



INFO SHEET

August 30, 2011

QUEEN'S UNIVERSITY AT KINGSTON
Department of Mathematics and Statistics
<http://www.mast.queensu.ca>

CALENDAR		
Tuesday, August 30	Conference Room Time: 1:00 p.m. Place: Jeffery 521	Ph.D. Oral Student: Emily Redelmeier Title: Real Second-Order Freeness and Fluctuations of Random Matrices Supervisor: J. A. Mingo
Wednesday, August 31	Summer Number Theory Time: 3:00 p.m. – 4:00 p.m. Place: Jeffery 422	Speaker: Junho Peter Whang, Queen's University Title: Representations of $U(n)$ and the uncertainty principle for finite cyclic groups Abstract Attached
Friday, September 9	Conference Room Time: 10:30 a.m. Place: Jeffery 521	Ph.D. Oral Student: Daniel Cownden Title: Evolutionarily stable learning and foraging strategies Supervisor: P. D. Taylor
Thursday, September 15	Conference Room Time: 10:30 a.m. Place: Jeffery 521	Ph.D. Student: Karla Fox Title: A Framework for the Meta-Analysis of Survey Data Supervisors: T. Day & D. Steinsaltz
Monday, September 19	Conference Room Time: 9:30 a.m. Place: Jeffery 521	Ph.D. Student: Shifang Liu Title: Statistical Methods for Testing Treatment-Covariate Interactions in Cancer Clinical Trials Supervisor: D. Tu

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

Wednesday, August 31, 3:00 p.m. Jeffery 422

Summer Number Theory Seminar

Speaker: Junho Peter Whang

Title: Representations of $U(n)$ and the uncertainty principle for finite cyclic groups

Abstract: Let f be a nonzero complex-valued function on a finite cyclic group G with discrete Fourier transform \hat{f} . Using a theorem of Chebotarev on primitive roots of unity, Tao (2003) showed that if G has prime order then $|\text{supp}(f)| + |\text{supp}(\hat{f})| \geq |G| + 1$ improving on the classical uncertainty principle $|\text{supp}(f)| |\text{supp}(\hat{f})| \geq |G|$. In this talk, I will describe a new proof of Chebotarev's theorem using the representation theory of compact Lie groups. This approach allows us to easily obtain analogues of Chebotarev's and Tao's theorems for composite moduli cases.

This talk is based on joint work with M. Ram Murty conducted this summer as part of my NSERC USRA Award.