

ANNALES
MATHEMATICAE
SILESIANAE
12

Annales Mathematicae Silesianae is published by the Silesian University. The journal publishes original research papers in pure and applied mathematics.

EDITORIAL OFFICE

Instytut Matematyki
Uniwersytet Śląski
ul. Bankowa 14
40-007 Katowice
Poland

PRACE NAUKOWE
UNIWERSYTETU
ŚLĄSKIEGO
W KATOWICACH
NR 1751

Annales Mathematicae Silesianae

12

WYDAWNICTWO UNIWERSYTETU ŚLĄSKIEGO
KATOWICE 1998



EDITORIAL BOARD: Karol Baron, Aleksander Błaszczyk (*editor*),
Tadeusz Dłotko, Roman Ger, Władysław Kulpa,
Andrzej Lasota, Janusz Matkowski, Jerzy
Mioduszewski, Tomasz Połacik (*secretary*),
Kazimierz Szymiczek

Projekt okładki

Gerard Labus

Copyright © 1998
by Wydawnictwo Uniwersytetu Śląskiego
Wszelkie prawa zastrzeżone

Wydawca
Wydawnictwo Uniwersytetu Śląskiego
ul. Bankowa 12B, 40-007 Katowice

Wydanie I. Nakład 250 + 50 egz. + 25 nadb. Ark.
druk. 11,0. Ark. wyd. 13,0. Podpisano do druku w
grudniu 1998 r. Papier offset kl. III 80 g. 70 × 100.
Cena 9 zł

This journal was typeset by $\mathcal{A}\mathcal{M}\mathcal{S}$ - $\text{T}\mathcal{E}\mathcal{X}$, the $\text{T}\mathcal{E}\mathcal{X}$ macro
system of the American Mathematical Society.

Skład komputerowy tekstu: Aleksandra Kaptur
Instytut Matematyki, Uniwersytet Śląski

Druk i oprawa: PERGAMON. Wydawnictwo Drukarnia
43-100 Tychy, ul. Zakątek 6

ISSN 0208-6336

ISSN 0860-2107

Contents

FOREWORD	7
KRYSTYNA M. BARTZ On Carlitz theorem for Bernoulli polynomials.....	9
TADEUSZ PEZDA: Cycles of rational mappings in algebraically closed fields of positive characteristics.....	15
JAN KREMPA: On reduced rings and number theory	23
ANDRZEJ SCHINZEL: On Pythagorean triangles.....	31
IVAN KOREC : Additive conditions on sums of squares	35
KAZIMIERZ SZYMICZEK: 2-ranks of class groups of Witt equivalent number fields	53
OTOKAR GROŠEK, KAROL NEMOGA AND LADISLAV SATKO: Remarks to short RSA public exponents	65
STANISLAV JAKUBEC AND MIROSLAV LAŠŠÁK: Congruence of Ankeny-Artin-Chowla type modulo p^2	75
ANDRZEJ ŚLADEK AND ADAM WESOŁOWSKI: Clifford-Littlewood-Eckmann groups as orthogonal groups of forms of higher degree	93
ALFRED CZOGAŁA: Generators of the Witt groups of algebraic integers	105
JOZSEF BUKOR, PÉTER FILAKOVSKY, AND JÁNOS T. TÓTH: On the diophantine equation $x_1x_2 \cdots x_n = h(n)(x_1 + x_2 + \cdots + x_n)$	123

KRZYSZTOF KOZIOL AND MIECZYSLAW KULA: Witt rings of infinite algebraic extensions of global fields	131
GRZEGORZ BANASZAK: Mod p logarithms $\log_2 3$ and $\log_3 2$ differ for infinitely many primes	141
ŠTEFAN PORUBSKÝ: Sets of regular systems of divisors of a generalized integer	149
STANISLAV JAKUBEC: Prime periods of periodical P -additive functions	157
THOMAS C. PALFREY: Density theorems for reciprocity equivalences	161
PROBLEM SESSION	173

FOREWORD

The 2nd Czech and Polish Conference on Number Theory, organized by the Institute of Mathematics of the University of Silesia in Katowice, was held at the Branch of the University in Cieszyn, June 16–18, 1998.

This issue of *Annales Mathematicae Silesianae* contains (with one exception) the papers presented by the participants. The conference was attended by 48 number theorists from Czech Republic, Poland and Slovakia. In number-theoretical terms the numbers of participants from the three countries form an arithmetic progression with no prime entries: Slovakia 6, Czech Republic 16, Poland 26. A list of participants appears below.

This volume of papers is dedicated to the memory of Ivan Korec who attended the conference and passed away on August 4, 1998.

Kazimierz Szymiczek
Proceedings Editor

List of participants

Grzegorz Banaszak, Poznań	Władysław Narkiewicz, Wrocław
Krystyna Bartz, Poznań	Karol Nemoga, Bratislava
Michał Bulant, Brno	Břetislav Novák, Praha
Stefan Chaładus, Kielce	Milan Paštéka, Ostrava
Alfred Czogała, Katowice	Andrzej Paszkiewicz, Warszawa
Zuzana Divišova, Ostrava	Tadeusz Pezda, Wrocław
Antonin Dvořák, Ostrava	Marek Pomp, Ostrava
Petr Fibinger, Ostrava	Mária Porubská, Praha
Tadeusz Fryska, Poznań	Štefan Porubský, Praha
Wojciech Gajda, Poznań	Maciej Radziejewski, Poznań
Jaroslav Hančl, Ostrava	Jerzy Rutkowski, Poznań
Stanislav Jakubec, Bratislava	Andrzej Schinzel, Warszawa
David Jedelský, Ostrava	Andrzej Śladek, Katowice
Przemysław Koprowski, Katowice	Simona Sobková, Ostrava
Ivan Korec, Bratislava	Oto Strauch, Bratislava
Juraj Kostra, Ostrava	Bonifacy Szczepanik, Katowice
Krzysztof Koziół, Katowice	Janusz Szmidt, Warszawa
Jan Krempa, Warszawa	Marek Szyjewski, Katowice
Radan Kučera, Brno	Kazimierz Szymiczek, Katowice
Mieczysław Kula, Katowice	János Tóth, Nitra
Miroslav Laššák, Bratislava	Pavel Trojovský, Hradec Králové
Roman Marszałek, Wrocław	Adam Wesołowski, Katowice
Andrzej Mąkowski, Warszawa	Kazimierz Wiertelak, Poznań
Jiří Močkoř, Ostrava	Witold Więśław, Wrocław

INSTRUCTIONS TO AUTHORS

1. Two copies of the complete manuscript, written in one of the congress languages, should be submitted to the Editorial Office: Instytut Matematyki, Uniwersytet Śląski, Bankowa 14, 40-007 Katowice, Poland.

2. An abstract of not more than 20 lines describing the main result of the paper and the AMS subject classifications and keywords should be included.

3. The paper should be typed without corrections, with wide spacing between the lines. For bibliographic references please use the style and abbreviations used by the MATHEMATICAL REVIEWS.

4. In order to speed up the process of printing, the authors are asked to provide DOS diskettes with the $\text{T}_{\text{E}}\text{X}$ files of their articles (La $\text{T}_{\text{E}}\text{X}$ is acceptable and $\text{T}_{\text{E}}\text{X}$ preferable).