** — Cambridge monographs on applied and computational mathematics, vol. 6. — Un vol. relié, 16×23,5, de XII, 177 p. — ISBN 0-521-79309-2. — Prix: £29.95. — Cambridge University Press, Cambridge, 2001.

The book combines topics in mathematics (geometry and topology), computer science (algorithms), and engineering (mesh generation). The original motivation for these topics was the difficulty faced (both conceptually and in technical execution) in any attempt to combine elements of combinatorial and numerical algorithms. Mesh generation is a topic in which a meaningful combination of these different approaches to problem solving is inevitable. The book develops methods from both areas that are amenable to combination and explains recent breakthrough solutions to meshing that fit into this category.

Jack E. GRAVER. — **Counting on frameworks: mathematics to aid the design of rigid structures.** — Dolciani mathematical expositions, vol. 25. — Un vol. broché, 15×23, de XII, 180 p. — ISBN 0-8835-331-0. — Prix: £23.95. — The Mathematical Association of America, Washington, distributed by Cambridge University Press, Cambridge, 2001.

Rigidity theory is a body of mathematics developed to aid in designing structures. Consider scaffolding that is constructed by bolting together rods and beams. The ultimate question is: “Is the scaffolding sturdy enough to hold the workers and their equipment?” There are several features of the structure that have to be considered in answering this question. Just how to design properly braced scaffolding (or the basic skeleton of any structure) is the problem that motivates rigidity theory. The purpose of this book is to develop a mathematical model for rigidity.

Géométrie différentielle

Lawrence CONLON. — **Differentiable manifolds.** — Birkhäuser advanced texts. — Second edition. — Un vol. relié, 17×24, de XII, 418 p. — ISBN 0-8176-4134-3. — Prix: SFr. 98.00. — Birkhäuser, Boston, 2001.

This second edition contains a significant amount of new material, which, in addition to classroom use, will make it a useful reference text. Topics that can be omitted safely in a first course are clearly marked, making this edition easier to use for such a course, as well as for private study by non-specialists wishing to survey the field. The themes of linearization, (re)integration, and global versus local calculus are emphasized throughout. Additional features include a treatment of the elements of multivariable calculus, formulated to adapt readily to the global context, an exploration of bundle theory, and a further (optional) development of Lie theory than is customary in textbooks at this level.

Seán DINEEN. — **Multivariate calculus and geometry.** — Springer undergraduate mathematics series. — Second edition. — Un vol. broché, 17×24, de XII, 254 p. — ISBN 1-85233-472-X. — Prix: DM 59.00. — Springer, London, 2001.

In this revised edition, which includes additional exercises and expanded solutions, Seán Dineen gives a solid description of the basic concepts, via simple familiar examples which are then tested in technically demanding situations. The author recognises the varied backgrounds students bring to the subject and only assumes the minimal prerequisite knowledge necessary for