

Cie Mathematics Extended Paper 41 2013

In the more than 100 years since the fundamental group was first introduced by Henri Poincaré it has evolved to play an important role in different areas of mathematics. Originally conceived as part of algebraic topology, this essential concept and its analogies have found numerous applications in mathematics that are still being investigated today, and which are explored in this volume, the result of a meeting at Heidelberg University that brought together mathematicians who use or study fundamental groups in their work with an eye towards applications in arithmetic. The book acknowledges the varied incarnations of the fundamental group: pro-finite, l-adic, p-adic, pro-algebraic and motivic. It explores a wealth of topics that range from anabelian geometry (in particular the section conjecture), the l-adic polylogarithm, gonality questions of modular curves, vector bundles in connection with monodromy, and relative pro-algebraic completions, to a motivic version of Minhyong Kim's non-abelian Chabauty method and p-adic integration after Coleman. The editor has also included the abstracts of all the talks given at the Heidelberg meeting, as well as the notes on Coleman integration and on Grothendieck's fundamental group with a view towards anabelian geometry taken from a series of introductory lectures given by Amnon Besser and Tamás Szamuely, respectively.

Origami structures have the ability to be easily fabricated from planar forms, enable the deployment of large structures from small volumes, and are potentially reconfigurable. These characteristics have led to an increased interest in theoretical and computational origami among engineers from across the world. In this book, the principles of origami, active materials, and solid mechanics are combined to present a full theory for origami structures. The focus is on origami structures morphed via active material actuation and formed from sheets of finite thickness. The detailed theoretical derivations and examples make this an ideal book for engineers and advanced students who aim to use origami principles to develop new applications in their field.

Developed for the AQA Specification, revised for the new National Curriculum and the new GCSE specifications. The Teacher File contains detailed support and guidance on advanced planning, points of emphasis, key words, notes for non-specialist, useful supplementary ideas and homework sheets.

The two-volume set LNCS 12043 and 12044 constitutes revised selected papers from the 13th International Conference on Parallel Processing and Applied Mathematics, PPAM 2019, held in Bialystok, Poland, in September 2019. The 91 regular papers presented in these volumes were selected from 161 submissions. For regular tracks of the conference, 41 papers were selected from 89 submissions. The papers were organized in topical sections named as follows: Part I: numerical algorithms and parallel scientific computing; emerging HPC architectures; performance analysis and scheduling in HPC systems; environments and frameworks for parallel/distributed/cloud computing; applications of parallel computing; parallel non-numerical algorithms; soft computing with applications; special session on GPU computing; special session on parallel matrix factorizations. Part II: workshop on language-based parallel programming models (WLPP 2019); workshop on models algorithms and methodologies for hybrid parallelism in new HPC systems; workshop on power and energy aspects of computations (PEAC 2019); special session on tools for energy efficient computing; workshop on scheduling for parallel computing (SPC 2019); workshop on applied high performance numerical algorithms for PDEs; minisymposium on HPC applications in physical sciences; minisymposium on high performance computing interval methods; workshop on complex collective systems. Chapters "Parallel Adaptive Cross Approximation for the Multi-trace Formulation of Scattering Problems" and "A High-Order Discontinuous Galerkin Solver with Dynamic Adaptive Mesh Refinement to Simulate Cloud Formation Processes" are available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.

"Papers presented to J. E. Littlewood on his 80th birthday" issued as 3d ser., v. 14 A, 1965.

A flexible suite of resources providing full coverage of the Cambridge IGCSE® Mandarin as a Foreign Language syllabus (0547) for first examination in 2015. With a skills-based approach and an international focus, this coursebook with audio CDs promotes a deeper understanding of the Mandarin language and culture. Engaging texts, images and audio enhance the activities in the coursebook and help students develop language skills. Exam-style questions and clear learning objectives encourage self-assessment and support students through the Cambridge IGCSE® Mandarin as a Foreign Language course.

Revised edition of the IGCSE Mathematics Core and Extended Coursebook for the 0580 syllabus for examination from 2015.

