Computing the image of Thurston's skinning map

David Dumas, University of Illinois at Chicago

Thurston's skinning map is a holomorphic map between Teichmueller spaces that arises in the construction of hyperbolic structures on compact 3-manifolds. I will describe the theory and implementation of a computer program that computes the images of skinning maps in some cases where the Teichmueller space has complex dimension one. The key to the computational method is that each point in the image of the skinning map represents an intersection between two Lagrangian subvarieties of the SL(2,C) character variety of a surface group. The skinning image is computed by tracking the movement of these intersections as one of the varieties (the Bers slice) is changed.