CONTEMPORARY MATHEMATICS

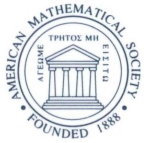
184

Second International Conference on Algebra

Dedicated to the Memory of A. I. Shirshov

Proceedings of the Second International Conference on Algebra
August 20–25, 1991
Barnaul, Russia

L. A. Bokut'
A. I. Kostrikin
S. S. Kutateladze
Editors



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From the Editors

This volume contains articles presented at the Second International Conference on Algebra. It is in Barnaul, August, 20–25 of 1991 that the Second International Conference on Algebra took place, held in memory of Anatoliĭ Illarionovich Shirshov (1921–1981), a corresponding member of the USSR Academy of Sciences. A. I. Shirshov was a famous specialist in the theory of associative and nonassociative (alternative, Jordan, Lie, etc.) rings. A. I. Shirshov's contribution to the theory of associative rings was reported by Professor S. A. Amitsur (the Hebrew University) in his talk at the Conference. Suffice it to mention that E. I. Zel'manov is one of the brilliant representatives of A. I. Shirshov's school. A detailed survey of A. I. Shirshov's results was made by L. A. Bokut' and I. P. Shestakov; it opens the volume. The Conference was organized by the Altaian University, the Institute of Mathematics of the Siberian Division of the Russian Academy of Sciences, and Moscow University. The Organizing Committee consisted of A. I. Kostrikin (Chairman), L. A. Bokut', Yu. L. Ershov, Yu. I. Mal'tsev, N. S. Remnëva, I. P. Shestakov, L. Small, and S. A. Syskin.

The Conference was declared open on August, 20. The organizers had published the Abstracts of Reports in four volumes, the program and schedule of the Conference. The body of participants included 380 persons from 65 cities of the fSU and 76 foreigners from 22 countries. Some lecturers from the fSU and abroad could not participate in view of the "Putsch" at Moscow on August 19 which resulted in the disintegration of the USSR. Among the largest were the groups of participants from Moscow (44), Novosibirsk (34), Ekaterinburg (29), Krasnoyarsk (19), Minsk (14), and Omsk (14); from Germany (14), USA (13), and Italy (8).

The work of the Conference was arranged as follows: plenary talks before lunch and reports after the break in the seven sections and seventeen subsections.

The sections were:

Finite Groups
Infinite Groups
Associative Rings
Lie Algebras and Nonassociative Algebras
Logic and Universal Algebras
Algebra and Analysis
Applied Algebra

The subsections were:

Finite Groups
Infinite Groups
Associative Rings
Lie Algebras and Representations
Nonassociative Rings
Representations of Groups and Algebras. Group Rings
Homological Algebra, Theory of Categories, K-Theory, Galois Theory
Logic and Universal Algebras
Algebra and Analysis
Applied and Computer Algebra
Linear and Algebraic Groups
Abelian Groups and Modules
Semigroups
Quasigroups
Algebra and Geometry
Physics and Representation Theory
Topological and Ordered Algebraic Systems

The list of 21 plenary (50 minute) talks follows

L. A. Bokut', E. N. Kuz'min, V. N. Latyshev, and I. P. Shestakov (Novosibirsk)
Some Results by A. I. Shirshov and His School

V. N. Remeslennikov (Omsk)
∃-Free Groups and Groups with Length Function

S. A. Amitsur (Israel)
Algebras with Polynomial Identities

Yu. V. Kuzmin (Moscow)
Homologies of Group Extensions

M. I. Kuznetsov (Nizhniĭ Novgorod)
Classification of Simple 1-Graded Lie Algebras of Characteristic p

Eiichi Abe (Japan)
Chevalley Groups over Commutative Rings. Structure and Automorphisms

K. W. Roggenkamp (Germany)
p-Adic Blocks with Cyclic Defect

A. V. Il'tyakov (Novosibirsk)
Finiteness of a Basis of Identities for Finite-Dimensional Lie Algebras and Alternative Algebras over a Field of Characteristic Zero

H. Helling (Germany)
Hyperbolic Structure of Three-Manifolds

Narain Gupta (Canada)
Dimension Subgroups: Some Recent Developments

R. I. Grigorchuk, P. F. Kurchanov, and I. G. Lysënok (Moscow)
Intertwining Homomorphisms and Quadratic Equations in Groups

L. Small (USA)
Noetherian Rings and Their Applications

N. L. Gordeev (St. Petersburg)
Products of Conjugacy Classes in Algebraic Groups

B. Poisat (France)
Stable Groups

V. Dlab (Canada) and D. Ringel (Germany)
Quasihereditary Algebras

E. B. Vinberg (Moscow)
Generalized Triangle Groups

M. V. Volkov (Ekaterinburg)
Varieties of Semigroups with the Modular Lattice of Subvarieties

V. I. Trofimov (Ekaterinburg)
Stabilizers of Vertices of Graphs

Yu. A. Drozd and S. A. Ovsienko (Kiev)
An Algorithm for Matrix Reduction and Representation Theory

A. Ya. Khelemskiĭ (Moscow)
Results and Problems of "Topological Homology"

A. I. Omarov (Alma-Ata)
Syntactic Characterization of Filtered Formulas

O. I. Tavgen′ (Minsk)
Combinatorial Properties of Arithmetic and Linear Groups

The cultural program included a reception by the regional administration, sightseeing, and boating.

More than 30 participants took part in the 6th Siberian Workshop "Algebra and Analysis" that happened at the Lake Baikal. Some adventurers visited the Lake Teletskoe. A reminiscence party in memory of A. I. Shirshov was arranged on August, 28. A. I. Shirshov's widow and many of his students and colleagues were active participants.

The preparation of the present volume took more time than planned due to tumultuous events in the fSU. We thank the principals of the AMS and the authors of the volume for patience and cooperation.

20 August 1994
Novosibirsk

L. A. Bokut′
A. I. Kostrikin
S. S. Kutateladze

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Second International Conference on Algebra

L. A. Bokut′, A. I. Kostrikin,
and S. S. Kutateladze, Editors

This book contains papers presented at the Second International Conference on Algebra, held in Barnaul in August 1991 in honor of the memory of A. I. Shirshov (1921–1981). Many of the results presented here have not been published elsewhere in the literature. The collection provides a panorama of current research in PI-, associative, Lie, and Jordan algebras and discusses the interrelations of these areas with geometry and physics. Other topics in group theory and homological algebra are also covered.

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