1158-58-328   **Brian Benson*** (`bbenson@ucr.edu`). *Algorithms for Computing the Cheeger Constants of Hyperbolic Manifolds.*

The Cheeger constant is an invariant defined on a Riemannian manifold, from which lower and upper bounds on Laplace eigenvalues of the manifold can be established. Further, the Cheeger constant is related to the isoperimetric problem for a given manifold, specifically, finding subsets of minimum perimeter amongst those have a fixed volume. I will outline work on and results from various recent projects with collaborators Grant Lakeland, Jeffrey Meyer, and Holger Then which directly compute and certify the Cheeger constants of hyperbolic surfaces. In addition, I hope to discuss challenges related to computing the Cheeger constant of hyperbolic 3-manifolds. (Received March 03, 2020)