

1110-57-182

Carl Hammarsten* (chammar@gwu.edu). *Decorated Heegaard diagrams and combinatorial Heegaard Floer homology.*

A 3-dimensional closed manifold Y represented by its branched spine has a canonical Heegaard decomposition. We present this decomposition graphically in the form of a strip diagram. We show that strip diagrams have nice properties which greatly simplify the calculation of Heegaard Floer homology. Motivated by this work, we introduce the idea of a decorated Heegaard diagram. That is, a Heegaard diagram together with a collection of embedded paths satisfying certain criteria. Using this decorated Heegaard diagram, we present a combinatorial definition of a chain complex which is homotopically equivalent to the Heegaard Floer one, yet significantly smaller. Finally, we consider the presentation of a branched spine by its O-graph and show how to reformulate our definition in these terms. (Received February 19, 2015)