



The rising STAR of Texas

Discrete Mathematics Seminar

Time: Friday, April 22, 2016, 11:00 AM --12:00 Noon
Room: 336 Derrick Hall
Title: Grassmanian (or anti-commuting) variables, Grassmann-Berezin integrals and applications to discrete mathematics
Speaker: Dr. Adrian Tanasa, Combinatorics Group, Bordeaux University, France

Abstract:

In this talk I will introduce Grassmann (or anti-commuting) variables and the axioms of Grassmann-Berezin calculus. I will then show how we can use these mathematical physics tools to express Pfaffians and determinants and to derive various non-trivial identities in discrete mathematics (deletion/contraction relation for graph polynomials, Gessel-Viennot formula etc.).

Bio:

A. Tanasa is a Professor in the Combinatorics group at the University of Bordeaux and a junior member of Institut Universitaire de France. He studied at École Normale Supérieure Lyon and after a PhD in mathematics at the University of Haute Alsace and the University of Strasbourg, he was granted a CNRS post-doc grant in Orsay. He then continued as a visiting scientist at the Max Planck Institute in Bonn, at IHES and then as a post-doc at Ecole Polytechnique. Between 2010 and 2015 he was an Associate Professor at Univ. Paris XIII, Sorbonne Paris Cite. A. Tanasa is currently working on Combinatorial Physics, or more precisely, on the investigation of the role played by different combinatorial structures in various models of quantum field theory and quantum gravity.

<http://www.labri.fr/perso/atanasa/>