This book constitutes the proceedings of the 17th Conference on Computability in Europe, CiE 2021, organized by the University of Ghent in July 2021. Due to COVID-19 pandemic the conference was held virtually. The 48 full papers presented in this volume were carefully reviewed and selected from 50 submissions. CiE promotes the development of computability-related science, ranging over mathematics, computer science and applications in various natural and engineering sciences, such as physics and biology, as well as related fields, such as philosophy and history of computing. CiE 2021 had as its motto Connecting with Computability, a clear acknowledgement of the connecting and interdisciplinary nature of the conference series which is all the more important in a time where people are more than ever disconnected from one another due to the COVID-19 pandemic.

Single-valued neutrosophic sets (SVNSs), which involve in truth-membership, indeterminacy-membership and falsity-membership, play a significant role in describing the decision-makers' preference information. In this study, a single-valued neutrosophic multi-criteria decision-making (MCDM) approach is developed based on Shapley fuzzy measures and power aggregation operator that takes a correlative relationship among criteria into account and also simultaneously reduces the effects of abnormal preference information.

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Detailed and comprehensive, the second volume of the Venns' directory, in six parts, includes all known alumni until 1900.

View the abstract.

This book constitutes extended selected papers from the 16th Conference on Advanced Information Technologies for Management, AITM 2018, and the 13th Conference on Information Systems Management, ISM 2018, held as part of the Federated Conference on Computer Science and Information Systems, FedCSIS, which took place in Poznan, Poland, in September 2018. The total of 9 full and 3 short papers presented in this volume were carefully reviewed and selected from a total of 43 submissions. The papers selected to be included in this book contribute to the understanding of relevant trends of current research on information technology for management in business and public organizations. They were organized in topical sections named: information technology and systems for knowledge management, and information technology and systems for business transformation.

This book contains methodical and fully solved step by step solutions for all variants of IGCSE Extended Mathematics 0580 Paper 4 for the year 2017. Neat and precise graphs are provided wherever required. All intermediate steps in each calculation are written out for easy understanding of the problem solutions.

"An essential overview of an important intellectual movement, Logical Empiricism in North America offers the first significant, sustained, and multidisciplinary attempt to understand the intellectual, cultural, and political dimensions of logical empiricism's transmission from Europe, subsequent development in North America, and influence on our understanding of science in the

twenty-first century."--BOOK JACKET. Title Summary field provided by Blackwell North America, Inc. All Rights Reserved

jian·Ao si ding wen ji shi you ao man yu pian jian nuo sang jue si quan dao li zhi yu qing gan ai ma man si fei er de zhuang yuan zu cheng. Zhei xie xiao shuo yi qi li xing de guang mang zhao chu le gan shang, Ge te xiao shuo de jiao rou zao zuo, shi zhi shi qu rong shen zhi di, cong er wei ying guo 19 shi ji 30 nian dai xian shi zhu yi xiao shuo gao chao de dao lai sao qing le dao lu.

A comprehensive introduction to colorimetry from a conceptual perspective. Color for the Sciences is the first book on colorimetry to offer an account that emphasizes conceptual and formal issues rather than applications. Jan Koenderink's introductory text treats colorimetry—literally, “color measurement”—as a science, freeing the topic from the usual fixation on conventional praxis and how to get the “right” result. Readers of Color for the Sciences will learn to rethink concepts from the roots in order to reach a broader, conceptual understanding. After a brief account of the history of the discipline (beginning with Isaac Newton) and a chapter titled “Colorimetry for Dummies,” the heart of the book covers the main topics in colorimetry, including the space of beams, achromatic beams, edge colors, optimum colors, color atlases, and spectra. Other chapters cover more specialized topics, including implementations, metrics pioneered by Schrödinger and Helmholtz, and extended color space. Color for the Sciences can be used as a reference for professionals or in a formal introductory course on colorimetry. It will be especially useful both for those working with color in a scientific or engineering context who find the standard texts lacking and for professionals and students in image engineering, computer graphics, and computer science. Each chapter ends with exercises, many of which are open-ended, suggesting ways to explore the topic further, and can be developed into research projects. The text and notes contain numerous suggestions for demonstration experiments and individual explorations. The book is self-contained, with formal methods explained in appendixes when necessary.

