
Mathematik

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Dialoge über Mathematik

Zeitschrift Für Angewandte Mathematik und Mechanik

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Numerical Mathematics

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Logik und Mathematik: Frege-Kolloquium, Jena, 1993 (Perspectives in Analytical Philosophy)

Vorlesungen Über Geschichte Der Mathematik: Bd. Von den ältesten Zeiten bis zum Jahre 1200 n. Chr. 3. Aufl. 1907

Acta mathematica

Karl Weierstraß (1815-1897)

Die Fakultät für Mathematik und Geoinformation/The Faculty of Mathematics and Geoinformation

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System Der Elementar-Mathematik

Die Grundoperationen Der Mathematik

Theory of Linear Connections

Field Arithmetic

Beweisen Im Mathematikunterricht

Algebraic Varieties

Ingenieur-mathematik

Vorlesungen Über Geschichte Der Mathematik: Bd. Von 1759 bis 1799. 1908

Bibliotheca mathematica

Vorlesungen Über Geschichte Der Mathematik: Bd. Von 1200-1668. 2. Aufl. [repr.] 1913

ABT., HANDSCHRIFTLICHER NACHLASS (10 v. in 11): Bd. 14. Mathematik. Physik und Chemie. Physische Geographie

Galois Theory

Neue und erweiterte Sammlung logarithmischer, trigonometrischer und anderer zum Gebrauch der Mathematik unentbehrlicher Tafeln

Mathematical Problem Posing

Lehrbuch der Mathematik für die mittleren und oberen Klassen. Th. 1

Mathematik und Astronomie Im Klassischen Altertum

Bulletin of the American Mathematical Society

Encyklopädie der reinen Mathematik und praktischen Geometrie

Norm Ideals of Completely Continuous Operators

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Geometric Invariant Theory

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Around Burnside

Combinatorics and Physics

Mathematik

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WILLIS HALLIE

Compact Complex Surfaces Springer

Science & Business Media

Algebraic geometry has always been an eclectic science, with its roots in algebra, function-theory and topology. Apart from early researches, now about a century old, this beautiful branch of mathematics has for many years been investigated chiefly by the Italian school which, by its pioneer work, based on algebro-geometric

methods, has succeeded in building up an imposing body of knowledge. Quite apart from its intrinsic interest, this possesses high heuristic value since it represents an essential step towards the modern achievements. A certain lack of rigour in the classical methods, especially with regard to the foundations, is largely justified by the creative impulse revealed in the first stages of our subject; the same phenomenon can be observed, to a greater or less extent, in the historical development of any other science, mathematical or non-mathematical. In any

case, within the classical domain itself, the foundations were later explored and consolidated, principally by SEVERI, on lines which have frequently inspired further investigations in the abstract field. About twenty-five years ago B. L. VAN DER WAERDEN and, later, O. ZARISKI and A. WEIL, together with their schools, established the methods of modern abstract algebraic geometry which, rejecting the classical restriction to the complex groundfield, gave up geometrical intuition and undertook arithmetisation under the growing influence of abstract

algebra.

Rational Curves on Algebraic Varieties

Springer Science & Business Media

The Faculty of Mathematics and Geoinformation of the TU Wien has existed as such since the division of the early, very large Faculty of Technical Sciences in 2004. It provides its own study programmes in both subjects, as well as ensuring the mathematical and geometrical basic education of the students of all seven other faculties. The faculty also conducts research in broad and highly crucial focal areas. The current volume is part of a comprehensive commemorative series published in 2015 for the bicentennial memorial of the TU Wien providing information on the research activities, teaching tasks, and history of the Faculty of Mathematics and Geoinformation, in particular over the last 50 years. Special attention has been paid to the exceptional scientific achievements of faculty members.

Partial Differential Relations Walter de Gruyter GmbH & Co KG

Series 3 includes the section "Rezensionen".

