Goal is to cluster time segments. However, we don’t want to identify as separate clusters if the animal frequently visited area 1 in one time segment and frequently visited area 2 in another time segment but these two areas are very close to each other.

Perhaps we can cluster locations manually. What dictates how we cluster locations is essentially the type of inference that users want to make. If they don’t care about distinguishing two sites that are nearby each other, we can create a new dataset where these two locations have been lumped into one.

#-------------------------------------------------------------

Similar to bi-clustering or stochastic block model.

The data that we are modeling is a S x L matrix of counts. How would I generate these data?

Notice that I want to cluster locations that have similar visitation rates and that are close to each other.

We begin with each occupied pixel being a separate spatial cluster.

Create centers for each spatial cluster. All locations closer to this center (compared to other centers) get’s assigned to this cluster (Voronoi tessellation).

For site s, we assume that: