

MATHEMATICS DEPARTMENT SEMINAR SCHEDULE

September 23 – September 27, 2002

All seminars are held in Boyd Graduate Studies unless otherwise noted

MONDAY, September 23, 2002

Group Representation & Cohomology

2:30pm, Room 410

Speaker: Graham Matthews, University of Georgia

Title of talk: *"On the Indecomposable Representations of a Finite Group", by J.A. Green, continued*

Topology

2:30p.m. Room 326

Speaker: Aaron Abrams, University of Georgia

Title of talk: *"More on left-orderability and topology"*

Faculty and Graduate Social

3:00 p.m., Room 409

Coffee, Tea, Cookies

Analysis

3:30pm, Room 222

Speaker: Akos Magyar, University of Georgia

Title of talk: *"On the distribution of lattice points on surfaces defined by polynomials"*

Abstract: In the first talk we discuss an extension of the so-called circle method to describe the Fourier transform of the characteristic function of solution sets to diophantine equations in many variables.

Next, we use it to prove equidistribution results in terms of the cap discrepancy, and consider the special case of spheres and k-spheres.

Cats

4:00 pm, Plant Sciences, 2401

CATS participants are encouraged to attend the seminar noted below in Plant Sciences at 4:00 PM. Since it would conflict with the normal CATS time, we are postponing the talk by Jianping Zhu until Sept. 30, and there will be no CATS today.

Bioinformatics-related Seminar:

Speaker: Russell Malmberg

Affiliation: Plant Biology, UGA

Title: A Stochastic Grammar System to Model RNA Pseudoknot Structures, work done in collaboration with Liming Cai

TUESDAY, September 24, 2002

VIGRE

2:00 p.m-3:15 p.m., Room 304

Speaker: Ralph Howard, South Carolina State

Title of talk: "*Affine geometry of convex sets in the plane*"

Abstract: We define some of the basic special affine invariants (that is functions of convex sets that are invariant under area preserving affine maps) of planar convex sets, such as affine arclength and give some of the important facts about them such as the affine isoperimetric inequality and Ludwig's characterization linear combinations of Euler characteristic, area, and affine perimeter as the only lower semi-continuous affinely invariant valuations. As one application we discuss best approximation of convex figures by polygons.

Algebraic Geometry

3:30 p.m., Room 326

Speaker: Elham Izadi, University of Georgia

Title of talk: "*Curves in abelian varieties and deformation theory*". cont.

Abstract: We will be discussing some special cases in the problem of existence of curves in abelian varieties.

Student Number Theory

3:30 p.m., Room 303

Speaker: Paulo Almeida, University of Georgia

Title of talk: "*Binomial Coefficients*"

WEDNESDAY, September 25, 2002

Wavelet Analysis

10:10 – 11:00 a.m., Room 410

Speaker: Kyunglim Nam, University of Georgia

Title of talk: "*Compactly Supported Tight and Sibling Frames with Maximum Vanishing Moments*"

Abstract: By introducing the notion of Vanishing-Moment Recovery(VMR) Function, we want to construct two compactly supported tight frame generators with maximal order of vanishing moments. And we will construct both maximum order of vanishing moments and symmetry (or anti-symmetry) frames by sibling non-tight frames.

Graduate Teaching Seminar

2:30 p.m., Room 303

Speaker: Tanya Cofer and Clint McCrory, University of Georgia**Title of talk:** *"How do you teach MATH 1113?"***Faculty and Graduate Social**

3:00 p.m., Room 409

Coffee, Tea, Cookies

Lie Theory

3:30 p.m., Room 302

Speaker: TBA**Title of talk:** *"TBA"***Number Theory**

3:30 p.m., Room 304

Speaker: Robert Rumely, University of Georgia**Title of talk:** *"The Scholz-Reichardt theorem," continued***Numerical Analysis**

3:30pm, Room 410

Speaker: Gerard Awanou, University of Georgia**Title of talk:** *"Convergence rate of the augmented lagrangian algorithm for nonsymmetric saddle point problems", joint work with Ming-Jun Lai*

Abstract

We are interested in solving

$$\begin{pmatrix} A & L^T \\ L & 0 \end{pmatrix} \begin{pmatrix} c \\ \lambda \end{pmatrix} = \begin{bmatrix} F \\ G \end{bmatrix}.$$

by the augmented lagrangian algorithm. Here A is a (n, n) matrix, $c, F \in \mathbf{R}^n$, L is a (m, n) matrix, and $\lambda, G \in \mathbf{R}^m$. We also assume that A is invertible on the kernel of B . Convergence rates of the algorithm are known in the symmetric case but the proofs used spectral arguments and cannot be extended to the nonsymmetric case. I will give a rate of convergence in the nonsymmetric case and discuss the choice of the parameters for optimal rate of convergence. Finally I will discuss how to put this algorithm in the framework of space decomposition and subspace correction as discussed by Dr Lai in previous lectures.

FRIDAY, September 27, 2002

Geometry

2:30 p.m., Room 322

Speaker: Nancy Wrinkle, University of Georgia

Title of talk: "*The simple clasp*"

Abstract: I will discuss what is known now of the ropelength critical configuration of the simple clasp. This is work in progress with Jason Cantarella, Joe Fu, John Sullivan and Rob Kusner.