Topology, Algebraic Geometry, & Dynamics Seminar

Expanding Thurston maps and visual spheres

Annina Iseli
Department of Mathematics
University of California, Los Angeles

A Thurston map is a branched covering map of the two-sphere whose post-critical set is finite. If a Thurston map is expanding, its dynamics induces a sequence of finer and finer tilings of the two-sphere and thereby yields a (possibly fractal) metric on the two-sphere. A result of Hassinsky-Pilgrim (2009) and Bonk-Meyer (2017) relates the geometric properties of the induced metric to the analytic properties of the Thurston map. Namely, it states that the induced metric is quasisymmetrically equivalent to the chordal metric if and only if the expanding Thurston map is topologically conjugate to a rational map of the Riemann sphere. This result is particularly interesting in light of Thurston's characterization (1980ies) of rational maps.

In the first part of the talk, we will recall the concepts and results mentioned above. In the second part, we will consider a specific family of expanding Thurston maps that illustrates some of the difficulties in finding conjugate rational maps. It is hoped that studying this family gives more insight into the combinatorial characterization of postcritically-finite rational maps.

Date: **Friday, April 5, 2019**
Time: **2:30-3:20 pm**
Place: **4106 Exploratory Hall**

For special accommodations, please contact Sean Lawton via email at `slawton3@gmu.edu`.