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Kapitel: Corps et polynômes

overview of the theory of regulators from its number theoretic origins, and its connections to analysis, topology, differential geometry, and algebra, is presented by the editors in the introduction, with key topics noted as follows: hyperbolic volume and the Borel regulator, the Chern-Simons invariant, the Bloch-Beilinson regulator, polylogarithms (classical and elliptic), and analytic torsion. This work is an outgrowth of a conference held at the Hebrew University in Jerusalem on *Regulators in Analysis, Geometry and Number Theory.*

James J. TATTERSALL. — **Elementary number theory in nine chapters.** — Un vol. broché, 15×23, de VIII, 407 p. — ISBN 0-521-58531-7. — Prix: £16.95 (relié: £45.00). — Cambridge University Press, Cambridge, 1999.

This book is intended to serve as a one-semester introductory course in number theory. Throughout the book a historical perspective has been adopted and emphasis is given to some of the subject's applied aspects; in particular the field of cryptography is highlighted. At the heart of the book are the major number theoretic accomplishments of Euclid, Fermat, Gauss, Legendre, and Euler, and to fully illustrate the properties of numbers and concepts developed in the text, a wealth of exercises has been included. It is assumed that the reader will have "pencil in hand" and ready access to a computer.

Corps et polynômes

Juan J. MORALES RUIZ. — **Differential Galois theory and non-integrability of Hamiltonian systems.** — Progress in mathematics, vol. 179. — Un vol. relié, 16×24, de XIV, 165 p. — ISBN 3-7643-6078-X. — Prix: SFr. 88.00. — Birkhäuser, Basel, 1999.

This book is devoted to the relation between two different concepts of integrability: the complete integrability of complex analytical Hamiltonian systems and the integrability of complex analytical linear differential equations. The connection of these two integrability notions is given by the variational equation (i.e. linearized equation) along a particular integral curve of the Hamiltonian system. The underlying heuristic idea, which motivated the main results presented in this monograph, is that a necessary condition for the integrability of a Hamiltonian system is the integrability of the variational equation along any of its particular integral curves. The necessary background on differential Galois theory and Hamiltonian systems is included, and several new problems and conjectures which open new lines of research are proposed.

Géométrie algébrique

H. FLENNER, L. O'CARROLL, W. VOGEL. — **Joins and intersections.** — Springer monographs in mathematics. — Un livre relié, 16×24, de VI, 307 p. — ISBN 3-540-66319-3. — Prix: DM 149.00. — Springer, Berlin, 1999.

The central topic of the book is refined intersection theory and its applications, the basic tool of investigation being the Stückrad-Vogel intersection algorithm, based on join construction. This algorithm is used to present a general version of Bézout's theorem, in classical and refined form. Connections with the intersection theory of Fulton-MacPherson are treated, using work of van Gastel employing Segre classes. Bertini theorems and connectedness theorems form another major theme, as do various measures of multiplicity. The hope is that the book will inform algebraists of important methods from algebraic geometry and widen the interest of geometers in recent relevant advances in commutative algebra.