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Calcul des variations

George Xian-Zhi YUAN. — **KKM theory and applications in nonlinear analysis.** — Pure and applied mathematics, vol. 218. — Un vol. relié, 16×23,5, de XII, 621 p. — ISBN 0-8247-0031-7. — Prix: US\$ 195.00. — Marcel Dekker, New York, 1999.

This reference provides an introduction to the principles and applications of Knaster-Kuratowski-Mazurkiewicz (KKM) theory and explores related topics in nonlinear set-valued analysis. The book highlights the generic method for analyzing stability and uniqueness... develops a general topological fixed point theory for set-valued analysis... generalizes abstract convex structures... details a general topological minimax theory... investigates the structure of set-valued mappings... studies the existence, algorithms, and solutions for variational and quasivariational inequalities... gives applications of Browder-Fan and Fan-Glicksberg fixed-point theorems..., etc.

Géométrie

David A. BRANNAN, Matthew F. ESPLIN, Jeremy J. GRAY. — **Geometry.** — Un vol. broché, 19×24,5, de XI, 497 p. — ISBN 0-521-59787-0. — Prix: £ 18.95. — Cambridge University Press, Cambridge, 1999.

This is a textbook that demonstrates the excitement and beauty of geometry. The approach is that of Klein in his Erlangen programme: a geometry is a space together with a set of transformations of that space. The authors explore various geometries: affine, projective, inversive, non-Euclidean and spherical. In each case the key results are explained carefully, and the relationships between the geometries are discussed. This richly illustrated and clearly written text includes full solutions to over 200 problems.

Gerald E. FARIN. — **NURBS: from projective geometry to practical use.** — Second edition. — Un vol. relié, 15,5×23,5, de XV, 267 p. — ISBN 1-56881-084-9. — Prix: US\$ 44.00. — A.K. Peters, Natick, Massachusetts, 1999.

NURBS (Non-Uniform Rational B-Splines) have become the de facto standard for geometric definition in CAD/CAM and computer graphics. This well-known book covers NURBS from their geometric beginnings to their industrial applications. The second edition incorporates new research results and a chapter on Pythagorean curves, a development that shows promise in applications such as NC machining or robot motion control.

Peter W. HALLINAN, Gaile G. GORDON, A.L. YUILLE, Peter GIBLIN, David MUMFORD. — **Two- and three- dimensional patterns of the face.** — Un vol. relié, 16×24, de VIII, 262 p. — ISBN 1-56881-087-3. — Prix: US\$ 48.00. — A.K. Peters, Natick, Massachusetts, 1999.

The human face is perhaps the most familiar and easily recognized object in the world, yet both its three-dimensional shape and its two-dimensional images are complex and hard to characterize. This book ties together applied mathematics, applied statistics, and engineering by applying general theories and concepts to the specific and familiar example of the human face. The authors include fully worked out examples of two approaches to face recognition, demonstrating the power of pattern theory and suggesting interesting new mathematics in the two- and three-dimensional aspects of the face.

Heinz LÜNEBURG. — **Die euklidische Ebene und ihre Verwandten.** — Un vol. broché, 17×24, de VIII, 207 p. — ISBN 3-7643-5685-5. — Prix: SFr. 44.00. — Birkhäuser, Basel, 1999.

Unter Verzicht auf alles Räumliche wird hier die ebene euklidische Geometrie aufgebaut, indem mit der Untersuchung von beliebigen projektiven und affinen Ebenen begonnen, dann