

BOSTON UNIVERSITY GEOMETRY SEMINAR

FLAT SURFACES, MODULI SPACES AND TEICHMUELLER CURVES

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February 22, 2012, 3:00 – 4:00pm
Math/Computer Science, Room B21
111 Cummings Street, Boston

Tea: 2:45pm in Room 144

Abstract: An abelian differential defines a flat structure on a Riemann surface, such that it can be visualized as a plane polygon. Varying the shape of the polygon induces a natural $SL(2)$ -action on their moduli space. In this talk I will describe the geometry of this moduli space as well as a closed $SL(2)$ -orbit, called Teichmueller curve. Using a special Hurwitz curve as example, I will illustrate a beautiful interplay between polygon billiards, counting branched covers and the intersection theory on moduli space. An invariant numerical property of Teichmueller curves in low genus will be discussed (joint work with Martin Moeller), which answers a question posted by Kontsevich and Zorich about a decade ago.

See <http://math.bu.edu/research/geom/seminar.html> or contact Takashi Kimura kimura@math.bu.edu for more information.