$$\kappa(V_i, V_j) = 1 - \frac{W(V_i, V_j)}{S_{ij}}$$
$$= 1 - \frac{0}{10^{-5}} \approx 1 > 0$$

Positive Ricci Curvature

Same Neighbors of V_i and V_j

Share all neighbors

Clustering Results of Ricci Flow

(a)

Figure 8: *An example of Ricci flow.*

Appendix A: An example of Ricci flow

We provide an example to elaborate that our clustering algorithm adaptively divides meshes into patches. As shown in Fig. 8, the details of the clustering algorithm can be explained as follows. Firstly, take two connected vertices in meshes, such as V_i and V_j in Fig. 8. Then, we sampling the neighbors with similar directional curvature of V_i and V_j based on the fast seed expansion algorithm in Sec. 3.2. In this case, the sampling results show that V_i and V_j have the same neighbors, so W is 0, which is less than the edge weight $S_{ij} = 10^{-5}$. Therefore, the Ricci curvature κ is positive, and these two vertices will be clustered into one patch by running Ricci flow. Following the same process, vertices with similar directional curvature will be clustered into one patch, and the whole mesh will be split into patches having similar directional curvature, as shown in Fig. 8. The implementation of MeshFormer can be found at https://github.com/MeshFormer/MeshFormer.