

S. 14665
[17]

ELEMENTARY AND ANALYTIC THEORY OF NUMBERS

Editor of the Volume
HENRYK IWANIEC

WARSZAWA 1985

PREFACE

These are the proceedings of the 20th semester held at the Banach International Mathematical Center at Warsaw from September 1st to November 13th, 1982. Its primary aim was to review important topics in elementary and analytic number theory, creating thus an opportunity for young mathematicians, principally from socialist countries, to improve their qualifications and stimulating their interest in higher arithmetic.

About 70 mathematicians came together at the Banach Center to attend 123 lectures on diverse topics. We were very happy to welcome large groups of participants from the German Democratic Republic and Hungarian People's Republic, and also smaller groups and individual visitors from all over Europe, Japan and Australia. We regretted the absence of the invited colleagues from the Soviet Union and USA.

This volume contains expanded versions of many of the lectures and a few papers which were not presented at the semester. Since these proceedings do not include all the lectures, it is important to mention those speakers who gave longer series of lectures, namely Professors Balog, Bruggeman, Deshouillers, Erdős, Elstrodt, Gérardin, Greaves, Haberland, Huxley, Mennicke, Odoni, Richert, Ruzsa, Sós, Vignéras and Schwarz.

We thank the Scientific Council of the Banach Mathematical Center, who were the initiators of the semester. We are particularly grateful to Professor Cz. Olech for his help and tactful encouragement whenever any doubts or difficulties arose in running the semester. We are very grateful to all speakers and participants, for their understanding and cooperation, which greatly contributed to the final success of the semester. We also thank Doctors Browkin, Mąkowski and Szmidt for taking care of the technical problems, Dr Szmidt for his help in the preparation of the manuscripts and Miss G. Pieścik for her excellent administrative work at the semester.

April 1983

H.I.

PARTICIPANTS

Y. Alemu	(Addis Abeba)	J.-L. Nicolas	(Limoges)
A. Balog *	(Budapest)	R. W. K. Odoni *	(Exeter)
K. Bartz	(Poznań)	A. Perelli*	(Pisa)
P. E. Blanksby *	(Adelaide)	J. Piehler	(Merseburg)
J. Browkin	(Warszawa)	J. Pintz *	(Budapest)
R. W. Bruggeman *	(Utrecht)	P. A. B. Pleasants *	(Cardiff)
A. Czogała	(Katowice)	J. Pomykała	(Warszawa)
A. Dąbrowski	(Warszawa)	M. Pop	(Bucharest)
J.-M. Deshouillers*	(Talence)	F. Pop	(Bucharest)
J. Elstrodt *	(Münster)	S. G. Révész	(Budapest)
P. Erdős	(Budapest)	H.-E. Richert *	(Ulm)
T. Fryska	(Poznań)	A. Rotkiewicz	(Warszawa)
A. Fujii *	(Tokyo)	J. Rutkowski	(Poznań)
P. Gérardin	(Paris)	I. Z. Ruzsa	(Budapest)
A. Good	(Zürich)	S. Salerno	(Salerno)
G. Greaves *	(Cardiff)	A. Schinzel	(Warszawa)
A. Grytczuk	(Zielona Góra)	W. Schwarz *	(Frankfurt/Main)
K. Haberland	(Berlin)	V. T. Sós	(Budapest)
G. Halász	(Budapest)	T. Spirscu	(Bucharest)
W. Hoffmann	(Berlin)	J. Szmidt *	(Warszawa)
G. Horn	(Jena)	M. Szyjewski	(Katowice)
M. N. Huxley *	(Cardiff)	B. Tropak	(Zielona Góra)
H. Iwaniec *	(Warszawa)	J. Urbanowicz	(Warszawa)
S. Jakubec	(Bratislava)	J. Valusescu	(Bucharest)
J. Kaczorowski*	(Poznań)	M. Vigneras	(Paris)
E. Krätzel*	(Jena)	M. Vogts	(Jena)
M. Laborde	(Paris)	B. Wantuła	(Gliwice)
A. Mąkowski	(Warszawa)	T. Werbiński	(Poznań)
M. Mendès-France	(Talence)	J. Wieczorkiewicz	(Poznań)
J. Mennicke *	(Bielefeld)	K. Wiertelak	(Poznań)
H. Menzer	(Jena)	E. Wirsing	(Ulm)
G. Morales-Luna	(Mexico)	J. Wójcik	(Warszawa)
W. Müller	(Berlin)	U. Zannier	(Pisa)
M. Nair	(Glasgow)		

* These participants contributed to this book.

CONTENTS

Preface	5
Participants	6
A. BALOG, On sums over primes	9–19
P. E. BLANKSBY, Greatest distance between zeros of integral polynomials	21–30
R. W. BRUGGEMAN, Automorphic forms	31–74
J.-M. DESHOUILERS, Geometric aspect of Weyl sums	75–82
J. ELSTRODT, F. GRUNEWALD and J. MENNICKE, The Selberg zeta-function for cocompact discrete subgroups of $PSL(2, C)$	83–120
A. FUJII, Some additive problems of numbers	121–141
G. GREAVES, A comparison of some weighted sieves	143–153
H. HALBERSTAM and H.-E. RICHERT, A weighted sieve of Greaves' type I	155–182
—, —, A weighted sieve of Greaves' type II	183–215
M. N. HUXLEY, Introduction to Kloostermania	217–306
—, Dirichlet polynomials	307–316
H. IWANIEC and J. SZMIDT, Density theorems for exceptional eigenvalues of the Laplacian for congruence groups	317–331
J. KACZOROWSKI, Some problems concerning roots of polynomials with Dirichlet characters as coefficients	333–335
E. KRÄTZEL, Zweifache Exponentialsummen und dreidimensionale Gitterpunktprobleme	337–369
R. W. K. ODoni, Notes on the method of Frobenian functions with applications to Fourier coefficients of modular forms	371–403
A. PERELLI, On the prime number theorem for the coefficients of certain modular forms	405–410
J. PINTZ, On the mean value of the remainder term of the prime number formula	411–417
—, Prime numbers in short intervals	419–429
P. A. B. PLEASANTS, The number of prime factors of binomial coefficients	431–438
—, Quasicrystallography: some interesting new patterns	439–461
W. SCHWARZ, Remarks on the theorem of Elliott and Daboussi, and applications	463–498