

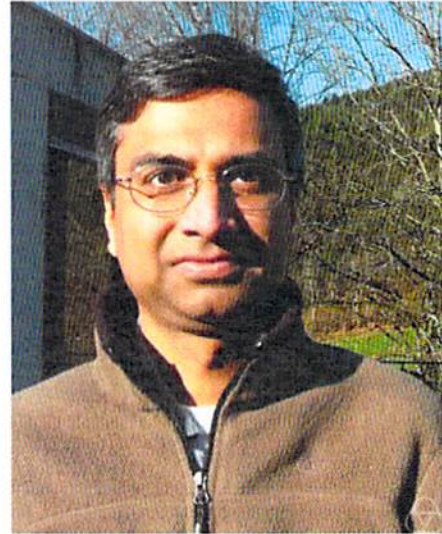
LOGIC SEMINAR

Guest Speaker: Saugata Basu
Purdue University

Date: Tuesday, February 14, 2017

Time: 2:00 PM

Location: 125 Hayes-Healy Hall



Lecture Title:
An o-minimal Szemerédi-Trotter theorem

Abstract

The Szemerédi-Trotter theorem on incidences between lines and points in \mathbb{R}^2 is one of the first non-trivial results in quantitative incidence theory and is considered a foundational result in discrete geometry and extremal combinatorics. We prove an analog of the Szemerédi-Trotter theorem in the plane for definable curves and points in any o-minimal structure over an arbitrary real closed field R . The main tool is an extension of the well known crossing number inequality for graphs to the case of embeddings in any o-minimal structure over an arbitrary real closed field. Though stronger results have been obtained independently by Chernikov, Galvin and Starchenko (2016) our proof is different and could be of independent interest. (Joint work with O. Raz).