

MATHEMATICS DEPARTMENT SEMINAR SCHEDULE

September 16 – September 20, 2002

All seminars are held in Boyd Graduate Studies unless otherwise noted

MONDAY, September 16, 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

2:15p.m. Room 326

Speaker: Will Kazez, University of Georgia

Title of talk: *3-manifold group actions*

Abstract: I'll give a quick summary of some of the group theoretic consequences of various structures on 3-manifolds, such as hyperbolic structures, foliations, laminations, splittings, and then discuss the relationship with order trees, non-hausdorff 1-manifolds, universal circles, left orderable groups, and group negative curvature. The talk will feature work of Calegari-Dunfield.

Faculty and Graduate Social

3:00 p.m., Room 409

Coffee, Tea, Cookies

Cats

3:30 p.m., Room 328

Speaker: Brendan McKay, Professor of Computer Science, Australian National University

Title of talk: *“Computer Generation of Planar Graphs”*

Abstract: Much work has been done on the problem of listing all the structures in some class of structures, such as all the graphs of a given type and size. The basic approach is to apply some recursive constructor which produces most of the structures by somehow augmenting smaller structures. For example, the operation of adding one edge makes it possible to reach any graph by starting with the graph having no edges. The difficulty to be overcome in an extensive computation of this type is to avoid listing each structure more than once (defined according to some notion of equivalence, such as graph isomorphism). Several techniques are known that achieve this goal using only a small amount of memory, of which one called "generation by canonical construction path" is perhaps the most general. We will explain this method with reference to several problems of generating classes of planar graphs. One class is the triangulations with minimum degree 5 (joint work with Gunnar Brinkmann) and another is planar quadrangulations (joint work with Gunnar Brinkmann, Sam Greenberg, Catherine Greenhill, Robin Thomas and Paul Wollan).

TUESDAY, September 17, 2002

VIGRE

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

Speaker: David Penniston, Furman University

Title of talk: “*Local zeta functions*”

Abstract: Given a projective variety defined over the rational numbers, a central problem in number theory is to write down its local zeta function at each prime p , the philosophy being that this local data (modulo p) should yield information about the variety globally (over the rational numbers). For example, in the case of elliptic curves, the celebrated Birch and Swinnerton-Dyer Conjecture makes very specific predictions about what this local information implies. In this talk we will discuss local zeta functions in some generality, and also look at some specific examples involving various curves and surfaces.

Algebraic Geometry

3:30 p.m., Room 326

Speaker: Elham Izadi, University of Georgia

Title of talk: “*Curves in abelian varieties and deformation theory*”

Abstract: We will discuss the problem of existence of curves in abelian varieties and the use of deformation theoretic methods for producing them.

Student Number Theory

3:30 p.m., Room 303

Speaker: Jim Blair, University of Georgia

Title of talk: “*Pondering graph theory*”

WEDNESDAY, September 18, 2002

Wavelet Analysis

10:10 – 11:00 a.m., Room 410

Speaker: Kyunglim Nam, University of Georgia

Title of talk: “*Construction of Tight Frames*”

Graduate Teaching Seminar

2:30 p.m., Room 303

No Meeting this week

Faculty and Graduate Social

3:00 p.m., Room 409

Coffee, Tea, Cookies

Lie Theory

3:30 p.m., Room 302

Speaker: Dave Hemmer, University of Georgia

Title of talk: "An introduction to the James conjecture for $GL(n)$ "

Number Theory

3:30 p.m., Room 304

Speaker: Robert Rumely, University of Georgia

Title of talk: "The Scholz-Reichardt theorem"

Abstract: Given a finite group G , the "Inverse Galois Problem" asks whether G occurs as the Galois group of a finite extension K/Q (or more generally, as the Galois group of a finite extension K/F , for any prescribed field F .)

In the Number Theory seminar this week I will discuss a theorem of Scholz and Reichardt, which says that if p is an odd prime, then every finite p -group occurs as a Galois group over Q . This is a special case of a famous theorem of Shafarevich, which asserts that every finite solvable group occurs as a Galois group over Q .

Numerical Analysis

3:30pm, Room 410

Speaker: Ming-Jun Lai, University of Georgia

Title of talk: "Iterative Methods by Subspace Correction", continued

THURSDAY, September 19, 2002

Analysis

3:30 p.m., Room 222

Speaker: Ed Azoff, University of Georgia

Title of talk: "Hankel Operators, Reflexivity, and Factorization, Part 2"

Abstract: This is the second in a series of two talks, discussing joint work of E. Azoff, R. Martinez, and J. Solazzo. The first talk was given by Jim Solazzo. Sufficient background will be provided to make the present talk accessible to those who (shamefully) missed last week's presentation.

Let u belong to the Hardy space H^1 . The present talk will examine the relationship between (1) structure of the canonical inner factor of u , (2) richness of the class of all H^2 factorizations of u , and (3) reflexivity of the hyperspace C_u of Hankel operators naturally associated with u .

FRIDAY, September 20, 2002

Geometry

2:30 p.m., Room 322

Speaker: Markus Hunziker, University of Georgia

Title of talk: “*Quantum Computing and Geometry*”

Abstract: In this talk I will give an introduction to quantum computing from a very geometric perspective. Some of the presented topics are related to a research project with Mitch Rothstein (UGA) and David Meyer (UC San Diego).