[PDF] Automorphic Representations L Functions And Applications Stephen Rallis

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Automorphic Representations, L-Functions and Applications: Progress and Prospects-James W. Cogdell 2011-06-24 This volume is the proceedings of the conference on Automorphic Representations, L-functions and Applications: Progress and Prospects, held at the Department of Mathematics of The Ohio State University, March 27–30, 2003, in honor of the 60th birthday of Steve Rallis. The theory of automorphic representations, automorphic L-functions and their applications to arithmetic continues to be an area of vigorous and fruitful research. The contributed papers in this volume represent many of the most recent developments and directions, including Rankin–Selberg L-functions (Bump, Ginzburg–Jiang–Rallis, Lapid–Rallis) the relative trace formula (Jacquet, Mao–Rallis) automorphic representations (Gan–Gurevich, Ginzburg–Rallis–Soudry) representation theory of p-adic groups (Baruch, Kudla–Rallis, Mœglin, Cogdell–Piatetski-Shapiro–Shahidi) p-adic methods (Harris–Li–Skinner, Vigneras), and arithmetic applications (Chinta–Friedberg–Hoffstein). The survey articles by Bump, on the Rankin–Selberg method, and by Jacquet, on the relative trace formula, should be particularly useful as an introduction to the key ideas about these important topics. This volume should be of interest both to researchers and students in the area of automorphic representations, as well as to mathematicians in other areas interested in having an overview of current developments in this important field.

Lectures on Automorphic L-functions-James W. Cogdell James W. Cogdell, Lectures on L-functions, converse theorems, and functoriality for GL_n: Preface Modular forms and their L-functions Automorphic forms Automorphic representations Fourier expansions and multiplicity one theorems Eulerian integral representations Local L-functions: The non-Archimedean case The unramified calculation Local L-functions: The Archimedean case Global L-functions Converse theorems Functoriality Functoriality for the classical groups Functoriality for the classical groups, II Henry H. Kim, Automorphic L-functions: Introduction Chevalley groups and their properties Cuspidal representations L-groups and automorphic L-functions Induced representations Eisenstein series and constant terms L-functions in the constant terms Meromorphic continuation of L-functions Generic representations and their Whittaker models Local coefficients and non-constant terms Local Langlands correspondence Local L-functions and functional equations Normalization of intertwining operators Holomorphy and bounded in vertical strips Langlands functoriality conjecture Converse theorem of Cogdell and Piatetski-Shapiro Functoriality of the symmetric cube Functoriality of the symmetric fourth Bibliography M. Ram Murty, Applications of symmetric power L-functions: Preface The Sato-Tate conjecture Maass wave forms The Rankin-Selberg method Oscillations of Fourier coefficients of cusp forms Poincare

series Kloosterman sums and Selberg's conjecture Refined estimates for Fourier coefficients of cusp forms Twisting and averaging of L-series The Kim-Sarnak theorem Introduction to Artin L-functions Zeros and poles of Artin L-functions The Langlands-Tunnell theorem Bibliography

Automorphic Representations, L-functions And Appli-Anonimo 2005-01-31 "This volume should be of interest both to researchers and students in the area of automorphic representations, as well as to mathematicians in other areas interested in having an overview of current developments in this important field." L'Enseignement Mathematique 3-4/2005

Automorphic Forms, Representations and L-Functions-Armand Borel 1979-06-30 Part 2 contains sections on Automorphic representations and L-functions, Arithmetical algebraic geometry and L-functions

Automorphic Representations and L-Functions for the General Linear Group-Dorian Goldfeld 2011 This modern, graduate-level textbook does not assume prior knowledge of representation theory. Includes numerous concrete examples and exercises.

Automorphic Representations and L-Functions for the General Linear Group:-Dorian Goldfeld 2011-04-21 This graduate-level textbook provides an elementary exposition of the theory of automorphic representations and L-functions for the general linear group in an adelic setting. Definitions are kept to a minimum and repeated when reintroduced so that the book is accessible from any entry point, and with no prior knowledge of representation theory. The book includes concrete examples of global and local representations of GL(n), and presents their associated L-functions. In Volume 1, the theory is developed from first principles for GL(1), then carefully extended to GL(2) with complete detailed proofs of key theorems. Several proofs are presented for the first time, including Jacquet's simple and elegant proof of the tensor product theorem. In Volume 2, the higher rank situation of GL(n) is given a detailed treatment. Containing numerous exercises by Xander Faber, this book will motivate students and researchers to begin working in this fertile field of research.

