

Generating Examples of High Distance Heegaard Splittings

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Abstract. Given a closed orientable 3-manifold M , a surface S in M is a Heegaard surface if it separates the manifold into two handlebodies of equal genus. This decomposition is called a Heegaard splitting of M . The Hempel distance of this splitting is the length of the shortest path in the curve complex of S between the disk complexes of the two handlebodies. In 2004, Evans developed an iterative process to construct a manifold that admits a Heegaard splitting with arbitrarily high distance. We first provide an introduction to Heegaard splittings and Hempel distance and then improve on Evans' results.