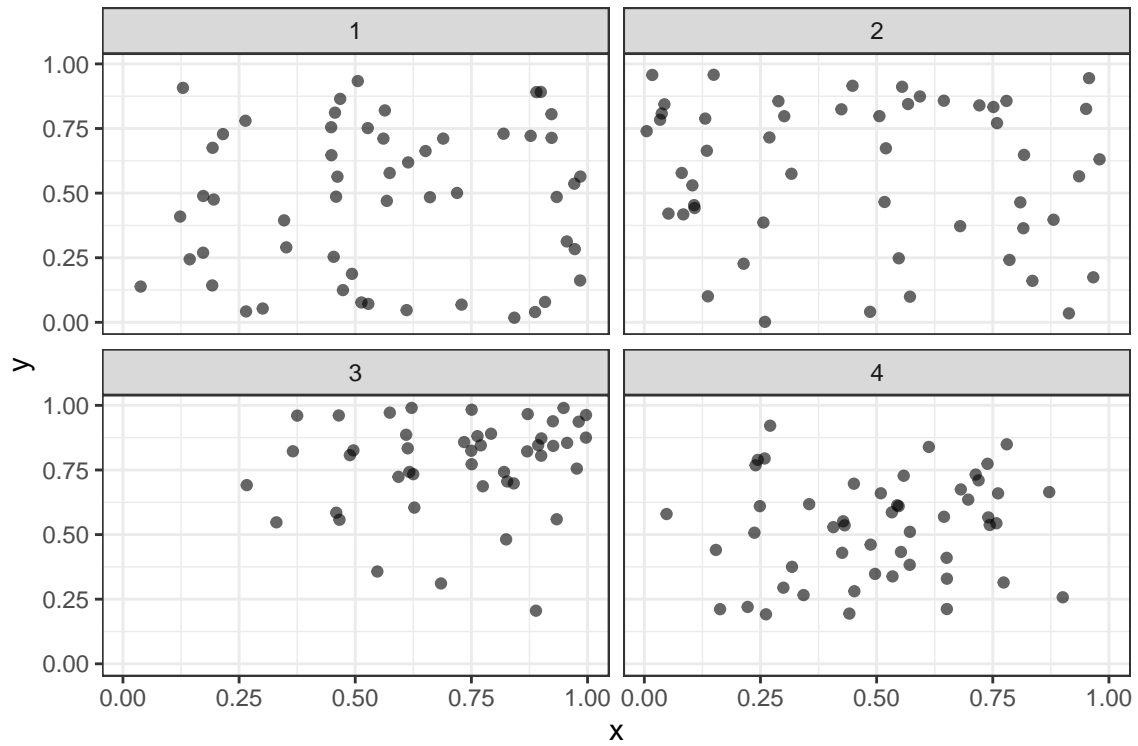


PP Hypothesis Tests

Hypothesis Tests for CSR



G and F Functions One way to describe a spatial point process, is to consider the probability of being a certain distance from a point or similarly, the number of points expected in a distance from a point.

A similar statistic is the $F(d)$ function. Whereas $G(d)$ is centered at the observed \mathbf{s}_i , $F(d)$ is defined at any arbitrary point. *Hence this is a CDF for empty space.*

Discuss how to create an empirical estimate of $\hat{G}(d)$, given a realization of a point process.

With bounded area, edge correction procedures are necessary.

$$\hat{G}(d) = \frac{\sum_i 1(d_i \leq d < b_i)}{\sum_i 1(d < b_i)},$$

The empirical estimates of G or H can be compared with G or F using a QQ-plot.

- **Discuss:** What would be the implications of shorter tails or longer tails than expected under CSR?
shorter tail = clustering/attraction, longer tail = inhibition/repulsion

Describe a natural process that might cluster and another than might repel