Real And Abstract Analysis 3rd Printing

Designed for use in a two-semester course on abstract analysis, REAL ANALYSIS: An Introduction to the Theory of Real Functions and Integration illuminates the principle topics that constitute real analysis. Self-contained, with coverage of topology, measure theory, and integration, it offers a thorough elaboration of major theorems, notions, and constructions needed not only by mathematics students but also by students of statistics and probability, operations research, physics, and engineering. Structured logically and flexibly through the author's many years of teaching experience, the material is presented in three main sections: Part 1, chapters 1through 3, covers the preliminaries of set theory and the fundamentals of metric spaces and topology. This section can also serves as a text for first courses in topology. Part II, chapter 4 through 7, details the basics of measure and integration and stands independently for use in a separate measure theory course. Part III addresses more advanced topics, including elaborated and abstract versions of measure and integration along with their applications to functional analysis, probability theory, and conventional analysis on the real line. Analysis lies at the core of all mathematical disciplines, and as such, students need and deserve a careful, rigorous presentation of the material. REAL ANALYSIS: An Introduction to the Theory of Real Functions and Integration offers the perfect vehicle for building the foundation students need for more advanced studies.

The primary goal of this text is to present the theoretical foundation of the field of Fourier analysis. This book is mainly addressed to graduate students in mathematics and is designed to serve for a three-course sequence on the subject. The only prerequisite for understanding the text is satisfactory completion of a course in measure theory, Lebesgue integration, and complex variables. This book is intended to present the selected topics in some depth and stimulate further study. Although the emphasis falls on real variable methods in Euclidean spaces, a chapter is devoted to the fundamentals of analysis on the torus. This material is included for historical reasons, as the genesis of Fourier analysis can be found in trigonometric expansions of periodic functions in several variables. While the 1st edition was published as a single volume, the new edition will contain 120 pp of new material, with an additional chapter on time-frequency analysis and other modern topics. As a result, the book is now being published in 2 separate volumes, the first volume containing the classical topics (Lp Spaces, Littlewood-Paley Theory, Smoothness, etc...), the second volume containing the modern topics (weighted inequalities, wavelets, atomic decomposition, etc...). From a review of the first edition: “Grafakos’s book is very user-friendly with numerous examples illustrating the definitions and ideas. It is more suitable for readers who want to get a feel for current research. The treatment is thoroughly modern with free use of operators and functional analysis. Morever, unlike many authors, Grafakos has clearly spent a great deal of time preparing the exercises.” - Ken Ross, MAA Online

The Book Is Intended To Serve As A Text In Analysis By The Honours And Post-Graduate Students Of The Various Universities. Professional Or Those Preparing For Competitive Examinations Will Also Find This Book Useful.The Book Discusses The Theory From Its Very Beginning. The Foundations Have Been Laid Very Carefully And The Treatment Is Rigorous And On Modem Lines. It Opens With A Brief Outline Of The Essential Properties Of Rational Numbers And Using Dedekinds Cut, The Properties Of Real Numbers Are Established. This Foundation Supports The Subsequent Chapters: Topological Frame Work Real Sequences And Series, Continuity Differentiation, Functions Of Several Variables, Elementary And Implicit Functions, Riemann And Riemann-Stieltjes Integrals, Lebesgue Integrals, Surface, Double And Triple Integrals Are Discussed In Detail. Uniform Convergence, Power Series, Fourier Series, Improper Integrals Have Been Presented In As Simple And Lucid Manner As Possible And Fairly Large Number Solved Examples To Illustrate Various Types Have Been Introduced.As

Per Need, In The Present Set Up, A Chapter On Metric Spaces Discussing Completeness, Compactness And Connectedness Of The Spaces Has Been Added. Finally Two Appendices Discussing Beta-Gamma Functions, And Cantors Theory Of Real Numbers Add Glory To The Contents Of The Book.

Fundamentals of Mathematical Analysis explores real and functional analysis with a substantial component on topology. The three leading chapters furnish background information on the real and complex number fields, a concise introduction to set theory, and a rigorous treatment of vector spaces. Fundamentals of Mathematical Analysis is an extensive study of metric spaces, including the core topics of completeness, compactness and function spaces, with a good number of applications. The later chapters consist of an introduction to general topology, a classical treatment of Banach and Hilbert spaces, the elements of operator theory, and a deep account of measure and integration theories. Several courses can be based on the book. This book is suitable for a two-semester course on analysis, and material can be chosen to design one-semester courses on topology or real analysis. It is designed as an accessible classical introduction to the subject and aims to achieve excellent breadth and depth and contains an abundance of examples and exercises. The topics are carefully sequenced, the proofs are detailed, and the writing style is clear and concise. The only prerequisites assumed are a thorough understanding of undergraduate real analysis and linear algebra, and a degree of mathematical maturity.

