

Computational homology

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I am going to provide brief introduction to the subject of algorithmic homology computation of simplicial complexes and cubical sets, mainly limited to the theory and algorithms behind the Computational Homology Project software:

<http://chomp.rutgers.edu/software/>

In particular, I plan to discuss algorithms for the computation of homology of cubical sets and homomorphisms induced in homology by continuous maps, and to point out some reduction techniques that speed up the computations. I am also going to mention some applications of this machinery, and discuss a selection of related topics, such as persistent homology.