Duration and Change Springer Science &

Business Media

Perhaps it is not inappropriate for me to begin with the comment that this book has been an interesting challenge to the translator. It is most unusual, in a text of this type, in that the style is racy, with many literary allusions and witticisms: not the easiest to translate, but a source of inspiration to continue through material that could daunt by its combinatorial complexity. Moreover, there have been many changes to the text during the translating period, reflecting the ferment that the subject of the restricted Burnside problem is passing through at present. I concur with Professor Kostrikin's "Note in Proof", where he describes the book as fortunate. I would put it slightly differently: its appearance has surely been partly instrumental in inspiring much endeavour, including such things as the paper of A. I. Adian and A. A. Razborov producing the first published recursive upper bound for the order of the universal finite group $B(d,p)$ of prime exponent (the English version contains a different treatment of this result, due to E. I. Zel'manov); M. R. Vaughan-Lee's new approach to the subject; and finally, the crowning

achievement of Zel'manov in establishing RBP for all prime-power exponents, thereby (via the classification theorem for finite simple groups and Hall-Higman) settling it for all exponents. The book is encyclopaedic in its coverage of facts and problems on RBP, and will continue to have an important influence in the area.

Dialoge über Mathematik Walter de Gruyter

Praise for the First Edition ". . . will certainly fascinate anyone interested in abstract algebra: a remarkable book!"

—*Monatshefte für Mathematik* Galois theory is one of the most established topics in mathematics, with historical roots that led to the development of many central concepts in modern algebra, including groups and fields. Covering classic applications of the theory, such as solvability by radicals, geometric constructions, and finite fields, Galois Theory, Second Edition delves into novel topics like Abel's theory of Abelian equations, casus irreducibilis, and the Galois theory of origami. In addition, this book features detailed treatments of several topics not covered in standard texts on Galois theory, including: The

contributions of Lagrange, Galois, and Kronecker How to compute Galois groups Galois's results about irreducible polynomials of prime or prime-squared degree Abel's theorem about geometric constructions on the lemniscates Galois groups of quartic polynomials in all characteristics Throughout the book, intriguing Mathematical Notes and Historical Notes sections clarify the discussed ideas and the historical context; numerous exercises and examples use Maple and Mathematica to showcase the computations related to Galois theory; and extensive references have been added to provide readers with additional resources for further study. Galois Theory, Second Edition is an excellent book for courses on abstract algebra at the upper-undergraduate and graduate levels. The book also serves as an interesting reference for anyone with a general interest in Galois theory and its contributions to the field of mathematics. Zeitschrift Für Angewandte Mathematik und Mechanik Springer Nature

In the 19 years which passed since the first edition was published, several important developments have taken place

in the theory of surfaces. The most sensational one concerns the differentiable structure of surfaces. Twenty years ago very little was known about differentiable structures on 4-manifolds, but in the meantime Donaldson on the one hand and Seiberg and Witten on the other hand, have found, inspired by gauge theory, totally new invariants. Strikingly, together with the theory explained in this book these invariants yield a wealth of new results about the differentiable structure of algebraic surfaces. Other developments include the systematic use of nef-divisors (in accordance with the progress made in the classification of higher dimensional algebraic varieties), a better understanding of Kähler structures on surfaces, and Reid's new approach to adjoint mappings. All these developments have been incorporated in the present edition, though the Donaldson and Seiberg-Witten theory only by way of examples. Of course we use the opportunity to correct some minor mistakes, which we either have discovered ourselves or which were communicated to us by careful readers to whom we are

much obliged.

Zeitschrift für Angewandte Mathematik und Mechanik. Volume 69, Number 10
Springer

The classical theory of partial differential equations is rooted in physics, where equations (are assumed to) describe the laws of nature. Laws abiding functions, which satisfy such an equation, are very rare in the space of all admissible functions (regardless of a particular topology in a function space). Moreover, some additional (like initial or boundary) conditions often insure the uniqueness of solutions. The existence of these is usually established with some a priori estimates which locate a possible solution in a given function space. We deal in this book with a completely different class of partial differential equations (and more general relations) which arise in differential geometry rather than in physics. Our equations are, for the most part, undetermined (or, at least, behave like those) and their solutions are rather dense in spaces of functions. We solve and classify solutions of these equations by means of direct (and not so direct) geometric constructions. Our exposition is

elementary and the proofs of the basic results are self-contained. However, there is a number of examples and exercises (of variable difficulty), where the treatment of a particular equation requires a certain knowledge of pertinent facts in the surrounding field. The techniques we employ, though quite general, do not cover all geometrically interesting equations. The border of the unexplored territory is marked by a number of open questions throughout the book.