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Automorphic Forms and Representations-Daniel Bump 1998-11-28 This book takes advanced graduate students from the foundations to topics on the research frontier.

Automorphic Representations and L-functions for the General Linear Group-D. Goldfeld 2011 This modern, graduate-level textbook does not assume prior knowledge of representation theory. Includes numerous concrete examples and over 250 exercises.

Explicit Constructions of Automorphic L-Functions-Stephen Gelbart 2006-11-15 The goal of this research monograph is to derive the analytic continuation and functional equation of the L-functions attached by R.P. Langlands to automorphic representations of reductive algebraic groups. The first part of the book (by Piatetski-Shapiro and Rallis) deals with L-functions for the simple classical groups; the second part (by Gelbart and Piatetski-Shapiro) deals with non-simple groups of the form G GL(n), with G a quasi-split reductive group of split rank n. The method of proof is to construct certain explicit zeta-integrals of Rankin-Selberg type which interpolate the relevant Langlands L-functions and can be analyzed via the theory of Eisenstein series and intertwining operators. This is the first time such an approach has been applied to such general classes of groups. The flavor of the local theory is decidedly representation theoretic, and the work should be of interest to researchers in group representation theory as well as number theory.

Automorphic Forms and L-Functions for the Group GL(n,R)-Dorian Goldfeld 2006-08-03 L-functions associated to automorphic forms encode all classical number theoretic information. They are akin to elementary particles in physics. This 2006 book provides an entirely self-contained introduction to the theory of L-functions in a style accessible to graduate students with a basic knowledge of classical analysis, complex variable theory, and algebra. Also within the volume are many new results not yet found in the literature. The exposition provides complete detailed proofs of results in an easy-to-

read format using many examples and without the need to know and remember many complex definitions. The main themes of the book are first worked out for GL(2,R) and GL(3,R), and then for the general case of GL(n,R). In an appendix to the book, a set of Mathematica functions is presented, designed to allow the reader to explore the theory from a computational point of view.

Lectures on Automorphic L-functions-James W. Cogdell 2009 This book provides a comprehensive account of the crucial role automorphic L-functions play in number theory and in the Langlands program, especially the Langlands functoriality conjecture. There has been a recent major development in the Langlands functoriality conjecture by the use of automorphic L-functions, namely, by combining converse theorems of Cogdell and Piatetski-Shapiro with the Langlands-Shahidi method. This book provides a step-by-step introduction to these developments and explains how the Langlands functoriality conjecture implies solutions to several outstanding conjectures in number theory, such as the Ramanujan conjecture, Sato-Tate conjecture, and Artin's conjecture. It would be ideal for an introductory course in the Langlands program. Titles in this series are co-published with The Fields Institute for Research in Mathematical Sciences (Toronto, Ontario, Canada). Table of Contents: James W.Cogdell, Lectures on L-functions, converse theorems, and functoriality for GL_n: Preface; Modular forms and their L-functions; Automorphic forms; Automorphic representations; Fourier expansions and multiplicity one theorems; Eulerian integral representations; Local L-functions: The non-Archimedean case; The unramified calculation; Local L-functions: The Archimedean case; Global L-functions; Converse theorems; Functoriality; Functoriality for the classical groups; Functoriality for the classical groups, II. Henry H.Kim, Automorphic L-functions: Introduction; Chevalley groups and their properties; Cuspidal representations; L-groups and automorphic L-functions; Induced representations; Eisenstein series and constant terms; L-functions in the constant terms; Meromorphic continuation of L-functions; Generic representations and their Whittaker models; Local coefficients and non-constant terms; Local Langlands correspondence; Local L-functions and functional equations; Normalization of intertwining operators; Holomorphy and bounded in vertical strips; Langlands functoriality conjecture; Converse theorem of Cogdell and Piatetski-Shapiro; Functoriality of the symmetric cube; Functoriality of the symmetric fourth; Bibliography. M.Ram Murty, Applications of symmetric power L-

functions: Preface; The Sato-Tate conjecture; Maass wave forms; The Rankin-Selberg method; Oscillations of Fourier coefficients of cusp forms; Poincare series; Kloosterman sums and Selberg's conjecture; Refined estimates for Fourier coefficients of cusp forms; Twisting and averaging of L-series; The Kim-Sarnak theorem; Introduction to Artin L-functions; Zeros and poles of Artin L-functions; The Langlands-Tunnell theorem; Bibliography. This is a reprint of the 2004 original. (FIM/20.S)