This book is first of all designed as a text for the course usually called "theory of functions of a real variable". This course is at present cus tomarily offered as a first or second year graduate course in United States universities, although there are signs that this sort of analysis will soon penetrate upper division undergraduate curricula. We have included every topic that we think essential for the training of analysts, and we have also gone down a number of interesting bypaths. We hope too that the book will be useful as a reference for mature mathematicians and other scientific workers. Hence we have presented very general and complete versions of a number of important theorems and constructions. Since these sophisticated versions may be difficult for the beginner, we have given elementary avatars of all important theorems, with appro priate suggestions for skipping. We have given complete definitions, ex planations, and proofs throughout, so that the book should be usable for individual study as well as for a course text. Prerequisites for reading the book are the following. The reader is assumed to know elementary analysis as the subject is set forth, for example, in ToM M. APOSTOL's Mathematical Analysis [Addison-Wesley Publ. Co., Reading, Mass., 1957], orWALTERRUDIN's Principles of Mathe matical Analysis [2nd Ed., McGraw-Hill Book Co., New York, 1964].

The new, Third Edition of this successful text covers the basic theory of integration in a clear, well-organized manner. The authors present an imaginative and highly practical synthesis of the "Daniell method" and the measure theoretic approach. It is the ideal text for undergraduate and first-year graduate courses in real analysis. This edition offers a new chapter on Hilbert Spaces and integrates over 150 new exercises. New and varied examples are included for each chapter. Students will be challenged by the more than 600 exercises. Topics are treated rigorously, illustrated by examples, and offer a clear connection between real and functional analysis. This text can be used in combination with the authors' Problems in Real Analysis, 2nd Edition, also published by Academic Press, which offers complete solutions to all exercises in the Principles text. Key Features: * Gives a unique presentation of integration theory * Over 150 new exercises integrated throughout the text * Presents a new chapter on Hilbert Spaces * Provides a rigorous introduction to measure theory * Illustrated with new and varied examples in each chapter * Introduces topological ideas in a friendly manner * Offers a clear connection between real analysis and functional analysis * Includes brief biographies of mathematicians "All in all, this is a beautiful selection and a masterfully balanced presentation of the fundamentals of contemporary measure and integration theory which can be grasped easily by the student." --J. Lorenz in Zentralblatt für Mathematik "...a clear and precise treatment of the subject. There are many exercises of varying degrees of difficulty. I highly recommend this book for classroom use." --CASPAR GOFFMAN, Department of Mathematics, Purdue University

????:Real and abstract analysis

A functional calculus is a construction which associates with an operator or a family of operators a homomorphism from a function space into a subspace of continuous linear operators, i.e. a method for defining OC functions of an operatorOCO. Perhaps the most familiar example is based on the spectral theorem for bounded self-adjoint operators on a complex Hilbert space.This book contains an exposition of several such functional calculi. In particular, there is an exposition based on the spectral theorem for bounded, self-adjoint operators, an extension to the case of several commuting self-adjoint operators and an extension to normal operators. The Riesz operational calculus based on the Cauchy integral theorem from complex analysis is also described. Finally, an exposition of a functional calculus due to H. Weyl is given.

Discovered at the turn of the 20th century, p-adic numbers are frequently used by mathematicians and physicists. This text is a self-contained presentation of basic p-adic analysis with a focus on analytic topics. It offers many features rarely treated in introductory p-adic texts such as topological models of p-adic spaces inside Euclidian space, a special case of Hazewinkel's functional equation lemma, and a treatment of analytic elements.

Now in its fourth edition, the first part of this book is devoted to the basic material of complex analysis, while the second covers many special topics, such as the Riemann Mapping Theorem, the gamma function, and analytic continuation. Power series methods are used more systematically than is found in other texts, and the resulting proofs often shed more light on the results than the standard proofs. While the first part is suitable for an introductory course at undergraduate level, the additional topics covered in the second part give the instructor of a gradute course a great deal of flexibility in structuring a more advanced course.

