

Università del Salento
Università degli Studi di Napoli
Federico II
Seconda Università degli Studi
di Napoli
Università degli Studi di
Salerno



***Advances in Group
Theory and
Applications 2009***

Hotel Lo Scoglio, Porto Cesareo (Lecce,
ITALY): June, 8th - 12th, 2009

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PROGRAMME

Monday, June 8th

- Registration until 14.00
- 15.00 Opening
- 15.30 - 16.30 **J.S. Wilson:** *Profinite and Residually Finite Groups I*
- 16.30 - 17.00 **B. Amberg:** *Trifactorizable groups*
- 17.00 - 17.30 Coffee break
- 17.30 - 18.30 **D.J.S. Robinson:** *Strong Forms of Residual Finiteness*
- 18.30 - 18.55 **W. de Graaf:** *Constructing generators of unit groups of group algebras of finite commutative groups*

Tuesday, June 9th

Participants

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- 9.00 - 10.00 **S.K. Sehgal:** *Group Rings and their Group of Units I*
- 10.00 - 11.00 **J.S. Wilson:** *Profinite and Residually Finite Groups II*
- 11.00 - 11.30 Coffee break
- 11.30 - 11.55 **C.A. Pallikaros:** *On decompositions of the longest element of S_n and the combinatorics of certain Kazhdan-Lusztig cells*
- 12.00 - 12.25 **P. Spiga:** *Fixed-point-free elements in p -groups*
- 12.30 - 12.55 **A. Tortora:** *Totally inert simple groups*

- 15.00 - 16.00 **J. Cossey:** *Soluble Products of Finite Groups*
- 16.00 - 17.00 **L.A. Kurdachenko:** *On Some Infinite Dimensional Linear Groups*
- 17.00 - 17.30 Coffee break
- 17.30 - 17.55 **N. Trabelsi:** *Soluble minimal non-(finite-by-Baer)-groups*
- 18.00 - 18.25 **E. Pastori:** *On n -uniqueness of amalgams*
- 18.30 - 18.55 **R. Zarzycki:** *Limits and laws with parameters of the Thompson's group F*

Wednesday, June 10th

- 9.00 - 10.00 **D.J.S. Robinson:** *Graphs of Groups and Generalized Baumslag-Solitar Groups*
- 10.00 - 11.00 **S.K. Sehgal:** *Group Rings and their Group of Units II*
- 11.00 - 11.30 Coffee break
- 11.30 - 11.55 **Y. Li:** *Reversible and Duo Group Rings*
- 12.00 - 12.25 **E. Spinelli:** *Minimal algebras with respect to their $*$ -exponent*
- 12.30 - 12.55 **E. Crestani:** *Monotone p -groups*

- 15.00 Trip

Thursday, June 11th

- 9.00 - 10.00 **J.S. Wilson:** *Profinite and Residually Finite Groups III*
- 10.00 - 11.00 **D.J.S. Robinson:** *Quotients of Generalized Baumslag-Solitar Groups*
- 11.00 - 11.30 Coffee break
- 11.30 - 11.55 **M. Patassini:** *On the (non) contractibility of the simplicial complex associated to the coset poset of a classical group*
- 12.00 - 12.25 **M. Avitabile:** *The structure of thin Lie algebras up to the second diamond*
- 12.30 - 12.55 **C. Sica:** *On groups admitting a fixed-point-free*

elementary 2-group of automorphisms

- 15.00 - 16.00 **E. Jespers:** *Groups and Set Theoretic Solutions of the Yang-Baxter equation*
- 16.00 - 17.00 **R. Schmidt:** *L_{10} -Free Groups*
- 17.00 - 17.30 Coffee break
- 17.30 - 17.55 **A. Erfanian:** *Some results on the probability of mutually commuting n -tuples and n -th nilpotency degree of groups*
- 18.00 - 18.25 **D. Lenzi:** *On some properties of nilpotent groups of class at most 2*
- 18.30 - 18.55 **F. Russo:** *On a generalization of the minimal non-nilpotent groups*

- Social dinner

Friday, June 12th

- 9.00 - 10.00 **S.K. Sehgal:** *Group Rings and their Group of Units III*
- 10.00 - 11.00 **S.E. Stonehewer:** *Quasinormal Subgroups of Finite p -Groups*
- 11.00 - 11.30 Coffee break
- 11.30 - 12.00 **H. Heineken:** *Fitting core and supersolvable groups*
- 12.00 - 13.00 **A. Giambruno:** *Polynomial Identities and Representations of the Symmetric Group*

Abstracts

Advances in Group Theory and Applications 2009

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Some results on the probability of mutually commuting n -tuples and n -th nilpotency degree of groups

A. Erfanian

Department of Mathematics, Ferdowsi University of Mashhad,
Mashhad, IRAN.

Let G be a finite group, then the probability that a randomly chosen pair of elements of G commutes is denoted to be the number of pairs $(x, y) \in G \times G$ with $xy = yx$ divided to $|G|^2$. Two usual ways to generalize this probability is to consider n -tuples $(x_1; x_2; \dots; x_n)$ of elements in group G with the property that $x_i x_j = x_j x_i$ for all $1 \leq i, j \leq n$ or $(n+1)$ -tuples $(x_1; x_2; \dots; x_{n+1})$ such that $[x_1; x_2; \dots; x_{n+1}] = 1$. We denote them by $\text{Pr}_n \text{Com}(G)$ and $d_{(n)}(G)$, and are called the probability of mutually commuting n -tuples and n -th nilpotency degree of G , respectively. In this talk, we will give some results concerning the above two probabilities and state some relations between these and the notion of the isoclinism. Furthermore, we give one more way of generalization of the probability for infinite groups at the end.