This book constitutes the refereed proceedings of the 11th Conference on Computability in Europe, CiE 2015, held in Bucharest, Romania, in June/July 2015. The 26 revised papers presented were carefully reviewed and selected from 64 submissions and included together with 10 invited papers in this proceedings. The conference CiE 2015 has six special sessions: two sessions, Representing Streams and Reverse Mathematics, were introduced for the first time in the conference series. In addition to this, new developments in areas frequently covered in the CiE conference series were addressed in the further special sessions on Automata, Logic and Infinite Games; Bio-inspired Computation; Classical Computability Theory; as well as History and Philosophy of Computing.

The purpose of this book is to provide an integrated development of modern analysis and topology through the integrating vehicle of uniform spaces. It is intended that the material be accessible to a reader of modest background. An advanced calculus course and an introductory topology course should be adequate. But it is also intended that this book be able to take the reader from that state to the frontiers of modern analysis and topology in-so-far as they can be done within the framework of uniform spaces. Modern analysis is usually developed in the setting of metric spaces although a great deal of harmonic analysis is done on topological groups and much offmctional analysis is done on various topological algebraic structures. All of these spaces are special cases of uniform spaces. Modern topology often involves spaces that are more general than uniform spaces, but the uniform spaces provide a setting general enough to investigate many of the most important ideas in modern topology, including the theories of Stone-Cech compactification, Hewitt Real-compactification and Tamano-Morita Para compactification, together with the theory of rings of continuous functions, while at the same time retaining a structure rich enough to support modern analysis.

The framework of the T-spherical fuzzy set is a recent development in fuzzy set theory that can describe imprecise events using four types of membership grades with no restrictions. The purpose of this manuscript is to point out the limitations of the existing intuitionistic fuzzy Einstein averaging and geometric operators and to develop some improved Einstein aggregation operators.

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This Cambridge IGCSE® Mathematics Core and Extended series has been authored to meet the requirements of the Cambridge IGCSE® Mathematics syllabus (0580/0980), for first examination from 2020. This second edition of Cambridge IGCSE® Mathematics Core and Extended Coursebook offers complete coverage of the Cambridge IGCSE Mathematics (0580/0980) syllabus. It contains detailed explanations and clear worked examples, followed by practice exercises to allow students to consolidate the required mathematical skills. The coursebook offers opportunities for checking prior knowledge before starting a new chapter and testing knowledge with end-of-chapter and exam-practice exercises. Core and Extended materials are presented within the same book and are clearly signposted to allow students to see the range of mathematics required for study at this level. Answers are at the back of the book.

The 8th International Conference on Unconventional Computation, UC 2009, was held in Ponta Delgada during September 7–11, 2009, and was organized - der the auspices of the European Association for Theoretical Computer Science (EATCS) by the University of Azores (Ponta Delgada, Portugal) and the Centre for Discrete Mathematics and Theoretical Computer Science (Auckland, New Zealand). The venue was the University of Azores, with its modern and well-equipped auditoria, next to the magni?cent rectory, and surrounded by a pleasant and peaceful garden. The university is located in the city of Ponta Delgada, on S~ ao Miguel Island, in the Archipelago of the Azores. Sao ~ Miguel is famous for its beautiful landscapes and exceptional volcanic lakes. Depending on the s- rounding countryside, some appear peaceful and relaxing, while others are more dramatic. Ponta Delgada has many magni?cent buildings of tremendous arc- tectural value portraying the urban architecture of the sixteenth to nineteenth centuries. The majority of these are presently used to accommodate various - litical, administrative, religious and cultural o?ces. There are several churches that are authentic works of art, with Gothic structures and Manueline exteriors. Others are in the baroque style, with interior embroideries in gold thread and rare wood pieces. Famous paintings are also easily found in Ponta Delgada. The International Conference on Unconventional Computation (UC) series is devoted to all aspects of unconventional computation — theory as well as experiments and applications. (See <https://www.cs.auckland.ac.nz/CDMTCS/conferences/uc/>).

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