



Centre Interfacultaire Bernoulli (CIB)



Friday, May 2nd, 2008 from 3 PM to 5 PM

In room AAC 006

To be followed by discussion

“On double Hurwitz Numbers in Genus 0”

*Based on joint work with Sergei Shadrin (Zurich) and
Michael Shapiro (East Lansing)*

Alexander Vainshtein

(Haifa)

Abstract :

We study double Hurwitz numbers in genus zero counting the number of covers $\mathbb{CP}^1 \rightarrow \mathbb{CP}^1$ with two branching points with a given branching behavior. By the recent result due to Goulden, Jackson and Vakil, these numbers are piecewise polynomials in the multiplicities of the preimages of the branching points. We describe the partition of the parameter space into polynomiality domains, called chambers, and provide an expression for the difference of two such polynomials for two neighboring chambers. Besides, we provide an explicit formula for the polynomial in a certain chamber called totally negative, which enables us to calculate double Hurwitz numbers in any given chamber as the polynomial for the totally negative chamber plus the sum of the differences between the neighboring polynomials along a path connecting the totally negative chamber with the given one.