

Assignment 3

Using the data set *dataset_latentnet* provided in the course demonstration to finish the following questions:

1. Estimate model 1 in the course demonstration but change the specification of latent positions from the Euclidean distance to the inner product (in two dimensions). Report the summary of model fit and plot your estimation results of latent positions.
2. Estimate model 2 in the course demonstration and specify the latent positions in three clusters. Report the summary of model fit and plot your estimation results of latent positions and clusters.

Using the two data sets *faux.desert.high* and *florentine* provided in the R package *ergm* to finish the following questions:

3. Estimate an ERGM for this high school student friendship network to estimate the effects of same sex, same race, the number of edges, and the number of mutual links on friendship formation. Report your estimation result.
4. Count separately how many two stars and three stars are in the flomarriage network and estimate an ERGM for the flomarriage network with the specification of the number of edges, two stars, and three stars. Report your estimation result.