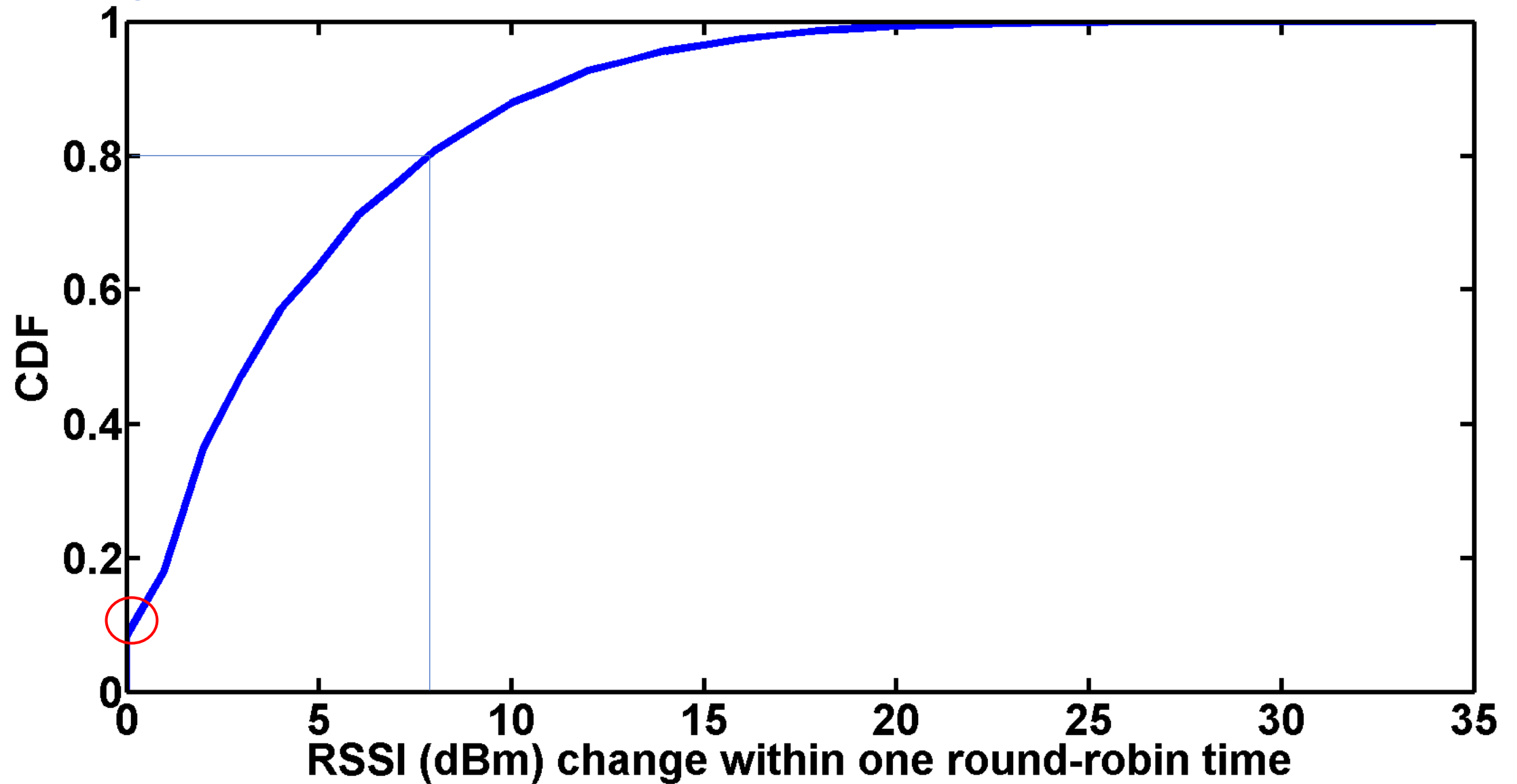


## **LoRa Shuttle**

- 1. PRR – RSSI Model**
- 2. PRR – Noise Model**
- 3. PRR – RSSI&Noise Model**

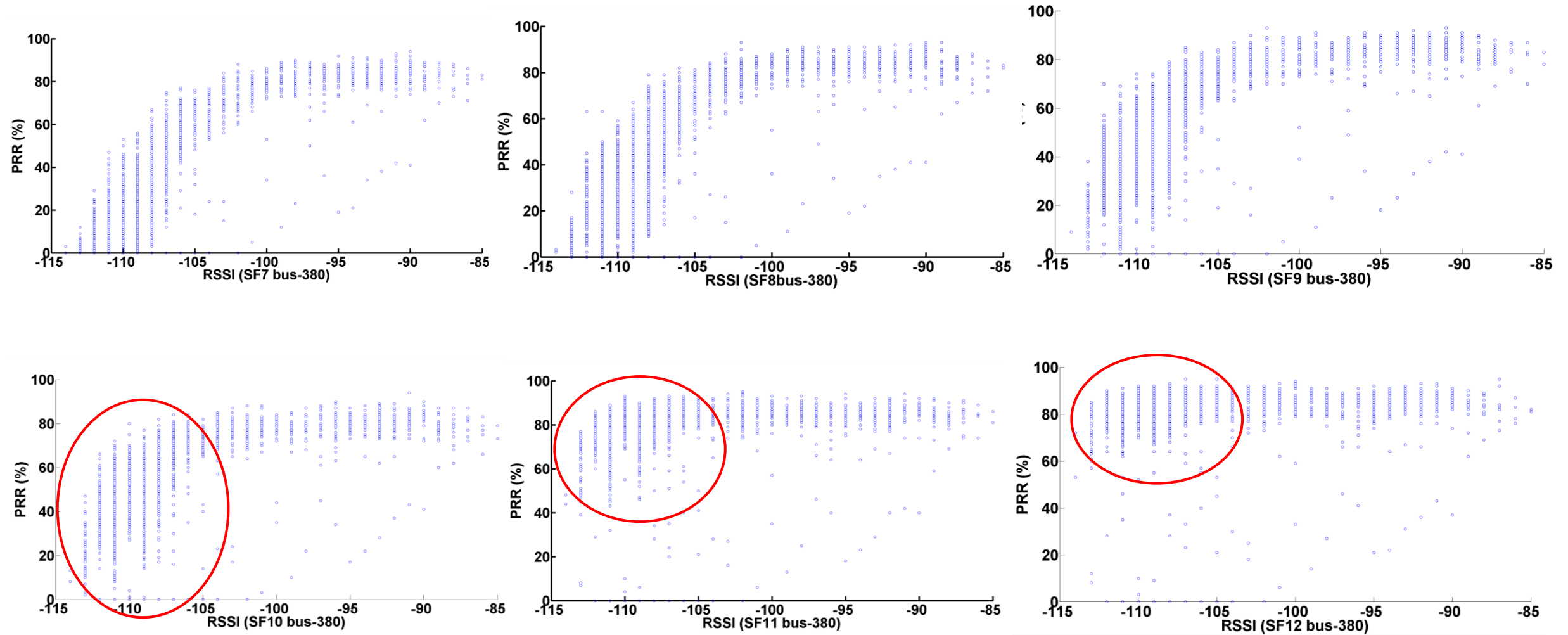
## 1. RSSI change under different SFs



Observation: 80% RSS change is smaller than 7.5 dBm, and 10% RSS change is 0 dBm.

