Record Nr. UNINA9910144619703321 Autore Izhboldin Oleg T Titolo Geometric Methods in the Algebraic Theory of Quadratic Forms: Summer School, Lens, 2000 / / by Oleg T. Izhboldin, Bruno Kahn, Nikita A. Karpenko, Alexander Vishik; edited by Jean-Pierre Tignol Berlin, Heidelberg:,: Springer Berlin Heidelberg:,: Imprint: Springer, Pubbl/distr/stampa . 2004 3-540-40990-4 **ISBN** Edizione [1st ed. 2004.] Descrizione fisica 1 online resource (XIV, 198 p.) Collana Lecture Notes in Mathematics, , 0075-8434; ; 1835 Disciplina 512.7/4 Soggetti Number theory Algebraic geometry **Number Theory** Algebraic Geometry Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Bibliographic Level Mode of Issuance: Monograph Includes bibliographical references. Nota di bibliografia Nota di contenuto Cohomologie non ramifiée des quadriques (B. Kahn) -- Motives of Quadrics with Applications to the Theory of Quadratic Forms (A. Vishik) -- Motives and Chow Groups of Quadrics with Applications to the uinvariant (N.A. Karpenko after O.T. Izhboldin) -- Virtual Pfister Neigbors and First Witt Index (O.T. Izhboldin) -- Some New Results Concerning Isotropy of Low-dimensional Forms (O.T. Izhboldin) --Izhboldin's Results on Stably Birational Equivalence of Quadrics (N.A. Karpenko) -- My recollections about Oleg Izhboldin (A.S. Merkurjev). The geometric approach to the algebraic theory of quadratic forms is Sommario/riassunto the study of projective quadrics over arbitrary fields. Function fields of quadrics have been central to the proofs of fundamental results since the renewal of the theory by Pfister in the 1960's. Recently, more refined geometric tools have been brought to bear on this topic, such as Chow groups and motives, and have produced remarkable advances on a number of outstanding problems. Several aspects of these new methods are addressed in this volume, which includes - an introduction to motives of quadrics by Alexander Vishik, with various applications, notably to the splitting patterns of quadratic forms under

base field extensions: - papers by Oleg Izhboldin and Nikita Karpenko

on Chow groups of quadrics and their stable birational equivalence, with application to the construction of fields which carry anisotropic quadratic forms of dimension 9, but none of higher dimension; - a contribution in French by Bruno Kahn which lays out a general framework for the computation of the unramified cohomology groups of quadrics and other cellular varieties. Most of the material appears here for the first time in print. The intended audience consists of research mathematicians at the graduate or post-graduate level.