

Memorial University of Newfoundland
Atlantic Algebra Centre

February 20 - 22, 2014

AAC Mini Course

Representation theory of Lie algebra
of vector fields on a torus

will be delivered by



Professor Yuly Billig

School of Mathematics and Statistics
Carleton University, Ottawa

ABSTRACT OF THE MINI COURSE

In this mini-course we will discuss the classification of simple weight modules for the Lie algebra of vector fields on a torus. We will begin with the elementary constructions of representations of a geometric nature - modules of tensor fields on a torus. We will discuss the question of irreducibility of these modules and the exceptional nature of the modules in the de Rham complex. The second family of irreducible modules that we introduce will be the class of bounded modules. We will present their vertex operator realizations and explain the construction of the chiral de Rham complex. Finally, we will discuss the proof of the classification theorem for the irreducible weight modules for the Lie algebra of vector fields on a torus.

SCHEDULE

Thursday, February 20, 2014, 3 pm - 4:30 pm room C-2033

Friday, February 21, 2014, 3 pm - 4:30 pm room SN-2041

Saturday, February 22, 2014, 11 pm - 12:30 pm room HH-3017