

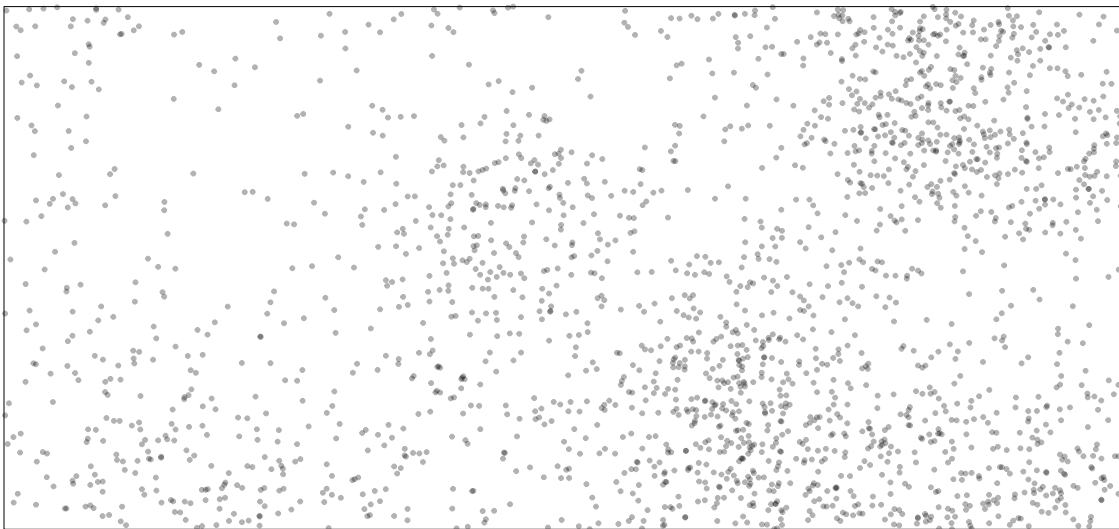
Example Spatial Sampling Paths

Kenny Flagg

May 1, 2020

Full Dataset

Full Data

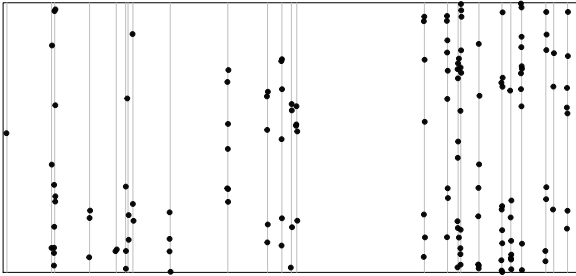


The dataset is in a 1500×700 rectangular region. It will be surveyed such that only events within 2 units of a path are observed.

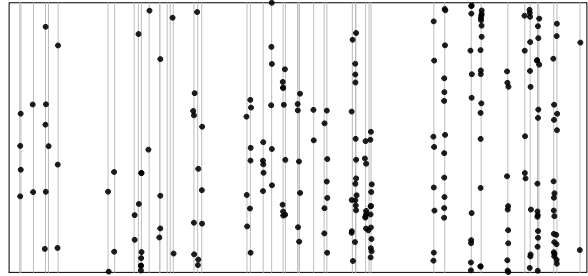
- Parallel transect designs
 - Simple random sample
 - Systematic sample, evenly spaced, with random starting point
 - Inhibitory plus close pairs
- Hilbert curve, a deterministic space-filling curve, with random starting point
- Shortest path (traveling salesperson) through a Latin hypercube sampling design
- Random particle movement, random angle and direction for each segment, with a preference for new locations

Simple Random Sample of Parallel Transects

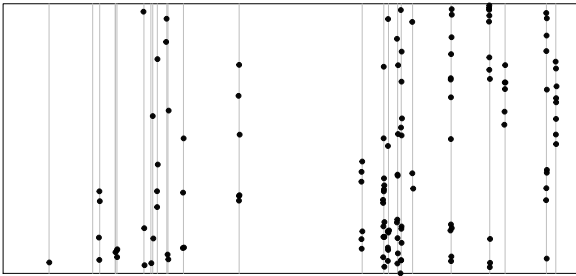
SRS, length = 17500



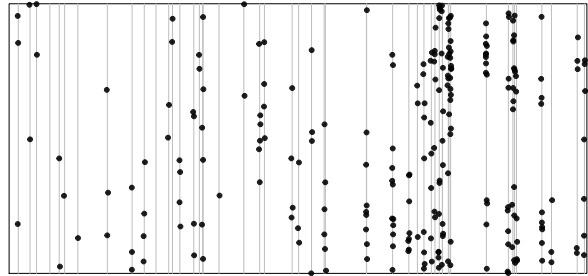
SRS, length = 35000



SRS, length = 17500

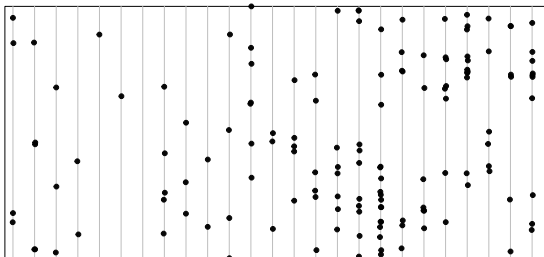


SRS, length = 35000

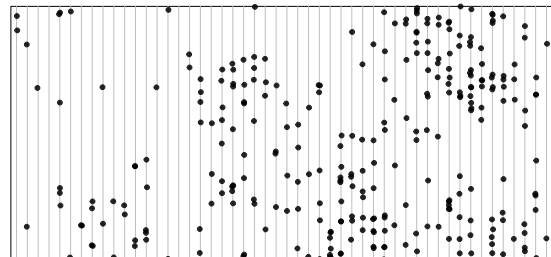


Systematic Sample of Parallel Transects

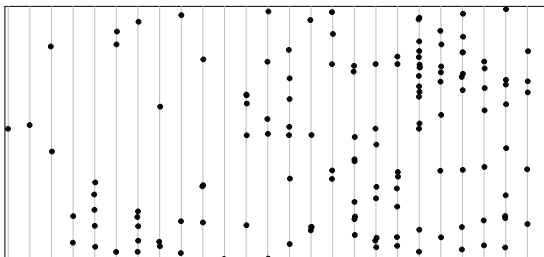
Systematic Sample, length = 17500



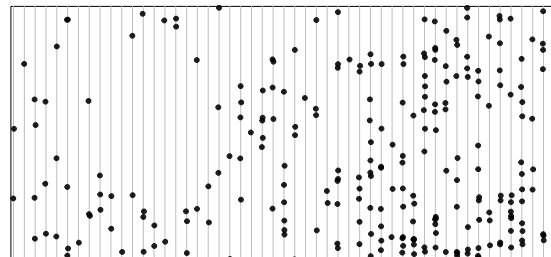
Systematic Sample, length = 35000



Systematic Sample, length = 17500

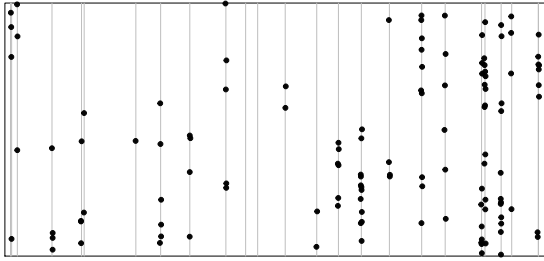


Systematic Sample, length = 35000

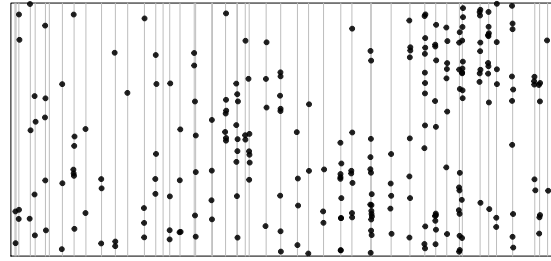


