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Scaling limits of random planar maps with large faces.

Abstract: We discuss asymptotics of large random maps in which the distribution of the degree of a typical face has a polynomial tail. When the number of vertices of the map goes to infinity, the appropriately rescaled distances from a base vertex can be described in terms of a new random process, defined in terms of a field of Brownian bridges over the so-called stable trees.

This allows to obtain weak convergence results in the Gromov-Hausdorff sense for these "maps with large faces", viewed as metric spaces by endowing the set of their vertices with the graph distance. The limiting spaces form a one-parameter family of "stable maps", in a way parallel to the fact that the so-called Brownian map is the conjectured scaling limit for families of maps with faces-degrees having exponential tails. This work takes part of its motivation from the study of statistical physics models on random maps. Joint work with J.-F. Le Gall.