Open Problems

Mike Wolf

March 1–2, 2008

1. For all infinite-length, Weil–Petersson geodesics in Teichmüller space, is there a lamination whose length tends to zero?

2. Fix a base hyperbolic surface X_0 of genus g. Is there a formula for the Hessian of the energy of the harmonic map (in a given homotopy class) from X_0 to X, where X varies in Teichmüller space?

   3) Consider an infinite-length Weil–Petersson ray with an ending lamination whose length is tending to zero. What can be said about the (asymptotics of the) foliation of the unit quadratic differentials tangent to that geodesic, as the point of tangency runs along the geodesic?