

An algorithmic method to compute plat-like Markov moves in genus two 3-manifolds

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This article is motivated by the equivalence of links in 3-manifolds of Heegaard genus two. We construct an algorithm (implemented in C++) which, starting from a description of such a manifold introduced by Casali and Grasselli that uses 6-tuples of integers and determines a Heegaard decomposition of the manifold, allows to find the words in $B_{2,2n}$, the braid group on $2n$ strands of a surface of genus two, that realize the plat-equivalence for links in that manifold. In this way we extend the result obtained by Cattabriga and Gabrovšek for 3-manifolds of Heegaard genus one to the case of genus two. We describe explicitly the words for a notable family of 3-manifolds.