

MATHEMATICS DEPARTMENT SEMINAR SCHEDULE
September 9 – September 13, 2002

All seminars are held in Boyd Graduate Studies unless otherwise noted

MONDAY, September 9, 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”*

Topology

2:30 p.m., Room 326

Speaker: Gordana Matic, University of Georgia

Title of talk: *An introduction to Ozsvath-Szabo invariants of 3-manifolds, continued*

Faculty and Graduate Social

3:00 p.m., Room 409

Coffee, Tea, Cookies

Numerical Analysis

3:30 p.m., Room 410

No Meeting today. Please see Wednesday, Sept. 11, 2002

Analysis

3:30 p.m., Room 222

No Meeting today. Please see Tuesday, Sept. 10, 2002

Cats

4:40 p.m., Room 306

Speaker: Aaron Windsor, Graduate Student, Computer Science Dept.

Title of talk: *“Maximal Independent Sets in Hypergraphs”*

Abstract: A hypergraph is a generalization of a graph where arbitrarily many vertices may appear in a single edge. A maximal independent set (MIS) in a hypergraph is a subset of the vertex set that doesn't induce any edges and cannot be enlarged by adding more vertices. There's a simple greedy algorithm for this problem that's sequential in nature, but it is a difficult algorithm to parallelize efficiently. We'll discuss some recent work on this problem regarding hypergraphs with given degree bounds on the vertices.

TUESDAY, September 10, 2002

VIGRE

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

Speaker: Matthew Baker, University of Georgia

Title of talk: “*April Fools, Elliptic Curves, and Complex Multiplication*”

Abstract: In the April 1975 issue of Scientific American, Martin Gardner wrote that a mathematician at University of Arizona had proved that $\exp(\pi\sqrt{163})$ is an integer. The article was a hoax, but in fact this number is surprisingly close to an integer (check it out for yourself!), and there is a good theoretical reason why this should be so. In the course of explaining this last assertion, we will touch on some of the most important topics in modern number theory, including elliptic curves, modular functions, complex multiplication, and class numbers.

Algebraic Geometry

3:30 p.m., Room 326

Speaker: Ivan Cheltsov, University of Georgia

Title of talk: “*Birationally rigid hypersurfaces*”, Part II

Abstract: In the second part of my talk “Birationality rigid hypersurfaces” about the recent paper of Alexander Pukhlikov (<http://front.math.ucdavis.edu/math.AG/0201302>) I will explain the proof of its main technical result - points on hypersurface X of degree N in N -dimensional projective space could not be centers of canonical singularities of any “movable” log pairs on X with numerically trivial log canonical divisor. I will briefly remind why this result implies the birational rigidity of X (the best written source about the link between the birational rigidity and singularities of “movable” log pair (variety and linear system multiplied by some positive rational number) is http://www.maths.warwick.ac.uk/~miles/Unpub/CPR_book/Corti.ps.Student

Student Number Theory

3:30 p.m., Room 303

Speaker: Xander Faber, University of Georgia

Title of talk: *A topic near and dear to my heart ... one of the holy grails of number theory.*

Abstract: I don't want to give away the secret, but this will be a talk accessible to any graduate student who has seen modular arithmetic at some point (manipulating congruences).

Analysis

3:30 p.m., Room 222

Speaker: Jim Solazzo, University of Georgia

Title of talk: *"Hankel Operators, Reflexivity, and Factorization"*

Abstract: This will be a series of two talks, discussing the joint work of E. Azoff, R. Martinez, and J. Solazzo. The first talk will be given by Jim Solazzo and the second talk will be given by Ed Azoff. In these talks we will give necessary and sufficient conditions in order for a hyperspace of Hankel operators to be reflexive. These conditions are determined by considering factorizations of the particular function which determines the hyperspace. In the first talk we will discuss the necessary background to follow the talks and our results in the finite-dimensional setting. The second talk will focus on our results in the infinite-dimensional setting.

WEDNESDAY, September 11, 2002**Wavelet Analysis**

10:10 – 11:00 a.m., Room 410

Speaker: Haipeng Liu, University of Georgia

Title of talk: *"Biorthogonal Wavelets in Sobolev Spaces"*

Abstract: We finally summarize up the discussions on biorthogonal wavelets in Sobolev spaces.

Graduate Teaching Seminar

2:30 p.m., Room 303

Speaker: Sybilla Beckmann-Kazez, University of Georgia

Title of talk: *"Writing on Teaching"*

Faculty and Graduate Social

3:00 p.m., Room 409

Coffee, Tea, Cookies

Lie Theory

3:30 p.m., Room 302

Speaker: Bill Graham, University of Georgia

Title of talk: *"A lookup conjecture for rational smoothness"*

Abstract: Determining which points of a Schubert variety are rationally smooth (i.e., points at which the Schubert variety is a rational homology manifold) is important in representation theory. Although methods exist for determining whether a point is rationally smooth, they are combinatorially complicated. In this talk (which is on joint work with Brian Boe) I will discuss a conjecture which would greatly simplify testing for rational smoothness, along with proofs in special cases.

Number Theory

3:30 p.m., Room 304

Speaker: Dino Lorenzini, University of Georgia

Title of talk: *“Reduction of Curves of Genus 1”*

Numerical Analysis

3:30pm, Room 410

Speaker: Ming-Jun Lai, University of Georgia

Title of talk: *“Iterative Methods by Subspace Correction”*

FRIDAY, September 13, 2002**Geometry**

2:30 p.m., Room 322

Speaker: Nancy Wrinkle, University of Georgia

Title of talk: *“The simple clasp”*

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