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0521589576 - Sieve Methods, Exponential Sums, and their Applications in Number Theory: Proceedings of a Symposium Held in Cardiff, July 1995

Edited by G. R. H. Greaves, G. Harman and M. N. Huxley

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London Mathematical Society Lecture Note Series. 237

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PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge CB2 1RP, United Kingdom

CAMBRIDGE UNIVERSITY PRESS

The Edinburgh Building, Cambridge, CB2 2RU, United Kingdom

40 West 20th Street, New York, NY 10011-4211, USA

10 Stamford Road, Oakleigh, Melbourne 3166, Australia

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First published 1997

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing in Publication data available

ISBN 0 521 58957 6 paperback

Transferred to digital printing 2004

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Foreword

Between the 17th and the 21st of July, 1995 a group of about fifty mathematicians gathered in Cardiff for the Symposium on Sieve Methods, Exponential Sums and their Applications in Number Theory. They exchanged lectures and informal discussions and posed problems in the broad subject area defined by the title of the Symposium. This volume of papers gives an account of work described at the Symposium. Certain articles include a description of work done after the Symposium closed, some of this being prompted by questions posed during the Symposium.

Many of the contributions involve connections between the additive and multiplicative sides of analytic number theory, an interplay which the Symposium had been planned both to reflect and to promote. The reader will find represented here most of the branches of this subject which, as this volume demonstrates, has its roots in antiquity with the Sieve of Eratosthenes, yet is currently vibrant and receiving fresh stimulus from such diverse topics as trace formulae and elliptic curves.

Many of the participants at the Symposium were supported by the Engineering and Physical Sciences Research Council of the U.K. Others were able to bring their own support with them. The administrative costs were underwritten by the London Mathematical Society. The organisers, who are also the editors of this volume, are grateful to all the sources of support which made the Symposium possible.

The papers in this volume have been refereed to the standards required by leading journals; we take this opportunity to thank the referees for their work. The book was typeset by the editors using *EMT_EX* software, for the most part on the basis of source code supplied by the authors.

The Symposium marked the twenty-eighth year during which Professor C. Hooley, F.R.S. had been head of a university mathematics department in Cardiff, during which time he accomplished much distinguished work in the subject area of the Symposium. In particular his pioneering work on the circle method and on applications of sieves, involving research on additive divisor problems and exponential sums (including Kloosterman sums), has been a constant source of inspiration to all the participants. Authors of papers printed in this volume dedicated their articles to him, in various styles. We have not reproduced these dedications at the head of each article; we record them collectively here, and take the opportunity to dedicate the entire book to Christopher Hooley.

Cardiff, Wales
September, 1996

G.R.H.G.
G.H.
M.N.H.

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