

Marie Albenque

Title: Study of the sign clusters in the Infinite Ising-weighted triangulations

In this talk, I will present recent results, obtained in collaboration with Laurent Ménard, about the geometry of spin clusters in Ising-decorated triangulations, and build on previously work obtained in collaboration with Laurent Ménard and Gilles Schaeffer.

In this model, triangulations are sampled together with a spin configuration on their vertices, with a probability biased by their number of monochromatic edges, via a parameter ν . The fact that there exists a combinatorial critical value for this model has been initially established in the physics literature by Kazakov and was rederived by combinatorial methods by Bousquet-Mélou and Schaeffer, and Bouttier, Di Francesco and Guitter.

Here, we give geometric evidence of that this model undergoes a phase transition by studying the volume and perimeter of its monochromatic clusters. In particular, we establish that, when ν is critical or subcritical, the cluster of the root is finite almost surely, and is infinite with positive probability for ν supercritical.