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all unified by the same idea: they are all realizations of some operator equations in Banach spaces. One permeating theme in these equations involves the role of the Fredholm property. The work is carefully written, is self-contained and covers a broad range of topics and results. Key ideas are developed in a step-by-step approach, beginning with the required background material and culminating in the final chapters with state-of-the art topics.

Nikolay D. KOPACHEVSKI, Selim G. KREIN. — **Operator approach to linear problems of hydrodynamics. Vol. 1: Self-adjoint problems for an ideal fluid.** — Operator theory: advances and applications, vol. 128. — Un vol. relié, 17×24, de xxiv, 384 p. — ISBN 3-7643-5406-2. — Prix: SFr. 248.00. — Birkhäuser, Basel, 2001.

This is the first volume of a set of two devoted to the operator approach to linear problems in hydrodynamics. It presents functional analytic methods applied to the study of small movements and normal oscillations of hydromechanical systems having cavities filled with either ideal or viscous fluids. The work is a sequel to and at the same time substantially extends the volume *Operator methods in linear hydrodynamics: evolution and spectral problems* by N.D. Kopachevsky, S.G. Krein and Ngo Zuy Kan, published in 1989 by Nauka in Moscow. It includes several new problems on the oscillations of partially dissipative hydrosystems and the oscillations of visco-elastic or relaxing fluids. The work relies on the authors' and their students' work of the last 30-40 years.

Carlos S. KUBRUSLY. — **Elements of operator theory.** — Un vol. relié, 16,5×24, de xiii, 527 p. — ISBN 0-8176-4174-2. — Prix: SFr. 128.00. — Birkhäuser, Boston, 2001.

This book is aimed at a new generation of researchers and graduate students who need to apply operator theory to their field. Written in a user-friendly, motivating style, fundamental topics are presented in a systematic fashion, i.e. set theory, algebraic structures, topological structures, Banach spaces, Hilbert spaces, culminating with the spectral theorem, one of the landmarks in the theory of operators on Hilbert spaces. The exposition is concept-driven and as much as possible avoids the formula-computational approach.

## ***Calcul des variations***

Arturo LOCATELLI. — **Optimal control: an introduction.** — Un vol. relié, 17,5×24, de viii, 294 p. — ISBN 3-7643-6408-4. — Prix: SFr. 68.00. — Birkhäuser, Basel, 2001.

The book reflects the author's experience of teaching control theory courses at a variety of levels over a span of thirty years. The level of exposition, the choice of topics, the relative weight given to them, the degree of mathematical sophistication, and the nature of the numerous illustrative examples, owe to the author's commitment to effective teaching. The book is suited for undergraduate/graduate students who have already been exposed to basic linear system and control theory and possess the calculus background usually found in any undergraduate curriculum in engineering.

## ***Géométrie***

Mauro BILIOTTI, Vikram JHA, Norman L. JOHNSON. — **Foundations of translation planes.** — Monographs and textbooks in pure and applied mathematics, vol. 243. — Un vol. relié, 16×23,5, de xv, 542 p. — ISBN 0-8247-0609-9. — Prix: US\$ 195.00. — Marcel Dekker, New York, 2001.

This book provides a comprehensive coverage of the construction and analysis of translation planes with regard to spreads, partial spreads. It coordinates structures, automorphisms, auto-