

The discrete membrane model on trees

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Abstract

The discrete membrane model (MM) is a random interface model for separating surfaces that tend to preserve curvature. It is a close relative of the discrete Gaussian free field (DGFF), for which instead the most likely interfaces are those preserving the mean height. However working with the two models presents some key differences. In particular, a lot of tools (electrical networks, random walk representation of the covariance) are available for the DGFF and lack in the MM. In this talk we will investigate a random walk representation for the covariances of the MM and by means of it we will define and study the MM on trees.

This talk is based on an ongoing work with Biltu Dan (IISc Bangalore), Rajat Subhra Hazra (U Leiden) and Rounak Ray (TU Eindhoven).