Analytic Properties of Automorphic L-Functions-Stephen Gelbart 2014-07-14 Analytic Properties of Automorphic L-Functions is a three-chapter text that covers considerable research works on the automorphic L-functions attached by Langlands to reductive algebraic groups. Chapter I focuses on the analysis of Jacquet-Langlands methods and the Einstein series and Langlands' so-called "Euler products . This chapter explains how local and global zeta-integrals are used to prove the analytic continuation and functional equations of the automorphic L-functions attached to GL(2). Chapter II deals with the developments and refinements of the zeta-inetgrals for GL(n). Chapter III describes the results for the L-functions L (s, ?, r), which are considered in the constant terms of Einstein series for some quasisplit reductive group. This book will be of value to undergraduate and graduate mathematics students.

Automorphic Forms on GL (3,TR)-D. Bump 2006-12-08

L-Functions and the Oscillator Representation-Stephen Rallis 2006-11-15 These notes are concerned with showing the relation between L-functions of classical groups (*F1 in particular) and *F2 functions arising from the oscillator representation of the dual reductive pair *F1 *F3 O(Q). The problem of measuring the nonvanishing of a *F2 correspondence by computing the Petersson inner product of a *F2 lift from *F1 to O(Q) is considered. This product can be expressed as the special value of an L-function (associated to the standard representation of the L-group of *F1) times a finite number of local Euler factors (measuring whether a given local representation occurs in a given oscillator representation). The key ideas used in proving this are (i) new Rankin integral representations of standard L-functions, (ii) see-saw dual reductive pairs and (iii) Siegel-Weil formula. The book addresses readers who specialize in the theory of automorphic forms and L-functions and the representation theory of Lie groups. N

Automorphic Forms, Automorphic Representations, and Arithmetic-Robert S. Doran 1999

L-Functions and Automorphic Forms-Jan Hendrik Bruinier 2018-02-22 This book presents a collection of carefully refereed research articles and lecture notes stemming from the Conference "Automorphic Forms and L-Functions", held at the University of Heidelberg in 2016. The theory of automorphic forms and their associated L-functions is one of the central research areas in modern number theory, linking number theory, arithmetic geometry, representation theory, and complex analysis in many profound ways. The 19 papers cover a wide range of topics within the scope of the conference, including automorphic L-functions and their special values, p-adic modular forms, Eisenstein series, Borcherds products, automorphic periods, and many more.

Multiple Dirichlet Series, L-functions and Automorphic Forms-Daniel Bump 2012-07-09 Multiple Dirichlet Series, L-functions and Automorphic Forms gives the latest advances in the rapidly developing subject of Multiple Dirichlet Series, an area with origins in the theory of automorphic forms that exhibits surprising and deep connections to crystal graphs and mathematical physics. As such, it represents a new way in which areas including number theory, combinatorics, statistical mechanics, and quantum groups are seen to fit together. The volume also includes papers on automorphic forms and L-functions and related number-theoretic topics. This volume will be a valuable resource for graduate students and researchers in number theory, combinatorics, representation theory, mathematical physics, and special functions. Contributors: J. Beineke, B. Brubaker, D. Bump, G. Chinta, G. Cornelissen, C.A. Diaconu, S. Frechette, S. Friedberg, P. Garrett, D. Goldfeld, P.E. Gunnells, B. Heim, J. Hundley, D. Ivanov, Y. Komori, A.V. Kontorovich, O. Lorscheid, K. Matsumoto, P.J. McNamara, S.J. Patterson, M. Suzuki, H. Tsumura.

Advanced Analytic Number Theory: L-Functions-Carlos J. Moreno 2005 Since the pioneering work of Euler, Dirichlet, and Riemann, the analytic properties of L-functions have been used to study the distribution of prime numbers. With the advent of the Langlands Program, L-functions have assumed a greater role in the study of the interplay between Diophantine questions about primes and representation theoretic properties of Galois representations. The present book provides a complete introduction to the most significant class of L-functions: the Artin-Hecke L-functions associated to finite-dimensional representations of Weil groups and to automorphic L-functions of principal type on the general linear group. In addition to establishing functional equations, growth estimates, and non-vanishing theorems, a thorough presentation of the explicit formulas of Riemann type in the context of Artin-Hecke and automorphic L-functions is also given. The survey is aimed at mathematicians and graduate students who want to learn about the modern analytic theory of L-functions and their applications in number theory and in the theory of automorphic representations. The requirements for a profitable study of this monograph are a knowledge of basic number theory and the rudiments of abstract harmonic analysis on locally compact abelian groups.

