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Kapitel: Corps et polynômes

have only an elementary knowledge of algebraic number fields, making this book ideal for graduate students and researchers wishing for an insight into quadratic forms.

Sergei KONYAGIN, Igor SHPARLINSKI. — **Character sums with exponential functions and their applications.** — Cambridge tracts in mathematics, vol 136. — Un vol. relié, 16×23,5, de VIII, 163 p. — ISBN 0-521-64263-9. — Prix: £30.00. — Cambridge University Press, Cambridge, 1999.

The theme of this book is the study of the distribution of integer powers modulo a prime number. It provides numerous new, sometimes quite unexpected, links between number theory and computer science as well as other areas of mathematics. Possible applications include (but are not limited to) complexity theory, random number generation, cryptography, and coding theory. The main method discussed is based on bounds of exponential sums. Accordingly, the book contains many estimates of such sums, including new estimates of classical Gaussian sums. It also contains many open questions and proposals for further research.

Corps et polynômes

Bruno DESCHAMPS. — **Problèmes d'arithmétique des corps et de théorie de Galois.** — Collection méthodes. — Un vol. broché, 15×22, de 247 p. — ISBN 2-7056-6379-7. — Prix: FF 180.00. — Hermann, Paris, 1998.

L'ouvrage poursuit un double objectif: présentation des notions classiques: corps finis, polynômes cyclotomiques, symbole de Legendre, etc.; présentation de notions plus sophistiquées: corps pythagoriciens, arithmétique des corps ordonnables, corps gauches, corps hilbertiens, niveau de corps, etc., ainsi que des résultats frappants d'arithmétique tels que l'impossibilité de la quadrature du cercle ou le fait qu'un élément de torsion dans un groupe de Galois absolu est une involution. Ce livre s'adresse principalement aux étudiants qui passent un certificat d'algèbre commutative et/ou d'arithmétique, et plus encore à ceux qui, parmi eux, se destinent à un troisième cycle universitaire.

Paulo RIBENBOIM. — **The theory of classical valuations.** — Springer monographs in mathematics. — Un vol. relié, 16×24, de IX, 403 p. — ISBN 0-387-98525-5. — Prix: DM 129.00. — Springer, New York, 1999.

In the second half of the last century, Kummer introduced "local" methods in his study of Fermat's theorem. Hensel constructed the p-adic numbers and proved the so-called "Hensel lemma". Kürschak formally introduced the concept of a valuation of a field, and Ostrowski, Hasse, Schmidt, Krull, and others developed the theory. These classical valuations play a role in the study of number fields and algebraic functions of one variable. The present book is one of the first texts in English devoted to the theory of classical valuations. The book is self-contained and up-to-date, and proofs are given in full detail.

Helmut VÖLKLEIN, David HARBATER, Peter MÜLLER, J.G. THOMPSON, (Editors). — **Aspects of Galois theory.** — London Mathematical Society lecture note series, vol. 256. — Un vol. broché, 15,5×23, de VIII, 282 p. — ISBN 0-521-63747-3. — Prix: £27.95. — Cambridge University Press, Cambridge, 1999.

Galois theory is a central part of algebra, dealing with symmetries between solutions of algebraic equations in one variable. This is a collection of papers from the participants of a conference on Galois theory, and brings together articles from some of the world's leading experts in this field. Topics are centred around the inverse Galois problem, comprising the full range of methods and approaches in this area, making this an invaluable resource for all those whose research involves Galois theory.