Brownian Surfaces

Grégory Miermont[1], Jérémie Bettinelli[2]

[1] ÉNS de Lyon

[2] École Polytechnique

We show that large uniform random quadrangulations of a given compact orientable surface S, possibly with boundaries, converges in the appropriate scaling limit to a "canonical" random metric space that we call the *Brownian surface* with topology given by S. We will see that this random space is indeed a.s. homeomorphic to S, although it bears fractal properties, and we will explain in which sense we can view this random space as canonical.