

Atlantic Association for Research in the Mathematical Sciences (AARMS)
Memorial University of Newfoundland (MUN)
ATLANTIC ALGEBRA CENTRE (AAC)

International Workshop “Combinatorial Algebra”

June 1 – 4, 2013

Dalhousie University/Saint Mary’s University
Halifax, NS

REPORT

Overview

The aim of this Workshop was to discuss the current state of research in several interrelating areas of modern Combinatorial Algebra, with emphasis on the Combinatorics of Commutative Algebras, Groups and Hopf Algebras. The workshop was a satellite event to two special sessions of the Summer 2013 Meeting of Canadian Mathematical Society, which ran on June 4 – 7. These sessions were “*Commutative Algebra and Combinatorics*” organised by Jennifer Biermann (Lakehead), Sara Faridi (Dalhousie), Andrew Hoefel (Queen’s) and Adam Van Tuyl (Lakehead); “*Hopf Algebras and Tensor Categories*” organised by Yuri Bahturin (MUN), Margaret Beattie (Mount Allison), Mitja Mastnak (Saint Mary’s) and Bob Pare (Dalhousie).

The Workshop was organised by Atlantic Algebra Centre (Director Yuri Bahturin), affiliated to Memorial University of Newfoundland and supported as Collaborative Research Group by the Atlantic Association for Research in the Mathematical Sciences.

The Organising Committee consisted of AAC members

Margaret Beattie	(Mount Allison University)
Sara Faridi	(Dalhousie University)
Mikhail Kotchetov	(Memorial University)
Mitja Mastnak	(Saint Mary’s University)
Hamid Usefi	(Memorial University)

Speakers

The program of the workshop included a total of 23 lectures and longer research talks, as well as a number of shorter research communications. The list of invited lectures was as follows.

Marcello Aguiar	(Texas A&M University) “The antipode problem for Hopf monoids in the category of species” “Rings in categories with two monoidal structures”
Yuri Bahturin	(Memorial University) “Hopf Algebras and Graded Algebras” “Actions of free groups and algebras”
Matej Bresar	(University of Ljubljana & Maribor, Slovenia) “Functional identities” (2 lectures)
Giulio Caviglia	(Purdue University) “Generic initial ideals”
Vesselin Drensky	(Academician of Bulgarian Academy of Sciences) “Representation theory of symmetric and general linear groups” “Commutative and noncommutative classical invariant theory”
Jürgen Herzog	(University of Duisburg-Essen, Germany) “Acyclicity criteria for finite free resolutions and the lower bound conjecture for Betti-numbers” “Boij-Soderbeg theory with application to the multiplicity theorem”

As part of the workshop, an AAC Mini Course entiteled “Commutative Algebra” was organized by Sara Faridi. The speakers were Jürgen Herzog and Giulio Caviglia, with June 4th being entirely dedicated to the Mini Course.

A number of contributed talks have been given by other mathematicians, including undergraduate and graduate students as well as postdoctoral fellows affiliated to Atlantic Algebra Centre (a Collaborative Research Group of AARMS). We have invited the winners of the AAC Graduate Prizes 2012/2013 and the AAC Undergraduate Competition 2012.

Participants, dedicated sessions and sightseeing

The total number of participants was 46: 16 from Atlantic Canada, 11 from other provinces of Canada, 19 from other countries.

One session on June 2 was dedicated to the work of Professor Tony Geramita from Queens Univesity and one on June 3 to Professor Luzius Grunenfelder, a retired Dalhousie Professor (now at UBC).

On June 4 the participants attended tours of Peggy’s Cove.

Additional information and files of some talks and lectures can be found on the web site of Atlantic Algebra Centre at <http://www.mun.ca/aac/Workshops/PastWork/CA13>.

Breakdown of expenses and revenues

1. Expenses

(a) Airfare and per diem allowance for the invited speakers (some speakers agreed to use their grants)	\$ 8,704.59
(b) Hotel accommodation for some speakers	\$ 4,417.62
(c) Support for 13 students/postdocs	\$ 5,400.00

(d) Registration packages (Printing brochures, stationery, etc.) \$ 142.49

(d) Coffee breaks, hosting for invited speakers and students (paid from registration fees) \$ 1,900

(h) **Total of expenses** **\$ 20,564.7**

2. Revenues

(a) Registration fees \$1,900

(b) AARMS support \$3,500

(c) Dalhousie University \$4,500

(d) AAC budget \$ 10,664.7

(e) **Total of revenues** **\$ 20,564.7**

3. Revenues minus Expenses - Nil

We would like to express our sincere gratitude to the Departments of Mathematics and Statistics of Dalhousie, Memorial and Saint Mary's Universities for their support.

Yuri Bahturin, Director
Atlantic Algebra Centre
August 8, 2013