Project description

Consider the situation where we randomly place sensors in a square area of 100x100 m^2 to measure a certain quantity (for example temperature, density, …).

- Design a proper connected sensor network that covers the area of the plant by using a reasonable number of sensors. How many do we need to guarantee a connected sensor network? Motivate your choice.

- Suppose the sensor network would like to compute the average value of the measurement data. In addition to a randomised gossip implementation, which will serve as a baseline method, implement the average consensus problem using the PDMM algorithm. Report the performance in terms of convergence speed and number of transmissions and compare this to the results obtained by the randomised gossip algorithm.

- Suppose the sensor network would like to compute the median of the measurement data. Implement the median consensus problem using the PDMM algorithm.