Archiv for Mathematik Og

Naturvidenskab Springer Science & Business Media

This monograph intends to give a general survey of the different branches of the geometry of linear displacements which so far have received attention', The material on this new type of differential geometry has grown so rapidly in recent years that it is impossible, not only to be complete, but even to do justice to the work of the different authors, so that a selection had to be made, We hope, however, that enough territory is covered to enable the reader to understand the present state of the theory in the essential points, The author wishes to thank several

mathematicians who have helped him with remarks and suggestions; especially Dr. J.A. SCHOUTEN of Delft and Dr. N. HANSEN BALL of Princeton. Cambridge, Mass., October 1933. D.J. STRUIK.
 Contents. Page Introduction ... I. Algebra ... 5 1. Vectors and tensors in E^n 5 2. Densities ... 6 3. Measuring vectors . 7 4. Point algebra. . . 8 5. The general manifold X^n 9 6. Non-holonomic measuring vectors . 10 7. Pseudotensors ... 12 11. Affine connections ... 13 1. The principle of displacement 13 2. Affine displacement L_n 14 3. Torsion. ... 17 4. WEYL connection . 18 5. Metrical connection 19 6. Curvature. . . 19 7. Integrability 20 8. Some identities 21 9. Non-holonomic systems 22 10. Transformation groups 23 IH. Connections associated with differential equations 24 1. Paths ... 24 2. Projective transformations 25 3. THoMAs parameters ...
Numerical Mathematics Springer
 The aim of this book is to provide an introduction to the structure theory of higher dimensional algebraic varieties by studying the geometry of curves, especially rational curves, on varieties. The main applications are in the study of Fano varieties and of related varieties with

lots of rational curves on them. This *Ergebnisse* volume provides the first systematic introduction to this field of study. The book contains a large number of examples and exercises which serve to illustrate the range of the methods and also lead to many open questions of current research.

Archiv för matematik og naturvidenskab
 Springer-Verlag

Der Berliner Mathematiker Karl Weierstraß (1815-1897) lieferte grundlegende Beiträge zu den mathematischen Fachgebieten der Funktionentheorie, Algebra und Variationsrechnung. Er gilt weltweit als Begründer der mathematisch strengen Beweisführung in der Analysis. Mit seinem Namen verbunden ist zum Beispiel die berühmte Epsilon-Delta-Definition des Begriffs der Stetigkeit reeller Funktionen. Weierstraß' Vorlesungszyklus zur Analysis in Berlin wurde weithin gerühmt und er lehrte teilweise vor 250 Hörern aus ganz Europa; diese starke mathematische Schule prägt bis heute die Mathematik. Aus Anlass seines 200. Geburtstags am 31. Oktober 2015 haben internationale Experten der Mathematik und Mathematikgeschichte

diesen Festband zusammengestellt, der einen Einblick in die Bedeutung von Weierstraß' Werk bis zur heutigen Zeit gibt. Die Herausgeber des Buches sind leitende Wissenschaftler am Weierstraß-Institut für Angewandte Analysis und Stochastik in Berlin, die Autoren eminente Mathematikhistoriker.

Logik und Mathematik: Frege-Kolloquium, Jena, 1993 (Perspectives in Analytical Philosophy) de Gruyter

This English translation of the highly successful German textbook *Numerische Mathematik* covers the usual classical topics of numerical analysis, and also includes an up-to-date treatment of both splines and linear optimization methods. The text is designed to be used in a first course in numerical analysis at the upper division undergraduate level or at the beginning graduate level. It features a careful balance between mathematical rigor and numerical insight and includes many worked out numerical examples. Each section concludes with an extensive set of exercises which instructors should find useful in helping students to master the material. Moreover, the authors have also provided carefully researched

historical notes which will be of particular interest to experts as well as students. *Vorlesungen Über Geschichte Der Mathematik: Bd. Von den ältesten Zeiten bis zum Jahre 1200 n. Chr.* 3. Aufl. 1907 Palala Press