1. Use different SFs, the RSS received has small variation
2. The RSS variation is due to the movement of the vehicle

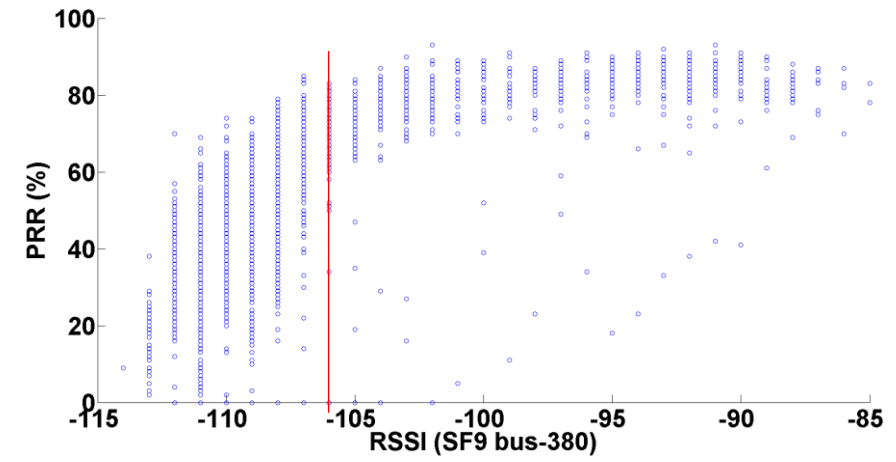
## 2. PRR-RSSI model



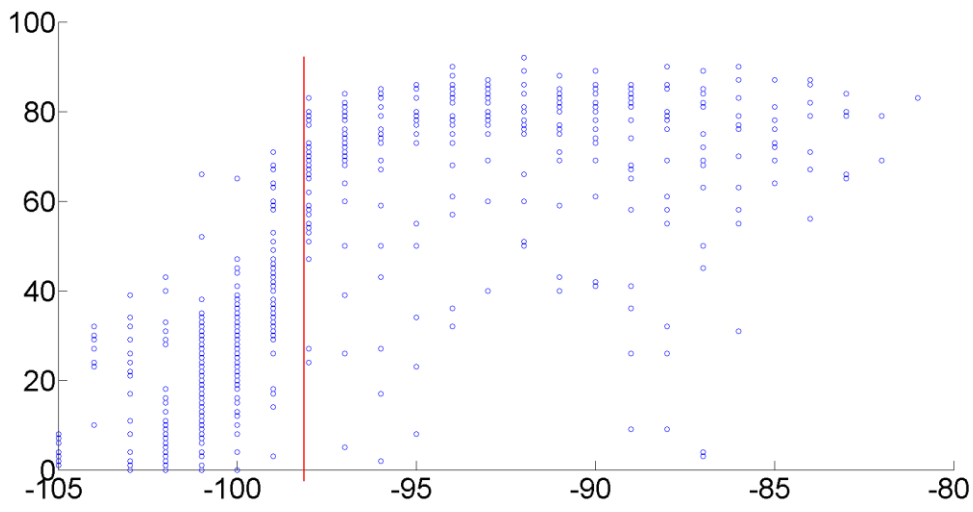
Possible research directions:

