

Homework 2: Cut Graph and Fundamental Domain

Given a closed surface represented by a triangular mesh, we can cut it open to a simply connected disk, whose boundary consists of identified edges, i.e. edges that should be glued together. Such a connected disk is called the fundamental domain, and the identification on its boundary reveals the surface topology. The cut graph algorithm is a simple way to get the cutting curve.

1) [Compute the cut graph \(due March 17th\)](#)

Implement the cut graph algorithm (check the slides)

You can use the half-edge mesh library I provided at:

<http://www.ece.lsu.edu/xinli/teaching/MeshLib2.zip>

or try a simpler but slower version at:

http://www.ece.lsu.edu/xinli/teaching/MeshLib_Simple.zip

2) [Generate the fundamental domain \(due March 24th\)](#)

Implement the algorithm for fundamental domain generation (check the slides)

DUE: 11:59pm Mar. 24th, 2010