

Mathematics and Statistics Department Colloquium

Dr. Gaëtan Borot

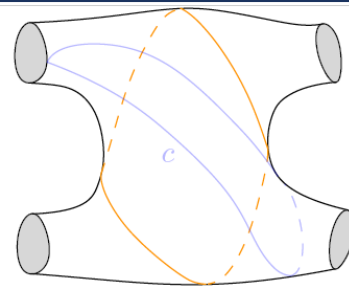
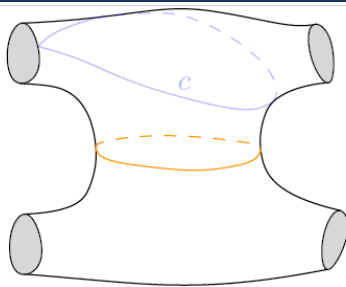
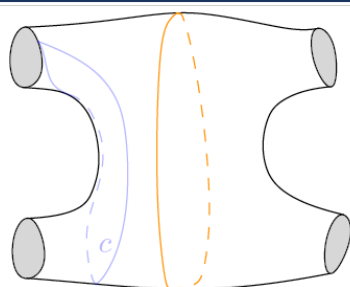
**Max Planck Institute for Mathematics
Bonn, Germany**



**Thursday, September 6
3:30pm
Osprey 2006**

Cut(e) Ideas to Count Surfaces

Through the examples of edge pairings in a polygon (higher Catalan numbers), branched coverings of the Riemann sphere (Hurwitz theory), and Mirzakhani-type identities in hyperbolic geometry of surfaces, I will show that implementing the idea of cutting/gluing can lead to an inductive solution for several problems of enumeration of surfaces. This induction decreases the “complexity” of the surface (measured by its Euler characteristic), and always takes the same form, with only difference lying in the initial conditions. I will also try to give a brief overview of the history and the recent applications of this universal structure, which are closely related to physics (random matrices, 2d quantum gravity, and topological field theories). We will introduce along the way the few notions needed from geometry so that no prior knowledge is assumed.



Reception to follow in Osprey 2003

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