

Institute of Mathematics and Informatics  
Bulgarian Academy of Sciences

**INTERNATIONAL WORKSHOP  
„GROUPS AND RINGS – THEORY  
AND APPLICATIONS”  
(GRiTA2015)**

**July 15 – 22, 2015, Sofia, Bulgaria**



**SCIENTIFIC PROGRAM**

**Institute of Mathematics and Informatics  
Room 055**

Sofia, 2015

## **Programme and Organising Committee:**

Vesselin Drensky, IMI – BAS, Sofia, Bulgaria (Chairman)

Ivan Chipchakov, IMI – BAS, Sofia, Bulgaria

Martin Kassabov, Cornell University, USA

Plamen Koshlukov, State University of Campinas, Brazil

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Several of the participants were completely or partially supported by Grant I 02/18 “Computational and Combinatorial Methods in Algebra and Applications” of the Bulgarian National Science Fund.

**JULY 16 (THURSDAY)**

09:00–09:15 OPENING CEREMONY

09:15–10:00 Efim ZELMANOV

*Specht's problem and pro- $p$  identities of pro- $p$  groups*

10:00–10:45 Claudio PROCESI

*Fundamental algebras with polynomial identities*

10:45–11:15 COFFEE BREAK

11:15–11:45 Špela ŠPENKO

*Applications of matrix invariants in free function theory  
and their non-commutative resolutions*

11:45–12:15 Daniela LA MATTINA

*Algebras with polynomial codimension growth*

12:15–12:45 Geoffrey JANSSENS

*PI-Exponent and structure of Lie algebras  
with a generalized action*

12:45–14:15 LUNCH

14:15–15:00 Agata SMOKTUNOWICZ

*Remarks on differential polynomial rings, tensor products  
and growth of algebras*

15:00–15:30 Thomas SICKING

*The dimension problem for groups and Lie rings*

15:30–16:00 Todor POPOV

*Pre-plactic algebra*

16:00–16:30 COFFEE BREAK

16:30–17:15 Ivo MICHAÏLOV

*Unramified cohomology and Noether's problem*

17:15–18:00 Vesselin DRENSKY

*Games on partitions*

19:00– OFFICIAL DINNER

**JULY 17 (FRIDAY)**

09:00–09:45 Nikolay NIKOLOV

***Words and strong completeness of profinite groups:  
beyond finite generation***

09:45–10:30 Dessislava KOCHLOUKOVA

***Volume gradients and homology  
in towers of residually-free groups***

10:30–11:00 COFFEE BREAK

11:00–11:45 Mikhail ZAICEV

***Graded codimensions of Lie superalgebras***

11:45–12:15 Onofrio Mario DI VINCENZO

***Minimal superalgebras generating minimal supervarieties  
with respect to the graded PI-exponent***

12:15–12:45 Olga FINOGENOVA

***Tensor product theorems for different types of fields***

12:45–14:15 LUNCH

14:15–15:00 Amitai REGEV

***On the amount of central polynomials***

15:00–15:45 Eli ALJADIFF

***On  $G$ -graded verbally prime algebras***

15:45–16:15 Ofir DAVID

***The center of the generic  $G$ -crossed product***

16:15–16:45 COFFEE BREAK

16:45–17:30 Alexey GORDIENKO

***Semigroup graded algebras  
and graded polynomial identities***

17:30–18:00 Yakov KARASIK

***PI-representability and exponent  
in the framework of Hopf algebras***

18:00–18:30 Francesca BENANTI

***Asymptotics for graded Capelli polynomials***

**JULY 18 (SATURDAY)**

09:00–09:45 Stefka BOUYUKLIEVA

*Self-dual codes and their automorphisms*

09:45–10:15 Lyubomir BORISOV and Asen BOJILOV

*Minimum distance and covering radius  
of some Melas-like cyclic codes*

10:15–10:45 Peter BOYVALENKOV and Maya STOYANOVA

*Levenshtein-type bound on maximal codes*

10:45–11:15 COFFEE BREAK

11:15–12:00 Ivan LANDJEV

*The polynomial method in finite geometry*

12:00–12:30 Plamen KOEV

*Wishart matrices of arbitrary dimension over the reals*

12:30–13:00 Tatyana TODOROVA

*A Bombieri-Vinogradov type exponential sum result*

13:00–14:30 LUNCH

14:30–15:15 Azniv KASPARIAN

*Toroidal compactifications of discrete quotients  
of period domains*

15:15–16:00 Leonid BEDRATYUK

*Classical invariant theory and its applications*

16:00–16:30 COFFEE BREAK

16:30–17:15 Salvatore DOLCE

*On certain modules of covariants in exterior algebras*

17:15–17:45 Kálmán CZISZTER

*Degree bounds for generators of invariant rings*

17:45–18:15 Ivan CHIPCHAKOV

*Absolute Brauer  $p$ -dimensions, Henselian fields  
and the inverse problem for index-period pairs*

**JULY 20 (MONDAY)**

09:00–09:45 Alexey BELOV-KANEL (with Ilya IVANOV-POGODAEV)

*Construction of infinite finitely presented nilsemigroup*

09:45–10:30 Tatiana GATEVA-IVANOVA

*Set-theoretic solutions of the Yang–Baxter equation,  
braces and braided groups*

10:30–11:00 COFFEE BREAK

11:00–11:45 Martin KASSABOV

*Hopf algebras and representation varieties*

11:45–12:30 Jenő SZIGETI

*A new class of supermatrix algebras*

12:30–14:00 LUNCH

14:00–14:45 Gregg ZUCKERMAN

*Infinite dimensional representations  
of Lie groups and Lie algebras*

14:45–15:30 Ivan PENKOV

*Primitive ideals in  $U(\mathfrak{sl}(\infty))$ ,  $U(\mathfrak{o}(\infty))$ ,  $U(\mathfrak{sp}(\infty))$*

15:30–16:00 COFFEE BREAK

16:00–16:45 Dimitar GRANTCHAROV

*Twisted localization of weight modules*

16:45–17:30 Mashhour BANI ATA

*On the classification of four-dimensional division algebras  
over finite fields  $\mathbb{F}_q$*

17:30–18:00 Be'eri GREENFELD

*Structure and chains in non-commutative spectra*

18:00–18:30 Jordan SAHATTCHIEVE

*Bounded packing*

**JULY 21 (TUESDAY)**

09:00–09:45 Antonio GIAMBRUNO

*Anomalies on codimension growth of algebras*

09:45–10:30 Plamen KOSHLUKOV

*Gradings on Lie and Jordan algebras  
and their graded identities*

10:30–11:00 COFFEE BREAK

11:00–11:30 Boyan KOSTADINOV

*Application of rational generating functions  
to algebras with polynomial identities*

11:30–12:00 Tsetska RASHKOVA

*On the PI-properties of some matrix algebras with involution*

12:00–12:30 Konstantin TABAKOV

*(2, 3)-Generation of some finite groups*

12:30–14:00 LUNCH

14:00–14:45 Athanasios PAPISTAS

*Free center-by-metabelian and nilpotent groups*

14:45–15:15 Şehmus FINDIK

*Some classes of automorphisms  
of relatively free nilpotent Lie algebras*

15:15–15:45 COFFEE BREAK

15:45–16:30 Ilir SNOPCHE

*Test elements in (pro- $p$ ) groups*

16:30–17:15 Slobodan TANUSHEVSKI

*A new class of generalized Thompson's groups*

17:15–17:45 Victor BOVDI

*Free subgroups in group rings*