



Mathematics and CS Seminar

Uniform Lipschitz functions on the triangular lattice have logarithmic variations

Ioan Manolescu (University of Fribourg)

Host: M. Beiglböck, N. Berestycki, L. Erdős, J. Maas

Uniform integer-valued Lipschitz functions on a finite domain of the triangular lattice are shown to have variations of logarithmic order in the radius of the domain.

The level lines of such functions form a loop $O(2)$ model on the edges of the hexagonal lattice with edge-weight one. An infinite-volume Gibbs measure for the loop $O(2)$ model is constructed as a thermodynamic limit and is shown to be unique. It contains only finite loops and has properties indicative of scale-invariance: macroscopic loops appearing at every scale. The existence of the infinite-volume measure carries over to height functions pinned at 0; the uniqueness of the Gibbs measure does not.

The proof is based on a representation of the loop $O(2)$ model via a pair of spin configurations that are shown to satisfy the FKG inequality. We prove RSW-type estimates for a certain connectivity notion in the aforementioned spin model.

Based on joint work with Alexander Glazman.

Tuesday, March 12, 2019 04:30pm - 05:30pm

IST Austria Campus Uni Wien, HS 11, 2. OG, OMP 1



This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: <https://ist.ac.at/en/campus/how-to-get-here/> The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.