

CALENDAR		
Tuesday, February 8	Seminar on Random Matrices and Free Probability Time: 4:30 p.m. – 6:00 p.m. Place: Jeffery 101	Speaker: Noriyoshi Sakuma, Keio University Title: A new limit theorem related to free multiplicative convolution Abstract Attached
Wednesday, February 9	Curves Seminar Time: 4:00 p.m. – 5:30 p.m. Place: Jeffery 319	Does not meet this week due to departmental meeting
Wednesday, February 9	Department Meeting Time: 3:30 p.m. Place: Jeffery 234	Agenda has been circulated.
Thursday, February 10	Math Club Time: 5:30 p.m. – 6:30 p.m. Place: Jeffery 118	Speaker: Ivan Dimitrov Title: When is 50/50 really 50/50 Abstract Attached
Friday, February 11	Number Theory Seminar Time: 11:30 a.m. – 12:20 p.m. Place: Jeffery 422	Speaker: Hester Graves, Queen's University Title: The Artin Map and Ray Class Fields Abstract Attached
Friday, February 11	Department Colloquium Time: 2:30 p.m. – 3:30 p.m. Place: Jeffery 234	Speaker: Gregory G. Smith, Queen's University Title: New and old perspectives an Hilbert functions Abstract Attached
Monday, February 14	Algebraic Geometry Seminar Time: 4:30 p.m. – 5:30 p.m. Place: Jeffery 319	Speaker: Mark Colarusso, Université Laval Title: Linear and nonlinear Gelfand-Zeitlin integrable systems Abstract Attached

Items for the Info Sheet should reach Anne (burnsa@mast.queensu.ca) by noon on Monday. The Info Sheet is published every Tuesday.

Tuesday, February 8, 4:30 p.m. Jeffery 101
Seminar on Random Matrices and Free Probability

Speaker: Noriyoshi Sakuma

Title: A new limit theorem related to free multiplicative convolution

Abstract: Let \boxplus , \boxtimes and \cup be the free additive, free multiplicative, and boolean additive convolutions. For a probability measure μ on \mathbb{R}^+ with second moment, we find a scaling limit of $(\mu^{\boxtimes N})^{\boxplus N}$ as N goes to infinity. The R -transform of the limit distribution can be represented by the Lambert's W function and the distribution is a free compound distribution. We also find similar limit theorem by replacing the free additive convolution by the Boolean convolution. This talk is based on joint work with Hiroaki Yoshida of Ochanomizu University.

Thursday, February 10, 5:30 p.m. Jeffery 118

Math Club

Speaker: Ivan Dimitrov

Title: When is 50/50 really 50/50

Abstract: Our intuition about probability is usually not very good. One common source of confusion is assigning the correct probabilities to several "seemingly likely" outcomes.

Come and match your wits with several probabilistic puzzles. (Your chances of getting them right must be 50/50, no?)

Friday, February 11, 11:30 a.m. Jeffery 422

Number Theory Seminar

Speaker: Hester Graves

Title: The Artin Map and Ray Class Fields

Abstract: This is a practical introduction to the notion of the Artin map.

Friday, February 11, 2:30 p.m. Jeffery 234

Department Colloquium

Speaker: Gregory G. Smith

Title: New and old perspectives on Hilbert functions

Abstract: Hilbert functions are fundamental invariants in commutative algebra and algebraic geometry. After recalling the basic definitions and motivating examples, we will discuss Macaulay's characterization for the collection of all Hilbert functions. We'll then contrast this with a newer viewpoint and look at potential applications.

Monday, February 14, 4:30 p.m. Jeffery 319

Algebraic Geometry Seminar

Speaker: Mark Colarusso

Title: Linear and nonlinear Gelfand-Zeitlin integrable systems

Abstract: In the 1950's, Gelfand and Zeitlin produced a basis for finite dimensional highest weight representations for certain classical groups. Thirty years later, Guillemin and Sternberg produced an integrable system (i.e. maximal Poisson commuting family) on conjugacy classes of Hermitian matrices that is related to the Gelfand-Zeitlin basis for the unitary group via geometric quantization. In 2006, Kostant and Wallach developed a complexified version of the Gelfand-Zeitlin integrable system on the full Lie algebra of n -by- n complex matrices, $\mathfrak{gl}(n)$.

The Gelfand-Zeitlin system on $\mathfrak{gl}(n)$ integrates to a holomorphic action of a group A on $\mathfrak{gl}(n)$. The group A is isomorphic to $\mathbb{C}^{n(n-1)/2}$ and its orbits of dimension $n(n-1)/2$ are Lagrangian submanifolds of regular adjoint orbits. In this talk, we describe the orbit structure of the group A and discuss the algebraic integrability of the Gelfand-Zeitlin system. We will also discuss the construction of a nonlinear version of the Gelfand-Zeitlin system for the dual Poisson Lie group $GL(n)^*$.