Automorphic Forms, Representations and L-Functions-Symposium in Pure Mathematics 1979 Part 1 contains sections on Reductive groups, representations, Automorphic forms and representations)

Automorphic Forms and Galois Representations-Fred Diamond 2014-10-16 Part one of a two-volume collection exploring recent developments in number theory related to automorphic forms and Galois representations.

Eisenstein Series and Automorphic Representations-Philipp Fleig 2018-06-30 Detailed exposition of automorphic representations and their relation to string theory, for mathematicians and theoretical physicists.

An Introduction to the Langlands Program-Joseph Bernstein 2013-12-11 This book presents a broad, user-friendly introduction to the Langlands program, that is, the theory of automorphic forms and its connection with the theory of L-functions and other fields of mathematics. Each of the twelve chapters focuses on a particular topic devoted to special cases of the program. The book is suitable for graduate students and researchers.

Automorphic Forms and Representations-Daniel Bump 1997 This book takes advanced graduate students from the foundations to topics on the research frontier.

Contributions to Automorphic Forms, Geometry, and Number Theory-Haruzo Hida 2004-03-11 In Contributions to Automorphic Forms, Geometry, and Number Theory, Haruzo Hida, Dinakar Ramakrishnan, and Freydoon Shahidi bring together a distinguished group of experts to explore automorphic forms, principally via the associated L-functions, representation theory, and geometry. Because these themes are at the cutting edge of a central area of modern mathematics, and are related to the philosophical base of Wiles' proof of Fermat's last theorem, this book will be of interest to working mathematicians and students alike. Never previously published, the contributions to this volume expose the reader to a host of difficult and thought-provoking problems. Each of the extraordinary and noteworthy mathematicians in this volume makes a

unique contribution to a field that is currently seeing explosive growth. New and powerful results are being proved, radically and continually changing the field's make up. Contributions to Automorphic Forms, Geometry, and Number Theory will likely lead to vital interaction among researchers and also help prepare students and other young mathematicians to enter this exciting area of pure mathematics. Contributors: Jeffrey Adams, Jeffrey D. Adler, James Arthur, Don Blasius, Siegfried Boecherer, Daniel Bump, William Casselmann, Laurent Clozel, James Cogdell, Laurence Corwin, Solomon Friedberg, Masaaki Furusawa, Benedict Gross, Thomas Hales, Joseph Harris, Michael Harris, Jeffrey Hoffstein, Hervé Jacquet, Dihua Jiang, Nicholas Katz, Henry Kim, Victor Kreiman, Stephen Kudla, Philip Kutzko, V. Lakshmibai, Robert Langlands, Erez Lapid, Ilya Piatetski-Shapiro, Dipendra Prasad, Stephen Rallis, Dinakar Ramakrishnan, Paul Sally, Freydoon Shahidi, Peter Sarnak, Rainer Schulze-Pillot, Joseph Shalika, David Soudry, Ramin Takloo-Bigash, Yuri Tschinkel, Emmanuel Ullmo, Marie-France Vignéras, Jean-Loup Waldspurger.

Representation Theory and Automorphic Forms-Toshiyuki Kobayashi 2007-10-10 This volume uses a unified approach to representation theory and automorphic forms. It collects papers, written by leading mathematicians, that track recent progress in the expanding fields of representation theory and automorphic forms and their association with number theory and differential geometry. Topics include: Automorphic forms and distributions, modular forms, visible-actions, Dirac cohomology, holomorphic forms, harmonic analysis, self-dual representations, and Langlands Functoriality Conjecture, Both graduate students and researchers will find inspiration in this volume.