Inhibitory Plus Close Pairs of Parallel Transects

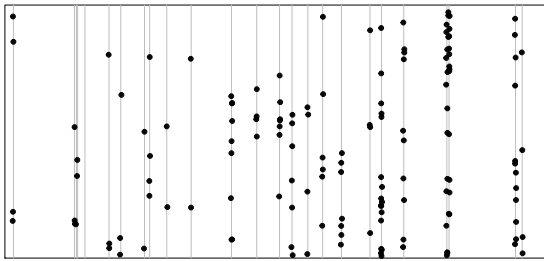
Inhibitory Plus Pairs, length = 17500



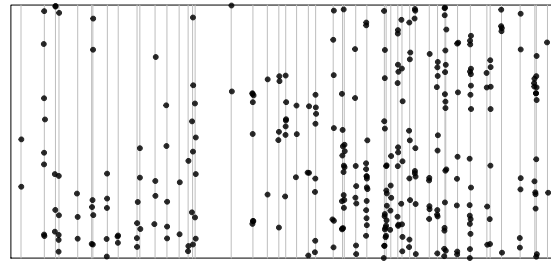
Inhibitory Plus Pairs, length = 35000



Inhibitory Plus Pairs, length = 17500

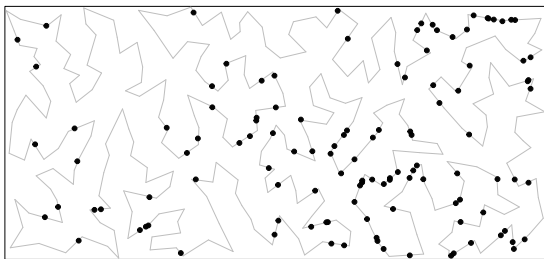


Inhibitory Plus Pairs, length = 35000

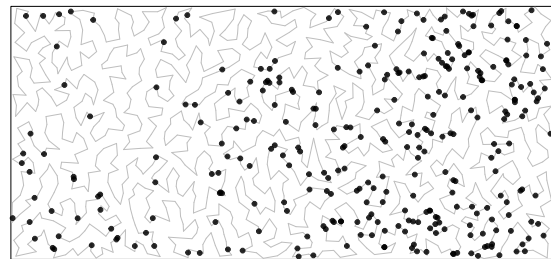


Latin Hypercube Sampling-Traveling Salesperson

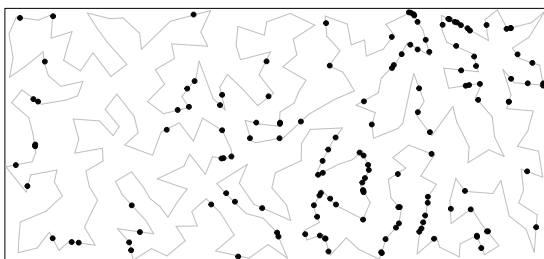
LHS-TSP, length = 17062



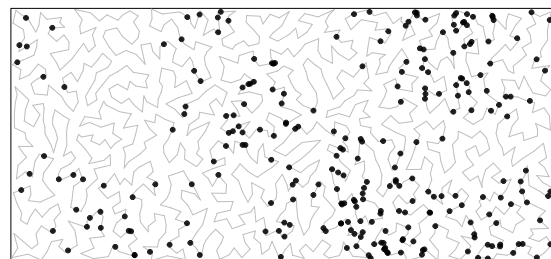
LHS-TSP, length = 34484



LHS-TSP, length = 17242

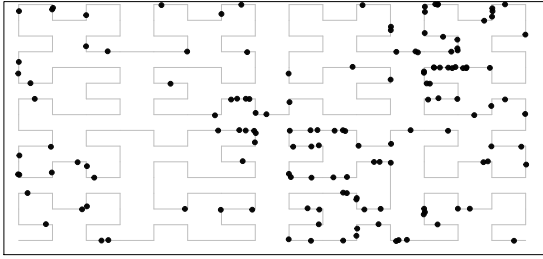


