

way, the uniform distribution of the samples on the sphere can be ensured.

Although Eq. 3 is effective to distribute samples to strokes, it cannot ensure the uniform distribution of samples in each cluster, due to the fact that the clusters contained on each stroke may have similar  $\xi_u$  and  $\eta$  values. For each stroke, we first enumerate the pixels in each color cluster, and then sort the clusters in a descending order by the number of pixels contained in each cluster. Note that clusters with too few pixels are discarded. In our implementation, we discard the clusters in which the number of pixels is less than 5% of the total number of pixels on the stroke. We assign samples to each cluster according to the number of pixels belonging to that cluster, and clusters with more pixels will be assigned with more samples. The number of samples in each cluster is calculated as:

