Algebra Seminar

Prehomogeneous vector spaces and their zeta functions

Frank Thorne
University of South Carolina

Abstract: Last year, I spoke about my work with Takashi Taniguchi in estimating the number of cubic fields of bounded discriminant. Our work related on the Shintani zeta functions associated to the space of binary cubic forms.

My previous talk (and to a lesser extent, my paper with Takashi) used these zeta functions essentially as a black box. In this talk I will discuss the zeta functions themselves. I have proved a couple of results about them which I will mention. However, the main focus of my talk will be the underlying theory as developed by Sato, Shintani, and others. I will explain what prehomogeneous vector spaces are and why zeta functions can be associated to them. I will also describe some interesting open questions about these zeta functions – resolutions of which would lead to new results about quartic and quintic fields.

Friday, January 20, 2012, 3:00 pm
Mathematics and Science Center: E408

Mathematics and Computer Science
Emory University