

**GENERAL  
ALGEBRA  
1988**

# GENERAL ALGEBRA 1988

Proceedings of the International Conference  
held in memory of Wilfried Nöbauer  
Krems, Austria, August 21 – 27, 1988

Edited by

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## FOREWORD

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The present volume is a collection of those contributions which did not yet appear in print, also where all these manuscripts were subject to a refereeing system. I wish to express here my thanks to the referees for their work. Unfortunately, some authors did not send their contribution within the deadline, and I had to withdraw it at the last moment, thus reducing the size of the volume. Nevertheless, these proceedings reflect the actual research work in various branches of Algebra.

As the organizer of the conference and editor of this volume I would like to express on behalf of all participants the gratitude to the Bundesministerium für Wissenschaft und Forschung, the Niederösterreichische Landesregierung, the Österreichische Forschungsgemeinschaft, the Rector of the TU Wien and the Verein der Freunde und Absolventen der TU Wien for their financial support. Without their help it would have been impossible to make the conference so international as it was and to print the proceedings. Last not least, we should not forget to mention

## PREFACE

At the beginning of 1988 the Austrian mathematical community was preparing to celebrate the sixtieth birthday of one of its outstanding members, Wilfried Nöbauer, professor at Vienna Technical University. As one of the main points of these celebrations, an international conference on general algebra was planned. The fate did not allow prof. Nöbauer to attend this congress: he unexpectedly died on February 12, 1988, four months before his anniversary. It was our sad duty to turn the jubilee-conference into a memorial one. Under these auspices, from August 21 to 27, 1988, 83 algebraists from 21 countries of the world met in Krems presenting and discussing their recent results.

The present volume is — with the exception of two surveys — the collection of those contributions which did not yet appear in print elsewhere. All these manuscripts were subject to a refereeing system and I wish to express here my thanks to the referees for their work. Unfortunately, some authors did not send their contribution within the deadline resp. withdrew it at the last moment, thus reducing the size of this volume. Nevertheless, these proceedings reflect the actual research work in various branches of algebra.

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the hospitality of the authorities of the town of Krems and of the Pädagogische Akademie in Krems, where the conference took place. I think the best way to express how we enjoyed staying there is just to say: "We'll come again!".

Wien, December 1989

The editor

## CONTENTS

Preface . . . . .	3
Contents . . . . .	5
List of Lectures given at the Conference . . . . .	7
R. Mlitz:	
<i>Wilfried Nöbauer — a Life for Algebra of Polynomials</i> . . . . .	13
K. Aragane:	
<i>Syntactical Characterizations of the Amalgamation Property     for Universal Horn Classes</i> . . . . .	27
G. Behrendt:	
<i>The Cutset Lattice of a Partially Ordered Set</i> . . . . .	39
D. N. Dikranjan:	
<i>Radicals and Duality I</i> . . . . .	45
H. Draškovićová:	
<i>On some Classes of Perfect Media</i> . . . . .	65
K. Głazek/J. Michalski:	
<i>Polyadic Group Operations on Small Sets</i> . . . . .	85
H. Gross <sup>†</sup> :	
<i>On Orthomodular Spaces</i> . . . . .	95
G. Hofer:	
<i>Weak Equivalence in Group Automata</i> . . . . .	109
H. Karzel:	
<i>Double Spaces of Order 3 and D-Loops of Exponent 3</i> . . . . .	115
F. Kasch:	
<i>The Total in the Category of Modules</i> . . . . .	129
M. Kolibiar:	
<i>Direct Product Decomposition of Median groups</i> . . . . .	139
N. V. Loi:	
<i>On the Structure of Semiprime Involution Rings</i> . . . . .	153
F. Loonstra <sup>†</sup> :	
<i>Rational Extensions of Modules</i> . . . . .	163

S. J. R. Mahmood:	
<i>Distributively Generated Near-Rings on the Dihedral Group</i>	
<i>of Order <math>2n</math>, <math>n</math> Odd</i> . . . . .	177
C. J. Maxson:	
<i>A-Full Meromorphic Products</i> . . . . .	191
J. D. P. Meldrum:	
<i>Near-Rings — a Non-Linear Tool for Groups</i> . . . . .	199
J. Płonka:	
<i>Some Decompositions of the Sum of a Semilattice</i>	
<i>Ordered System of Algebras</i> . . . . .	213
L. Salce:	
<i>Modular Lattices and Polyserial modules</i> . . . . .	221
E. T. Schmidt:	
<i>Polynomial Automorphisms of Lattices</i> . . . . .	233
B. Šešelja/A. Tepavčević:	
<i>Infinitely Distributive Elements in the Lattice of</i>	
<i>Weak Congruences</i> . . . . .	241
Problems Presented at the Problem Session . . . . .	255
Addresses of the Participants . . . . .	259



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# LIST OF LECTURES GIVEN AT THE CONFERENCE

S. A. H. Al-Taha:

*On projective and flat ideals in commutative rings*

K. Aragane:

*Syntactical characterizations of the amalgamation property for universal Horn classes*

G. Behrendt:

*The cutset lattice of a partially ordered set*

H. E. Bell:

*Centralizing mappings in rings*

G. Betsch:

*Some results on bicentralizer near-rings*

L. Bican:

*Butler modules*

L. A. Bokut':

*A survey of russian papers on the diamond lemma*  
(Lecture held by M. Slater)

H. H. Brungs:

*Noncommutative valuations and valuation semigroups*

G. Bruns:

*Completions of orthomodular lattices*

J. R. Clay:

*Nearrings of the second kind for polynomials and group algebras*

G. Czedli:

*How are diamond identities implied in congruence varieties?*

D. Dikranjan:

*Radicals and duality*

R. Dimitric:

*On a duality between  $\text{Hom}_R$  and  $\otimes_R$*

H. Dobbertin:

*On congruence lattices of lattices*

D. Dorninger:

*On permutations of chromosomes*

H. Draškovicová:

*Perfect median algebras*

G. Eigenthaler:

*Commutative composition semigroups of polynomials*

St. Foldes:

*A lattice-like structure in industrial optimization*

Y. Fong:

*Syntactic near-rings of finite group-semiautomata*

E. Fried:

*The lattice of clones containing an abelian group of prime order*

R. Fritzsche:

*On preprimary lattices*

P. Fuchs:

*Pseudo-finite near-fields having finite dimension over the center*

T. Fujiwara:

*On algebraic closedness*

K. Głazek:

*Polyadic operations on small sets*

E. Graczynska-Wronska:

*Some properties of hypervarieties*

H. Gross†:

*Orthomodular spaces*

G. Hofer:

*Syntactic rings*

A. S. Ibrahim:

*Normal sequences of refined fuzzy subgroups*



B. Janeva:

*Vector valued associatives*

K. Kaarli:

*On affine completeness of varieties*

H. Kaiser:

*Order polynomially complete lattices*

H. Karzel:

*Zur inzidenzgeometrischen Kennzeichnung kinematischer Räume*

F. Kasch:

*The total in the category of modules*

A. I. Kashu:

*Torsions in modules: localisations and canonical homomorphisms*

H. Kautschitsch:

*Pole assignability in power series rings*

H. Koch:

*Combinatorial aspects of algebraic coding theory*

M. Kolibiar:

*Median groups*

H. Länger:

*Some remarks on the factorization and zeros of polynomials*

J. Lihova:

*On varieties of directed multilattices*

N. V. Loi:

*On the structure of semiprime involution rings*

F. Loonstra<sup>†</sup>:

*Rational extensions of modules*

S. J. R. Mahmood:

*Faithful d.g. near-rings*

L. Márki:

*A general approximation theorem*

S. Markovski:

*Presentations of vector valued semigroups*