

## Guillaume Chapuy

*Title: Some questions on the Brownian Map motivated by its higher-genus analogues*

Several operations of combinatorial surgery can be used to relate maps of a given genus  $g$  to maps of genus  $g' < g$ . One of them is the Tutte/Lehman-Walsh decomposition, but more advanced constructions exist in the combinatorial toolbox, based on the Marcus-Schaeffer/Miermont or the trisection bijections.

At the asymptotic level, these constructions lead to surprising relations between the enumeration of maps of genus  $g$ , and the genus 0 Brownian map. I will talk about some fascinating identities and (open) problems resulting from these connections, related to Voronoi diagrams, "W-functionals", and properties of the ISE measure. Although the motivation comes from "higher genus", these questions deal with the usual Brownian map as everyone likes it.

This is not very new material, and a (mostly French) part of the audience may have heard these stories one million times. But still I hope it will be interesting to advertise them here. In particular, I do not know if recent "Liouville-based" approaches have anything to say about all this.