Eisenstein Series and Automorphic Representations-Philipp Fleig 2018-07-05 This introduction to automorphic forms on adelic groups G(A) emphasises the role of representation theory. The exposition is driven by examples, and collects and extends many results scattered throughout the literature, in particular the Langlands constant term formula for Eisenstein series on G(A) as well as the Casselman–Shalika formula for the p-adic spherical Whittaker function. This book also covers more advanced topics such as spherical Hecke algebras and automorphic L-functions. Many of these mathematical results have natural interpretations in string theory, and so some basic concepts of string theory are introduced with an emphasis on connections with automorphic forms. Throughout the book special attention is paid to small automorphic representations, which are of

particular importance in string theory but are also of independent mathematical interest. Numerous open questions and conjectures, partially motivated by physics, are included to prompt the reader's own research. Automorphic Forms on GL (2)-H. Jacquet 2006-11-15

Value-Distribution of L-Functions-Jörn Steuding 2007-06-06 These notes present recent results in the value-distribution theory of L-functions with emphasis on the phenomenon of universality. In 1975, Voronin proved that any non-vanishing analytic function can be approximated uniformly by certain shifts of the Riemann zeta-function in the critical strip. This spectacular universality property has a strong impact on the zero-distribution: Riemann's hypothesis is true if and only if the Riemann zeta-function can approximate itself uniformly (in the sense of Voronin).Meanwhile universality is proved for a large zoo of Dirichlet series, and it is conjectured that all reasonable L-functions are universal. In these notes we prove universality for polynomial Euler products. Our approach follows mainly Bagchi's probabilistic method. We further discuss related topics as, e.g., almost periodicity, density estimates, Nevanlinna theory, and functional independence.

Automorphic Forms-Anton Deitmar 2012-08-29 Automorphic forms are an important complex analytic tool in number theory and modern arithmetic geometry. They played for example a vital role in Andrew Wiles's proof of Fermat's Last Theorem. This text provides a concise introduction to the world of automorphic forms using two approaches: the classic elementary theory and the modern point of view of adeles and representation theory. The reader will learn the important aims and results of the theory by focussing on its essential aspects and restricting it to the 'base field' of rational numbers. Students interested for example in arithmetic geometry or number theory will find that this book provides an optimal and easily accessible introduction into this topic.

Automorphic Forms on Adele Groups-Stephen S. Gelbart 1975-03-21 This volume investigates the interplay between the classical theory of automorphic forms and the modern theory of representations of adele groups. Interpreting important recent contributions of Jacquet and Langlands, the author presents new and previously inaccessible results, and systematically develops explicit consequences and connections with the classical theory. The underlying theme is the decomposition of the regular representation of the adele group of GL(2). A detailed proof of the celebrated trace formula of Selberg is included, with a discussion of the

possible range of applicability of this formula. Throughout the work the author emphasizes new examples and problems that remain open within the general theory. TABLE OF CONTENTS: 1. The Classical Theory 2. Automorphic Forms and the Decomposition of L2(PSL(2,R) 3. Automorphic Forms as Functions on the Adele Group of GL(2) 4. The Representations of GL(2) over Local and Global Fields 5. Cusp Forms and Representations of the Adele Group of GL(2) 6. Hecke Theory for GL(2) 7. The Construction of a Special Class of Automorphic Forms 8. Eisenstein Series and the Continuous Spectrum 9. The Trace Formula for GL(2) 10. Automorphic Forms on a Quaternion Algebr?

The Descent Map from Automorphic Representations of GL(n) to Classical Groups-David Ginzburg 2011 This book introduces the method of automorphic descent, providing an explicit inverse map to the (weak) Langlands functorial lift from generic, cuspidal representations on classical groups to general linear groups. The essence of this method is the study of certain Fourier coefficients of GelfandOCoGraev type, or of FourierOCoJacobi type when applied to certain residual Eisenstein series. This book contains a complete account of this automorphic descent, with complete, detailed proofs. The book will be of interest to graduate students and mathematicians, who specialize in automorphic forms and in representation theory of reductive groups over local fields. Relatively self-contained, the content of some of the chapters can serve as topics for graduate students seminars.

Modern Analysis of Automorphic Forms By Example-Paul Garrett 2018-08-31 Volume 1 of a two-volume introduction to the analytical aspects of automorphic forms, featuring proofs of critical results with examples.

