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UNIVERSITI TEKNOLOGI MALAYSIA

Department of Mathematics, Faculty of Science &
Ibnu Sina Institute for Fundamental Science Studies,
ESciNano Research Alliance

Book of Abstracts

Group Theory Seminar 01/09

Date   : 19 August 2009 (Wednesday)
Time   : 8.30 am – 1.00 pm
Venue   : Bilik Mesyuarat dan Persembahan Jabatan
                  Matematik (C22-310)

Organized by

Applied Algebra and Analysis Group (A³G),
Ibnu Sina Institute For Fundamental Science Studies,
Enabling Science and Nanotechnology (ESciNano) Research Alliance
(formerly known as Frontier Science Research Alliance)

3. Dr. Nor Muhainiah Mohd Ali

HOMOLOGICAL FUNCTORS OF INFINITE 2-GENERATOR GROUPS OF CLASS 2

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Abstract: *Let R be the class of infinite non-abelian 2-generator groups of nilpotency class 2. Using their classification and non-abelian tensor squares given by N.H. Sarmin in 2002, we determine certain homological functors in R such as the exterior square, the symmetric square and the Schur multiplier. GAP is used to first compute the homological functors for some specific groups in R, and then the functors are generalized.*

4. Dr. Ahmad Erfanian

ON THE PROBABILITY THAT TWO ELEMENTS COMMUTE IN SOME FINITE GROUPS

Assoc. Prof. Dr Ahmad Erfanian

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Abstract : Let G be a finite group. Then the commutativity degree of G which is denoted by d(G) is the probability that a randomly chosen pair of elements in a group G commutes. In this talk, I will give some upper and lower bounds for d(G) and the exact evaluation for some known groups. Furthermore, I will state some generalizations of commutativity degree to the relative commutativity degree, n-th nilpotency degree, relative n-th nilpotency degree and n-th commutativity degree. Some results and conjectures will be also given in this article.

5. Rohaidah Hj Masri

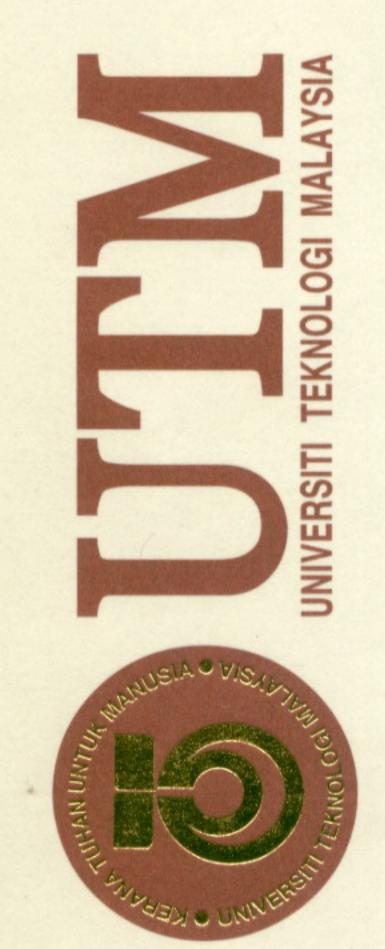**THE NONABELIAN TENSOR SQUARES OF CERTAIN BIERBEBACH GROUPS**

Rohaidah Hj Masri
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Abstract : The torsion free crystallographic groups are called Bieberbach groups. These groups are extensions of a finite point group and a free abelian group of finite rank. The rank of the free abelian group is the dimension of Bieberbach group. In this talk, the Bieberbach groups with the elementary abelian 2-groups as a point group are considered. These groups are metabelian and their nonabelian tensor squares are nilpotent of class at most 2. The necessary condition for any group such that the nonabelian tensor square is abelian are also presented. This is a joint work with Dr. Nor'aini Aris & Assoc Prof Dr Nor Haniza Sarmin from Universiti Teknologi Malaysia and Prof Dr. Robert F. Morse from University of Evansville, USA.

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CERTIFICATE OF APPRECIATION

This is to certify that

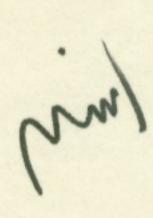## ASSOC. PROF. DR. AHMAD ERFANIAN

has delivered a talk in

GROUP THEORY SEMINAR 01/09

on 19 August 2009 at C22-310, UTM Skudai, Johor, Malaysia.

Jointly organized by

Applied Algebra and Analysis Group (A^3G), Ibnu Sina Institute for Fundamental Science Studies, Enabling Science and Nanotechnology (ESciNano) Research Alliance

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