

SIPO (Seminario de Investigadores Postdoctorales)

Speaker: Julien Boulanger, Center for Mathematical Modeling, U. de Chile

Title: The Hurwitz automorphism problem and its “translation surface” versión.

Abstract:

In 1893, Hurwitz showed that a compact Riemann surface of genus $g \geq 2$ has at most $84(g-1)$ automorphisms. This bound is optimal for an infinite family of genera but there is also an infinite family of genera for which the bound is not optimal. The Hurwitz automorphism problem consists in finding the optimal bound for every genus, and apart from partial results in specific cases it is far from being solved. In this talk we will explain the first sentence of this abstract and give a geometric intuition for the result. On the way, I will discuss a similar problem for translation surfaces.

Translation surfaces can be seen as Riemann surfaces with an additional structure, and an automorphism of a translation surface must preserve this additional structure: in particular, there are even less automorphisms and a compact translation surface of genus $g \geq 2$ has at most $4(g-1)$ automorphisms. This last bound was obtained by J.C. Schlage-Puchta and G. Weitze-Schmidhüsen in 2013, and they also show that the bound is optimal if and only if $g-1$ is either even or a multiple of 3. In a joint work with R. Gutierrez-Romo and E. Lanneau, we study the other cases and provide the optimal bound for example when $g = pq+1$ with $p, q \geq 5$ prime numbers.

When: Tuesday, April 28 at 2pm

Venue: Sala John Von Neumann, 7th floor, Beauchef 851

<https://eventos.cmm.uchile.cl/postdocseminars/upcoming-seminars/>