1. Model the RSS-PRR relations when the RSSI value is low
2. Model

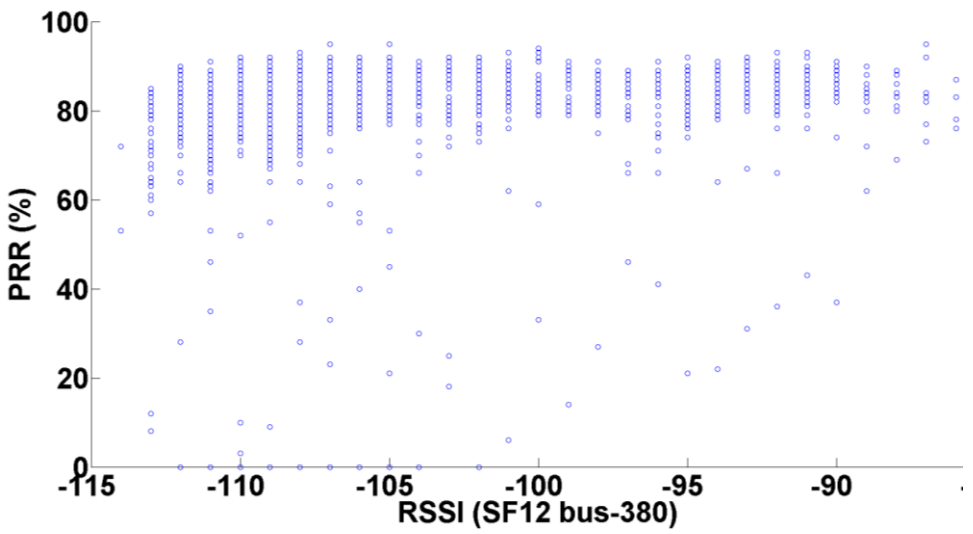
### 3. PRR-RSSI model: Different Buses