LHS-TSP, length = 34278

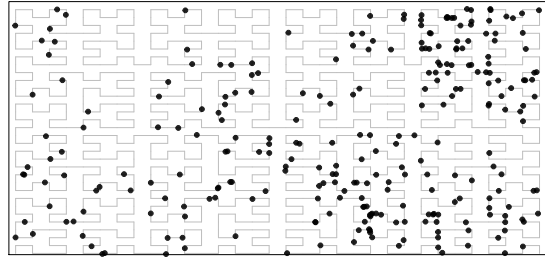


Hilbert Curve

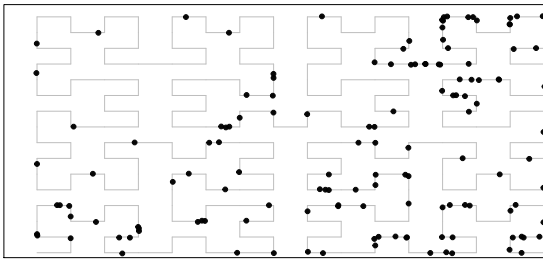
Hilbert Curve, length = 17442



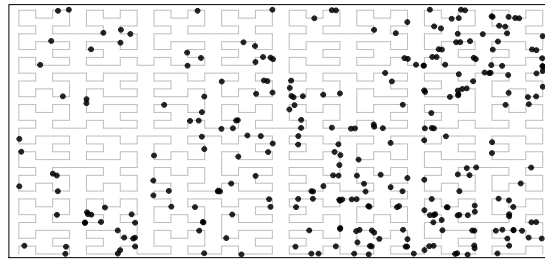
Hilbert Curve, length = 35025



Hilbert Curve, length = 17442

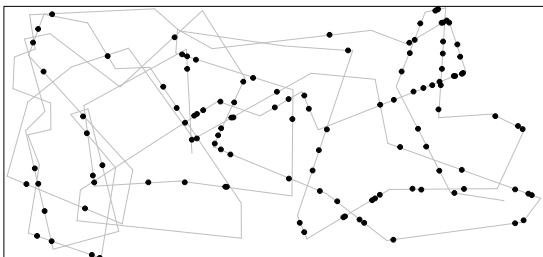


Hilbert Curve, length = 35025

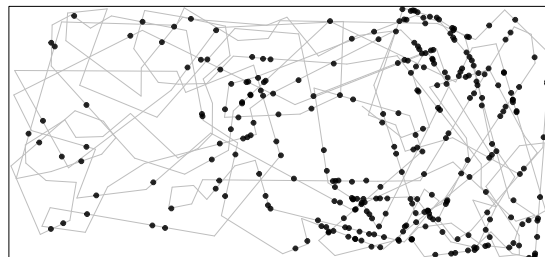


Particle Movement

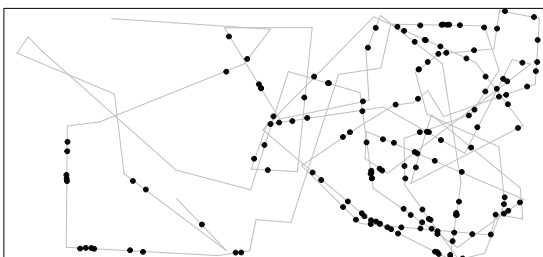
Random Particle Movement, length = 17057



Random Particle Movement, length = 34511



Random Particle Movement, length = 17017



Random Particle Movement, length = 34626

