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Mathematics and Statistics

**Seminars & Colloquium**

**August 30 – September 3**

**Colloquium: There is no colloquium this week.**

**Monday – August 30**

**GK-12 seminar**

**Time: 4:00-4:50pm**

**Room: MATH 115**

Speaker: Dr. Dominick Casadonte

**Tuesday – August 31**

**Wednesday – September 1**

**Analysis Seminar**

**Time: 4:00-5:00 pm.**

**Room: MATH 114**

Our seminar covers a variety of topics from Complex Analysis,

Conformal and Quasiconformal mappings, Potential Theory, Real Analysis,

Theoretical Physics related to Complex Analysis,

and qualitative properties of PDE’s.

The main topic  for the Fall Semester 2010 will be:

**“Conformally Invariant Processes in the Plane”**

which is also the title of a resent monograph by Gregory F. Lawler.  In particular, we plan to discuss several chapters of his book.

I want also mention here that Stanislav Smirnov, who is one of the key players in this area,

is one of the four brand new recipients of Fields Medals at ICM 2010 in Hyderabad.

**Thursday – September 2**

**Friday – September 3**

**Algebra Seminar**

**Time: 3:00–4:00 pm**

**Room: MATH 016**

Brian Miller "Groebner Bases in Symbolic Integration" Part I of two talks.

Abstract. The problem of integration in finite terms is to decide in a finite number of steps whether a given integrand has an elementary integral, and if it exists, compute it. Although there is a complete algorithmic solution to the problem, methods for computing the integral are still being studied. In fact, all of the current computer algebra systems contain only a partial implementation of the so-called Risch algorithm. In recent work, Czichowski has shown that the logarithmic part of a rational function in Q(x) may be computed by a Groebner Basis. We give a brief overview of the problem of integration in finite terms, methods in symbolic integration, and show that Czichowski's result can be extended to arbitrary monomials over an arbitrary differential field.