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Title: Lie Theory Workshop: Geometry and Lie Theory

Event Type: Conference-Workshop

Location:

University of Alberta, Edmonton, Canada

Dates:

Saturday, May 16 and Sunday, May 17, 2015

Topic:

Lie Groups, Lie Algebras and their Applications. The emphasis of the meeting in Alberta was on geometric methods in Lie theory.

Methodology:

The purpose of the workshop program is to communicate results and ideas rather than to deliver polished presentations.

Objectives Achieved:

The program serves to acquaint graduate students in this area with a range of researchers in Lie theory and representation theory.

Scientific Highlights:

Geoffrey Mason and Thomas Creutzig started to discuss new ideas on vertex algebras over rings and also on geometric aspects of the Mathieu moonshine. Mathieu moonshine is a novel subject trying to understand relations between automorphic forms, sporadic groups, geometry and physics. It might be related to a possible appearance of various $N=4$ superconformal structures inside certain lattice vertex super algebras. These then come automatically with interesting automorphism groups and associated modular forms. Over the last month and together with Professor Gaywalee Yamskulna, they have interchanged ideas on this problem.

Geoffrey Mason and I discussed the use of Galois cohomology to study vertex algebras over rings. Thomas Creutzig and I have also discussed this (very powerful) method.

It is conceivable, even likely, that papers will come out from the above. Creutzig is a young mathematician. I think it is fair to say that these discussion will have an impact on his scientific career.

Organizers:

Gannon, Terry (Mathematical and Statistical Sciences, University of Alberta)
Pianzola, Arturo (Mathematical and Statistical Sciences, University of Alberta)

Speakers:

The list of speakers included Kai Behrend (UBC), Jon Brundan (Oregon), Thomas Creutzig (Alberta), David Evans (Cardiff), Johanna Hennig (UCSD) and Johannes Walcher (McGill). Shashank Kanade (Rutgers) was scheduled to speak but was not get his visa on time to come. Geoff Mason (UC Santa Cruz) spoke instead.

Links:

<https://sites.google.com/site/lietheory/home>
