11th ALGA Meeting

Maresias, São Paulo, from 10/16 to 10/22.

Speaker: Erwan Brugallé (Paris 6, France/IMPA, Brazil)

Title: On the approximation of curves in tropical surfaces

Abstract: One of the main issue in tropical geometry is to understand its relation with classical algebraic geometry. In this talk, after having introduced the required notions, I will discuss the following problem (sometimes called the tropical lifting problem): given a nonsingular tropical surface S and a tropical curve C in S, does there exist a family of complex surfaces (S_t) and a family of complex curves (C_t) such that
1. C_t is contained in S_t
2. Trop(S_t)=S
3. Trop(C_t)=C.

In this talk, I will give some combinatorial local obstructions to the existence of such a family (C_t), based on the relation between tropical and classical intersection theories. For example, one of these obstructions can be obtained via the classical adjunction formula.