A family of non-injective skinning maps with critical points.

Following Thurston, certain classes of 3-manifolds yield holomorphic maps on the Teichmüller spaces of their boundary components. Inspired by numerical evidence of Kent and Dumas, we present a negative result about these maps. Namely, we construct a path of deformations of the hyperbolic structure on a genus-2 handlebody with two rank-1 cusps. We exploit an orientation-reversing isometry to conclude that the skinning map sends a specified path to itself, and use estimates on extremal length functions to show non-monotonicity and the existence of a critical point. Time permitting, we will indicate some surprising unexplained symmetry that comes out of our calculations. (Received September 16, 2013)