On Certain L-functions-James Arthur 2011 This volume constitutes the proceedings of a conference, ``On Certain L-functions'', held July 23-27, 2007 at Purdue University, West Lafayette, Indiana. The conference was organized in honor of the 60th birthday of Freydoon Shahidi, widely recognized as having made groundbreaking contributions to the Langlands program. The articles in this volume represent a snapshot of the state of the field from several viewpoints. Contributions illuminate various areas of the study of geometric, analytic, and number theoretic aspects of automorphic forms and their L-functions, and both local and global theory are addressed. Topics discussed in the articles include Langlands functoriality, the Rankin-Selberg method, the Langlands-Shahidi method, motivic Galois groups, Shimura varieties, orbital integrals, representations of p-adic

groups, Plancherel formula and its consequences, the Gross-Prasad conjecture, and more. The volume also includes an expository article on Shahidi's contributions to the field, which serves as an introduction to the subject. Experts will find this book a useful reference, and beginning researchers will be able to use it to survey major results in the Langlands program.

The Descent Map from Automorphic Representations of GL(n) to Classical Groups-David Ginzburg 2011 This book introduces the method of automorphic descent, providing an explicit inverse map to the (weak) Langlands functorial lift from generic, cuspidal representations on classical groups to general linear groups. The essence of this method is the study of certain Fourier coefficients of GelfandOCoGraev type, or of FourierOCoJacobi type when applied to certain residual Eisenstein series. This book contains a complete account of this automorphic descent, with complete, detailed proofs. The book will be of interest to graduate students and mathematicians, who specialize in automorphic forms and in representation theory of reductive groups over local fields. Relatively self-contained, the content of some of the chapters can serve as topics for graduate students seminars.

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Harmonic Analysis, Group Representations, Automorphic Forms and Invariant Theory-

Derived Langlands: Monomial Resolutions Of Admissible Representations-Snaith Victor P 2018-12-05 The Langlands Programme is one of the most important areas in modern pure mathematics. The importance of this volume lies in its potential to recast many aspects of the programme in an

entirely new context. For example, the morphisms in the monomial category of a locally p-adic Lie group have a distributional description, due to Bruhat in his thesis. Admissible representations in the programme are often treated via convolution algebras of distributions and representations of Hecke algebras. The monomial embedding, introduced in this book, elegantly fits together these two uses of distribution theory. The author follows up this application by giving the monomial category treatment of the Bernstein Centre, classified by Deligne-Bernstein-Zelevinsky.This book gives a new categorical setting in which to approach well-known topics. Therefore, the context used to explain examples is often the more generally accessible case of representations of finite general linear groups. For example, Galois base-change and epsilon factors for locally p-adic Lie groups are illustrated by the analogous Shintani descent and Kondo-Gauss sums, respectively. General linear groups of local fields are emphasized. However, since the philosophy of this book is essentially that of homotopy theory and algebraic topology, it includes a short appendix showing how the buildings of Bruhat-Tits, sufficient for the general linear group, may be generalised to the tom Dieck spaces (now known as the Baum-Connes spaces) when G is a locally p-adic Lie group.The purpose of this monograph is to describe a functorial embedding of the category of admissible k-representations of a locally profinite topological group G into the derived category of the additive category of the admissible k-monomial module category. Experts in the Langlands Programme may be interested to learn that when G is a locally p-adic Lie group, the monomial category is closely related to the category of topological modules over a sort of enlarged Hecke algebra with generators corresponding to characters on compact open modulo the centre subgroups of G. Having set up this functorial embedding, how the ingredients of the celebrated Langlands Programme adapt to the context of the derived monomial module category is examined. These include automorphic representations, epsilon factors and L-functions, modular forms, Weil-Deligne representations, Galois base change and Hecke operators.
L-Functions and Galois Representations-David Burns 2007-12-27 Timely collection of articles bringing together topics at the forefront of the theory, including the local Langlands programme and automorphic forms.
Selected Works of Ilya Piatetski-Shapiro-Ilya Piatetsky-Shapiro 2000 This selection of papers of I. Piatetski-Shapiro represents almost 50 years of his mathematical activity. Included are many of his major papers in harmonic analysis, number theory, discrete groups, bounded homogeneous domains, algebraic geometry, automorphic forms, and automorphic L-functions. The papers in the volume are intended as a representative and accurate reflection of both the breadth and depth of Piatetski-Shapiro's work in mathematics. Some of his early works, such as those on the prime number theorem and on sets of uniqueness for trigonometric series, appear for the first time in English. Also included are several commentaries by his close colleagues. This volume offers an elegant representation of the contributions made by this renowned mathematician.