This book, first published in 2005, introduces measure and integration theory as it is needed in many parts of analysis and probability.

Real and Abstract AnalysisA modern treatment of the theory of functions of a real variableSpringer

This text covers many principal topics in the theory of functions of a complex variable. These include, in real analysis, set algebra, measure and topology, real- and complex-valued functions, and topological vector spaces. In complex analysis, they include polynomials and power series, functions holomorphic in a region, entire functions, analytic continuation, singularities, harmonic functions, families of functions, and convexity theorems.

This book is an introductory text in functional analysis. Unlike many modern treatments, it begins with the particular and works its way to the more general. From the reviews: "This book is an excellent text for a first graduate course in functional analysis....Many interesting and important applications are included....It includes an abundance of exercises, and is written in the engaging and lucid style which we have come to expect from the author." --MATHEMATICAL REVIEWS

We learn by doing. We learn mathematics by doing problems. This is the third volume

of Problems in Mathematical Analysis. The topic here is integration for real functions of one real variable. The first chapter is devoted to the Riemann and the Riemann-Stieltjes integrals. Chapter 2 deals with Lebesgue measure and integration. The authors include some famous, and some not so famous, integral inequalities related to Riemann integration. Many of the problems for Lebesgue integration concern convergence theorems and the interchange of limits and integrals. The book closes with a section on Fourier series, with a concentration on Fourier coefficients of functions from particular classes and on basic theorems for convergence of Fourier series. The book is primarily geared toward students in analysis, as a study aid, for problem-solving seminars, or for tutorials. It is also an excellent resource for instructors who wish to incorporate problems into their lectures. Solutions for the problems are provided in the book.
This book links two subjects: algebraic geometry and coding theory. It uses a novel approach based on the theory of algebraic function fields. Coverage includes the Riemann-Rock theorem, zeta functions and Hasse-Weil's theorem as well as Goppa' s algebraic-geometric codes and other traditional codes. It will be useful to researchers in algebraic geometry and coding theory and computer scientists and engineers in information transmission.
This book is first of all designed as a text for the course usually called "theory of functions of a real variable". This course is at present cus tomarily offered as a first or second year graduate course in United States universities, although there are signs that this sort of analysis will soon penetrate upper division undergraduate curricula. We have included every topic that we think essential for the training of analysts, and we have also gone down a number of interesting bypaths. We hope too that the book will be useful as a reference for mature mathematicians and other scientific workers. Hence we have presented very general and complete versions of a number of important theorems and constructions. Since these sophisticated versions may be difficult for the beginner, we have given elementary avatars of all important theorems, with appro priate suggestions for skipping. We have given complete definitions, ex planations, and proofs throughout, so that the book should be usable for individual study as well as for a course text. Prerequisites for reading the book are the following. The reader is assumed to know elementary analysis as the subject is set forth, for example, in TOM M. ApOSTOL'S Mathematical Analysis [Addison-Wesley Publ. Co., Reading, Mass., 1957], or WALTER RUDIN'S Principles of M athe nd matical Analysis [2 Ed., McGraw-Hill Book Co., New York, 1964].
Providing an introduction to mathematical analysis as it applies to economic theory and econometrics, this book bridges the gap that has separated the teaching of basic mathematics for economics and the increasingly advanced mathematics demanded in economics research today. Dean Corbae, Maxwell B. Stinchcombe, and Juraj Zeman equip students with the knowledge of real and functional analysis and measure theory they need to read and do research in economic and econometric theory. Unlike other mathematics textbooks for economics, An Introduction to Mathematical Analysis for Economic Theory and

Econometrics takes a unified approach to understanding basic and advanced spaces through the application of the Metric Completion Theorem. This is the concept by which, for example, the real numbers complete the rational numbers and measure spaces complete fields of measurable sets. Another of the book's unique features is its concentration on the mathematical foundations of econometrics. To illustrate difficult concepts, the authors use simple examples drawn from economic theory and econometrics. Accessible and rigorous, the book is self-contained, providing proofs of theorems and assuming only an undergraduate background in calculus and linear algebra. Begins with mathematical analysis and economic examples accessible to advanced undergraduates in order to build intuition for more complex analysis used by graduate students and researchers Takes a unified approach to understanding basic and advanced spaces of numbers through application of the Metric Completion Theorem Focuses on examples from econometrics to explain topics in measure theory

An introduction into numerical analysis for students in mathematics, physics, and engineering. Instead of attempting to exhaustively cover everything, the goal is to guide readers towards the basic ideas and general principles by way of the main and important numerical methods. The book includes the necessary basic functional analytic tools for the solid mathematical foundation of numerical analysis -- indispensable for any deeper study and understanding of numerical methods, in particular, for differential equations and integral equations. The text is presented in a concise and easily understandable fashion so as to be successfully mastered in a one-year course.

