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aber sehr rasch zu Ebenen übergegangen wird, die von kommutativen Körpern koordinatisiert werden. In affinen Ebenen werden die Mittelpunktsrelation studiert, die erstaunliche Konsequenzen hat, sowie Orthogonalitätsrelationen und das Winkelhalbieren. Ist das Winkelhalbieren immer möglich, trägt der Koordinatenkörper eine Anordnung, so dass man schon sehr nahe bei der euklidischen Ebene ist. Zum Schluss, im siebten Kapitel, wird dann gezeigt, welche geometrischen Eigenschaften dazu dienen können, die reelle Ebene unter allen übrigen affinen Ebenen auszuzeichnen.

Ensembles convexes et inégalités géométriques

Keith M. BALL, Vitali MILMAN, (Editors). — **Convex geometric analysis.** — Mathematical Sciences Research Institute publications, vol. 34. — Un vol. relié, 16×24 , de xx, 236 p. — ISBN 0-521-64259-0. — Prix: £ 30.00. — Cambridge University Press, Cambridge, 1999.

This collection of research and expository articles on convex geometry and probability reflects the work done at the program in convex geometry and geometric analysis that took place at MSRI in 1996, emphasizing the links between the geometry of convex bodies, probability theory, harmonic analysis, and recent probabilistic methods in computation. It includes contributions from C. Borell, J. Bourgain, E.D. Gluskin, W.T. Gowers, G. Kalai, G. Kuperberg, B. Maurey, V. Milman, A. Pajor, G. Schechtman, M. Schmuckenschlager, C. Schütt, G. Zang, and several of the most promising representatives of the new generation.

Chuanming ZONG. — **Sphere packings.** — Universitext. — Un vol. relié, $16,5 \times 24,5$, de XIII, 241 p. — ISBN 0-387-98794-0. — Prix: DM 79.00. — Springer, New York, 1999.

Sphere packings is one of the most fascinating and challenging subjects in mathematics. In addition to the classical sphere packing problems, this book also deals with the contemporary ones; such as, blocking light rays, the holes in sphere packings, and finite sphere packings. Not only are the main results of the subject presented, but also its creative methods from areas such as geometry, number theory, and linear programming are described. The book also contains short biographies of several masters of this discipline and many open problems.

Géométrie différentielle

Tobias H. COLDING, William P. MINICOZZI II. — **Minimal surfaces.** — Courant lecture notes, vol. 4. — Un vol. broché, $15,5 \times 22,5$, de VIII, 124 p. — ISBN 0-9658703-3-2. — Prix: US\$20.00. — Courant Institute of Mathematical Sciences, New York, 1999.

These notes are an expanded version of a one-semester course taught at Courant in 1998. Chapter 1 will first derive the minimal surface equation as the Euler-Lagrange equation for the area functional on graphs. The focus of this chapter is on the basic properties of minimal surfaces, including the monotonicity formula for area and the Bernstein theorem. Chapter 2 deals with generalizations of the Bernstein theorem discussed in Chapter 1. Chapter 3 starts by introducing stationary varifolds as a generalization of classical minimal surfaces. A proof of a generalization of the Bernstein problem is given. Chapter 4 discusses the solution to the classical Plateau problem, focusing primarily on its regularity. Finally, in Chapter 5, the authors discuss the theory of minimal surfaces in three-manifolds.

Theodore FRANKEL. — **The geometry of physics: an introduction.** — Un vol. broché, 18×25 , de XXII, 654 p. — ISBN 0-521-38753-1. — Prix: £22.95. — Cambridge University Press, Cambridge, 1998.

This book is intended to provide knowledge of those parts of exterior differential forms, differential geometry, algebraic and differential topology, Lie groups, vector bundles and Chern

forms that are essential for a deeper understanding of both classical and modern physics and engineering. Included are discussions of analytical and fluid dynamics, electromagnetism (in flat and curved space), thermodynamics, the deformation tensors of elasticity, soap films, special and general relativity, the Dirac operator and spinors, and gauge fields, including Yang-Mills, the Aharonov-Bohm effect, Berry phase, and instanton winding numbers.

Topologie générale

Alejandro ILLANES, Sam B. NADLER, Jr. — **Hyperspaces: fundamentals and recent advances.** — Un vol. relié, 16,5×23,5, de xvii, 512 p. — ISBN 0-8247-1982-4. — Prix: USS175.00. — Marcel Dekker, New York, 1999.

This book presents both solved and unsolved problems in hyperspaces - including a number that appear in print for the first time, emphasizes the hyperspaces 2^X and $C(X)$, where X is a continuum, discusses symmetric products, containment hyperspaces, selections, spaces of segments, and spaces of Whitney levels... incorporates basic material on absolute retracts, infinite-dimensional topology, Z -sets, Peano continua, boundary bumping, and the fixed point property, offers complete details for the solution of the dimension problem, the n -od problem, the product problem, and the characteristics of Class (W), covers results on Whitney properties, Whitney-reversible properties, and their relations.

Ioan M. JAMES. — **Topologies and uniformities.** — Springer undergraduate mathematics series. — Un vol. broché, 17×23,5, de xv, 230 p. — ISBN 1-85233-061-9. — Prix: DM 56.00 — Springer, London, 1999.

This book provides the reader with a modern account of the basic concepts of topological and uniform spaces, with an emphasis on the relation between the two. The material divides naturally into three sections; six chapters on topological theory, two chapters devoted to uniform theory and the final four chapters which draw on ideas from the first two sections. Based on the author's earlier book *Topological and Uniform Spaces*, the text has been thoroughly revised and expanded.

Hervé QUEFFELEC. — **Topologie: cours et exercices corrigés.** — Enseignement des mathématiques. — Un vol. broché, 16×24, de xiii, 211 p. — ISBN 2-225-83140-8. — Prix: FF 185.00. — Masson, Paris, 1998, diffusé par Dunod, Paris et en Suisse par Havas Services Suisse, Fribourg.

Ce livre est constitué de six chapitres: nombres réels, espaces topologiques et métriques, espaces compacts, espaces connexes, espaces complets, espaces ayant localement une propriété topologique. De nombreuses figures facilitent la compréhension du texte. Chaque chapitre est suivi d'exercices corrigés et commentés en détail. Le chapitre V contient un long problème sur la dimension de Hausdorff des compacts auto-similaires.

Topologie algébrique

Hans-Joachim BAUES. — **Combinatorial foundation of homology and homotopy.** — Springer monographs in mathematics. — Un vol. relié, 16×24, de xv, 363 p. — ISBN 3-540-64984-0. — Prix: DM 159.00. — Springer, Berlin, 1999.

This book considers deep and classical results of homotopy theory like the homological Whitehead theorem, the Hurewicz theorem, the finiteness obstruction theorem of Wall, the