Harmonic maps and the stabilization of Heegaard splittings

Joel Hass

Abstract: A geometric view of the collection of Heegaard splittings of a hyperbolic manifold has been emerging recently. We combine this with a method of controlling surfaces via a deformation to harmonic maps. As an application, we give examples for each genus greater than one of a 3-manifold with a pair of genus $g$ Heegaard splittings whose smallest common stabilization has genus $2g$. All previously known examples had a common stabilization of genus $g + 1$. This is joint work with Abigail Thompson and Bill Thurston.