

ElementSets from MeshConnectivity

VertexOneRing, Vertices from PointCloudNeighborhoods(M)

M : PointCloud

$s \in \mathbb{R}^r$

$n_i \in \mathbb{R}^o$

$V, E = \text{ElementSets}(M)$

$$\text{energy}_i(s) = \sum_{j \in \text{VertexOneRing}(i)} \|s_i \ n_i - s_j \ n_j\|^2 \text{ where } i \in V, s \in \mathbb{R}^r$$

$$\text{total} = \sum_{v \in V} \text{energy}_v(s) + 100 \ (s_1 + 1)^2$$

$$g = \frac{\partial \text{total}}{\partial s}$$