This well-written book contains the analytical tools, concepts, and viewpoints needed for modern applied mathematics. It treats various practical methods for solving problems such as differential equations, boundary value problems, and integral equations. Pragmatic approaches to difficult equations are presented, including the Galerkin method, the method of iteration, Newton’s method, projection techniques, and homotopy methods.

The great response to the publication of the book Classical and Modern Fourier Analysishasbeenverygratifying.IamdelightedthatSpringerhasofferedtopublish the second edition of this book in two volumes: Classical Fourier Analysis, 2nd Edition, and Modern Fourier Analysis, 2nd Edition. These volumes are mainly addressed to graduate students who wish to study Fourier analysis. This second volume is intended to serve as a text for a seco- semester course in the subject. It is designed to be a continuation of the rst v- ume. Chapters 1–5 in the rst volume contain Lebesgue spaces, Lorentz spaces and interpolation, maximal functions, Fourier transforms and distributions, an introd- tion to Fourier analysis on the n-torus, singular integrals of convolution type, and Littlewood–Paley theory. Armed with the knowledgeof this material, in this volume,the reader encounters more advanced topics in Fourier analysis whose development has led to important theorems. These theorems are proved in great detail and their proofs are organized to present the ow of ideas. The exercises at the end of each section enrich the material of the corresponding section and provide an opportunity to develop ad- tional intuition and deeper comprehension. The historical notes in each chapter are intended to provide an account of past research but also to suggest directions for further investigation. The auxiliary results referred to the appendix can be located in the rst volume.

Recently there has been considerable interest in developing techniques based on number theory to attack problems of 3-manifolds; Contains many examples and lots of problems; Brings together much of the existing literature of Kleinian groups in a clear and concise way; At present no such text exists

The present English edition is not a mere translation of the German original. Many new problems have been added and there are also other changes, mostly minor. Yet all the alterations amount to less than ten percent of the text. We intended to keep intact the general plan and the original flavor of the work. Thus we have not introduced any essentially new subject matter, although the mathematical fashion has greatly changed since 1924. We have restricted ourselves to supplementing the topics originally chosen. Some of our problems first published in this work have given rise to extensive research. To include all such developments would have changed the character of the work, and even an incomplete account, which would be unsatisfactory in itself, would have cost too much labor and taken up too much space. We have to thank many readers who, since the publication of this work almost fifty years ago, communicated to us various remarks on it, some of which have been incorporated into this edition. We have not listed their names; we have forgotten the origin of some contributions, and an incomplete list would have been even less desirable than no list. The first volume has been translated by Mrs. Dorothee Aeppli, the second volume by Professor Claude Billigheimer. We wish to express our warmest thanks to both for the unselfish devotion and scrupulous conscientiousness with which they attacked their far from easy task.

Combinatorial enumeration is a readily accessible subject full of easily stated, but sometimes tantalizingly difficult problems. This book leads the reader in a leisurely way from basic notions of combinatorial enumeration to a variety of topics, ranging from algebra to statistical physics. The book is organized in three parts: Basics, Methods, and Topics. The aim is to introduce readers to a fascinating field, and to offer a sophisticated source of information for professional mathematicians desiring to learn more. There are 666 exercises, and every chapter ends with a highlight section, discussing in detail a particularly beautiful or famous result.

Designed for students having no previous experience with rigorous proofs, this text can be used immediately after standard calculus courses. It is highly recommended for anyone planning to study advanced analysis, as well as for future secondary school teachers. A limited number of concepts involving the real line and functions on the real line are studied, while many abstract ideas, such as metric spaces and ordered systems, are avoided completely. A thorough treatment of sequences of numbers is used as a basis for studying standard calculus topics, and optional sections invite students to study such topics as metric spaces and Riemann-Stieltjes integrals.

