III. Surface Simplification

9 Edge contraction algorithm
10 Preserving topology
11 Simplicial maps
12 Error measure

This chapter describes an algorithm for simplifying or decimating a given triangulated surface. We assume this surface represents a shape in 3-dimensional space and the goal is to represent the same shape with fewer triangles. The particular algorithm combines topological and numerical computations and provides an opportunity to discuss combinatorial topology concepts in an applied situation. Section 9 describes the algorithm, Sections 10 and 11 study related topological questions, and Section 12 explains the numerical component of the algorithm.