

HW 7

Question 1

Continuing from Q2 of HW6.

1. (5 points)

Simulate data from this model

$$y \sim N(\mu, \Sigma)$$

$$\sigma_{i,j} = \sigma^2 \exp(-d_{ij}/\phi) + \tau^2$$

where $\sigma^2 = 5$, $\tau^2 = 1$, you can choose ϕ .

Again sample 50 data points from the simulated surface.

1. (5 points)

Using these 50 points, create a variogram. Discuss how the shape of the variogram compares to what you'd expect. Similarly, how does the variogram do at estimating the parameters in the model?

2. (5 points)

Fit the model and make predictions over the entire space. Compare your predictions (the mean) with the simulated surface.