Mathematical problem posing as the substantive formulation of mathematical problems is an activity that lies at the heart of mathematics. In recent years, research in mathematics education has endeavored to gain insights into problem posing—conceptually as well as empirically. In problem-posing research, there has been a focus on analyzing products, that is, the posed problems. Insights into the processes that lead to these products, however, have so far been lacking. Within four journal articles, summarized in this cumulative dissertation, the author attempts to contribute to the understanding of problem-posing processes through conceptual considerations and empirical investigations. The conceptual part consists of a conducted systematic literature review to investigate problem-posing situations and problem-posing activities. The studies in the empirical part

deal with the analyses of problem-posing processes of pre-service mathematics teachers from a macroscopic and microscopic perspective. The aim is to develop coherent and meaningful conceptual perspectives for analyzing empirical observations of problem-posing processes.

Acta mathematica American Mathematical Soc.

Field Arithmetic explores Diophantine fields through their absolute Galois groups. This largely self-contained treatment starts with techniques from algebraic geometry, number theory, and profinite groups. Graduate students can effectively learn generalizations of finite field ideas. We use Haar measure on the absolute Galois group to replace counting arguments. New Chebotarev density variants interpret diophantine properties. Here we have the only complete treatment of Galois stratifications, used by Denef and Loeser, et al, to study Chow motives of Diophantine statements. Progress from the first edition starts by characterizing the finite-field like $P(\text{pseudo})A(lgebraically)C(losed)$ fields. We once believed PAC fields were rare. Now

we know they include valuable Galois extensions of the rationals that present its absolute Galois group through known groups. PAC fields have projective absolute Galois group. Those that are Hilbertian are characterized by this group being pro-free. These last decade results are tools for studying fields by their relation to those with projective absolute group. There are still mysterious problems to guide a new generation: Is the solvable closure of the rationals PAC; and do projective Hilbertian fields have pro-free absolute Galois group (includes Shafarevich's conjecture)?

Karl Weierstraß (1815–1897) Springer Science & Business Media

A volume containing original essays from quite diverse fields in mathematics is something of a rarity, especially if renowned scientists show the width of their discipline to the reader. This book is just such a rarity - a veritable gem. It was written to celebrate the 50th anniversary of the mathematical research institute at Oberwolfach. The articles span a range of topics from general reflections on the place of mathematics in contemporary culture to essays dealing with aspects of

algebra, analysis, geometry, coding theory, scientific computing and topology. All essays are interrelated, proving the old rule that you can divide and still conquer. A book in which every mathematician or scientist interested in mathematics will find something to take their fancy.

Die Fakultät für Mathematik und Geoinformation/The Faculty of Mathematics and Geoinformation Springer

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Archiv für mathematik og naturvidenskab Springer Spektrum

This book is based on the mini-workshop Renormalization, held in December 2006, and the conference Combinatorics and Physics, held in March 2007. Both meetings took place at the Max-Planck-Institut für Mathematik in Bonn, Germany. Research papers in the volume provide an overview of applications of combinatorics to various problems, such as applications to Hopf algebras, techniques to renormalization problems in quantum field theory, as well as combinatorial problems appearing in the context of the numerical integration of dynamical systems, in noncommutative geometry and in quantum gravity. In addition, it contains several introductory notes on renormalization Hopf algebras, Wilsonian renormalization and motives.

System Der Elementar-Mathematik John Wiley & Sons
 This standard reference on applications of invariant theory to the construction of moduli spaces is a systematic exposition of the geometric aspects of classical

theory of polynomial invariants. This new, revised edition is completely updated and enlarged with an additional chapter on the moment map by Professor Frances Kirwan. It includes a fully updated bibliography of work in this area.

Die Grundoperationen Der Mathematik Springer Science & Business Media
Theory of Linear Connections Böhlau Verlag Wien
Field Arithmetic

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