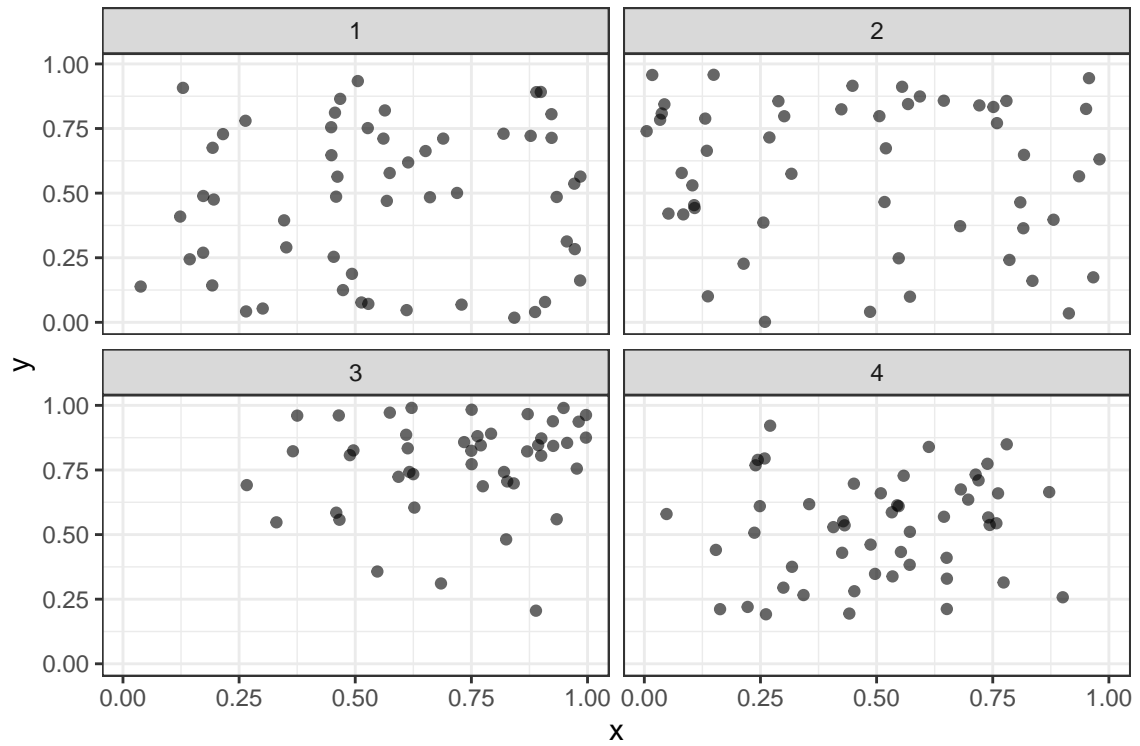


# PP Hypothesis Tests

## 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.

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?

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