"This book is very well organized and clearly written and contains an adequate supply of exercises. If one is comfortable with the choice of topics in the book, it would be a good candidate for a text in a graduate real analysis course." -- MATHEMATICAL REVIEWS

A clear and succinct presentation of the essentials of this subject, together with some of its applications and a generous helping of interesting exercises. Following an introductory chapter with a taste of what is to come, the next three chapters constitute a course in nonsmooth analysis and identify a coherent and comprehensive approach to the subject, leading to an efficient, natural, and powerful body of theory. The whole is rounded off with a self-contained introduction to the theory of control of ordinary differential equations. The authors have incorporated a number of new results which clarify the relationships between the different schools of thought in the subject, with the aim of making nonsmooth analysis accessible to a wider audience. End-of-chapter problems offer scope for deeper understanding.

Combines analysis and tools from probability, harmonic analysis, operator theory, and engineering (signal/image processing) Interdisciplinary focus with hands-on approach, generous motivation and new pedagogical techniques Numerous exercises reinforce fundamental concepts and hone computational skills Separate sections explain engineering terms to mathematicians and operator theory to engineers Fills a gap in the literature

A brand new appendix by Oscar Garcia-Prada graces this third edition of a classic work. In developing the tools necessary for the study of complex manifolds, this comprehensive, well-organized treatment presents in its opening chapters a detailed survey of recent progress in four areas: geometry (manifolds with vector bundles), algebraic topology, differential geometry, and partial differential equations. Wells's superb analysis also gives details of the Hodge-Riemann bilinear relations on Kahler manifolds, Griffiths's period mapping, quadratic transformations, and Kodaira's vanishing and embedding theorems. Oscar Garcia-Prada's appendix gives an overview of the developments in the field during the decades since the book appeared.

This is part one of a two-volume book on real analysis and is intended for senior undergraduate students of mathematics who have already been exposed to calculus. The emphasis is on rigour and foundations of analysis. Beginning with the construction of the number systems and set theory, the book discusses the basics of analysis (limits, series, continuity, differentiation, Riemann integration), through to power series, several variable calculus and Fourier analysis, and then finally the Lebesgue integral. These are almost entirely set in the concrete setting of the real line and Euclidean spaces, although there is some material on abstract metric and topological spaces. The book also has appendices on mathematical logic and the decimal system. The entire text (omitting some less central topics) can be taught in two quarters of 25–30 lectures each. The course material is deeply intertwined with the exercises, as it is intended that the student actively learn the material (and practice thinking and writing rigorously) by proving several of the key results in the theory.

Organizing the basic material of complex analysis in a unique manner, the authors of this versatile book aim is to present a precise and concise treatment of those parts of complex analysis that should be familiar to every research mathematician.

This book presents the fundamental function spaces and their duals, explores operator theory and finally develops the theory of distributions up to significant applications such as Sobolev spaces and Dirichlet problems. Includes an assortment of well formulated exercises, with answers and hints collected at the end of the book.

The first edition of this work has become the standard introduction to the theory of p-adic numbers at both the advanced undergraduate and beginning graduate

level. This second edition includes a deeper treatment of p-adic functions in Ch. 4 to include the Iwasawa logarithm and the p-adic gamma-function, the rearrangement and addition of some exercises, the inclusion of an extensive appendix of answers and hints to the exercises, as well as numerous clarifications.
A modern approach to number theory through a blending of complementary algebraic and analytic perspectives, emphasising harmonic analysis on topological groups. The main goal is to cover John Tates visionary thesis, giving virtually all of the necessary analytic details and topological preliminaries -- technical prerequisites that are often foreign to the typical, more algebraically inclined number theorist. While most of the existing treatments of Tates thesis are somewhat terse and less than complete, the intent here is to be more leisurely, more comprehensive, and more comprehensible. While the choice of objects and methods is naturally guided by specific mathematical goals, the approach is by no means narrow. In fact, the subject matter at hand is germane not only to budding number theorists, but also to students of harmonic analysis or the representation theory of Lie groups. The text addresses students who have taken a year of graduate-level course in algebra, analysis, and topology. Moreover, the work will act as a good reference for working mathematicians interested in any of these fields.
The book targets undergraduate and postgraduate mathematics students and helps them develop a deep understanding of mathematical analysis. Designed as a first course in real analysis, it helps students learn how abstract mathematical analysis solves mathematical problems that relate to the real world. As well as providing a valuable source of inspiration for contemporary research in mathematics, the book helps students read, understand and construct mathematical proofs, develop their problem-solving abilities and comprehend the importance and frontiers of computer facilities and much more. It offers comprehensive material for both seminars and independent study for readers with a basic knowledge of calculus and linear algebra. The first nine chapters followed by the appendix on the Stieltjes integral are recommended for graduate students studying probability and statistics, while the first eight chapters followed by the appendix on dynamical systems will be of use to students of biology and environmental sciences. Chapter 10 and the appendixes are of interest to those pursuing further studies at specialized advanced levels. Exercises at the end of each section, as well as commentaries at the end of each chapter, further aid readers’ understanding. The ultimate goal of the book is to raise awareness of the fine architecture of analysis and its relationship with the other fields of mathematics.
A carefully prepared account of the basic ideas in Fourier analysis and its applications to the study of partial differential equations. The author succeeds to make his exposition accessible to readers with a limited background, for example, those not acquainted with the Lebesgue integral. Readers should be

