

Algebra, Geometry, and Mathematical Physics Seminar

Map Enumeration

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Abstract

Consider maps from a Riemann surface of genus g to the Riemann sphere which are ramified over only 3 points, with index of ramification over one of the three fixed to be 2. Such maps are important in the study of algebraic closures of the rational numbers, were called “dessins d’enfants” by Grothendieck, and give the invariants for the action of the absolute Galois group of the rational numbers. An important question in these applications is how many such maps can be found with a specified ramification structure at the 3 points. We will show that these maps are related to the triangulations of a surface and give two methods for computing the enumerations. One method is an algorithm for the counting; while the other involves solving the differential equation satisfied by the generating function. Two open problems suitable for students will be posed.

Date: **Friday, October 23, 2009**

Time: 3:00pm–4:30pm

Place: MAGC 1.302

For further information or for special accommodations, please contact Dr. Sean Lawton via email at lawtonsd@utpa.edu.