familiar with calculus, linear algebra, and complex numbers. At the same time, the author has managed to include discussions of more advanced topics such as the Gibbs phenomenon, distributions, Sturm-Liouville theory, Cesaro summability and multi-dimensional Fourier analysis, topics which one usually does not find in books at this level. A variety of worked examples and exercises will help the readers to apply their newly acquired knowledge.

Based on an honors course taught by the author at UC Berkeley, this introduction to undergraduate real analysis gives a different emphasis by stressing the importance of pictures and hard problems. Topics include: a natural construction of the real numbers, four-dimensional visualization, basic point-set topology, function spaces, multivariable calculus via differential forms (leading to a simple proof of the Brouwer Fixed Point Theorem), and a pictorial treatment of Lebesgue theory. Over 150 detailed illustrations elucidate abstract concepts and salient points in proofs. The exposition is informal and relaxed, with many helpful asides, examples, some jokes, and occasional comments from mathematicians, such as Littlewood, Dieudonné, and Osserman. This book thus succeeds in being more comprehensive, more comprehensible, and more enjoyable, than standard introductions to analysis. New to the second edition of Real Mathematical Analysis is a presentation of Lebesgue integration done almost entirely using the undergraph approach of Burkill. Payoffs include: concise picture proofs of the Monotone and Dominated Convergence Theorems, a one-line/one-picture proof of Fubini's theorem from Cavalieri's Principle, and, in many cases, the ability to see an integral result from measure theory. The presentation includes Vitali's Covering Lemma, density points — which are rarely treated in books at this level — and the almost everywhere differentiability of monotone functions. Several new exercises now join a collection of over 500 exercises that pose interesting challenges and introduce special topics to the student keen on mastering this beautiful subject.

Capturing the state of the art of the interplay between positivity, noncommutative analysis, and related areas including partial differential equations, harmonic analysis, and operator theory, this volume was initiated on the occasion of the Delft conference in honour of Ben de Pagter's 65th birthday. It will be of interest to researchers in positivity, noncommutative analysis, and related fields. Contributions by Shavkat Ayupov, Amine Ben Amor, Karim Boulabiar, Qingying Bu, Gerard Buskes, Martijn Caspers, Jurie Conradie, Garth Dales, Marcel de Jeu, Peter Dodds, Theresa Dodds, Julio Flores, Jochen Glück, Jacobus Grobler, Wolter Groenevelt, Markus Haase, Klaas Pieter Hart, Francisco Hernández, Jamel Jaber, Rien Kaashoek, Turabay Kalandarov, Anke Kalauch, Arkady Kitover, Erik Koelink, Karimbergen Kudaybergenov, Louis Labuschagne, Yongjin Li, Nick Lindemulder, Emiel Lorist, Qi Lü, Miek Messerschmidt, Susumu Okada, Mehmet Orhon, Denis Potapov, Werner Ricker, Stephan Roberts, Pablo Román, Anton Schep, Claud Steyn, Fedor Sukochev, James Sweeney, Guido Sweers, Pedro Tradacete, Jan Harm van der Walt, Onno van Gaans, Jan van Neerven, Arnoud van Rooij, Freek van Schagen, Dominic Vella, Mark Veraar, Anthony Wickstead, Marten Wortel, Ivan Yaroslavtsev, and Dmitriy Zanin.