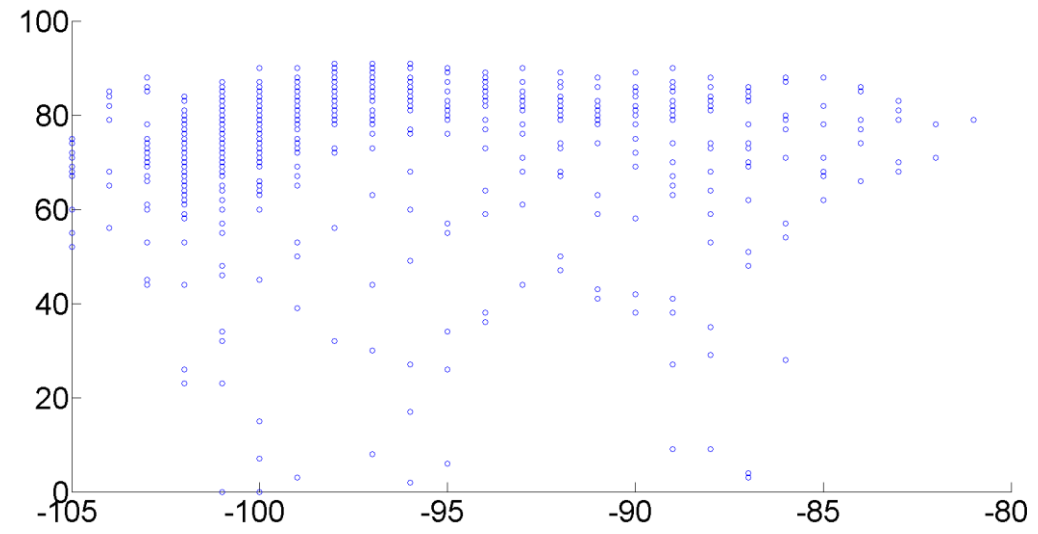
Bus 380 – SF9



Bus 381 – SF9



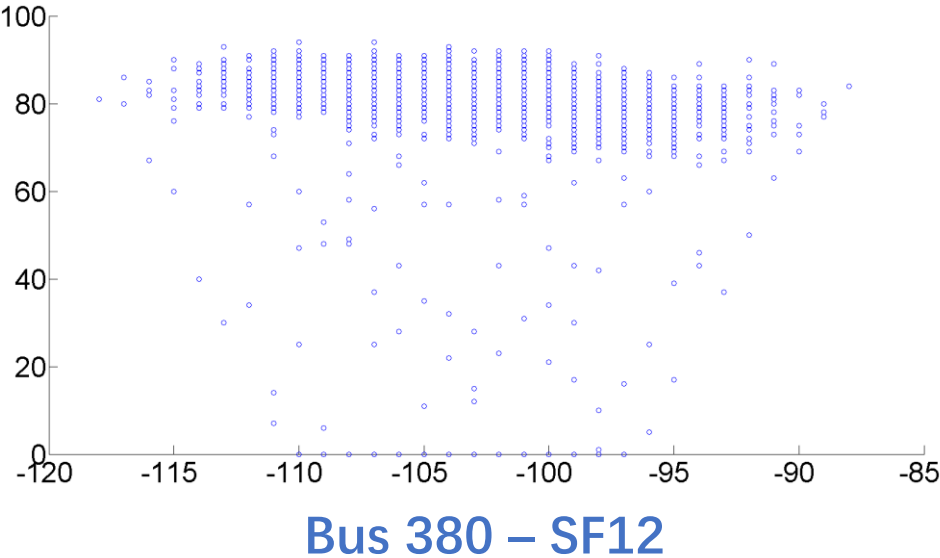
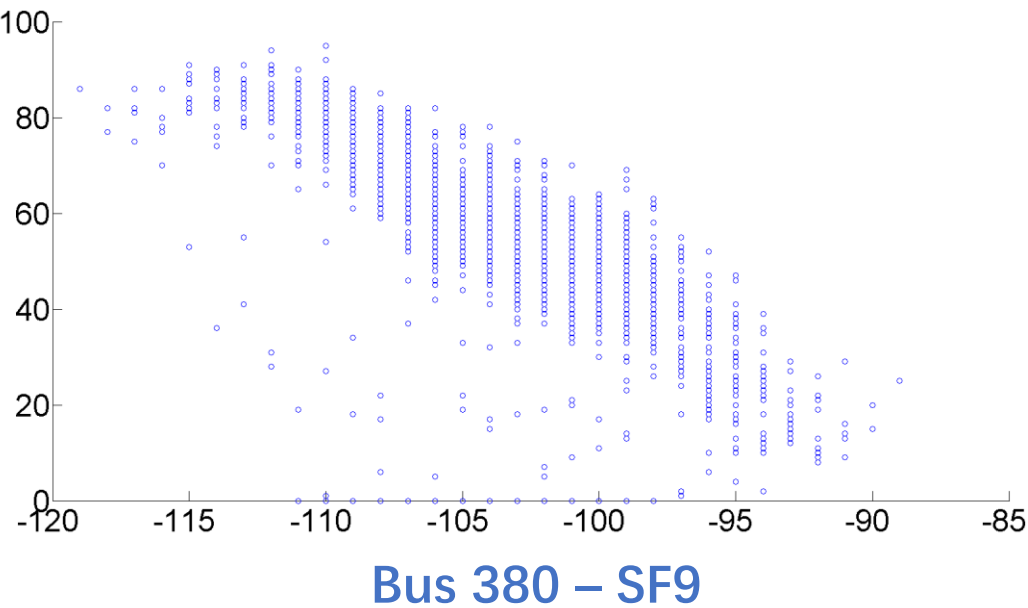
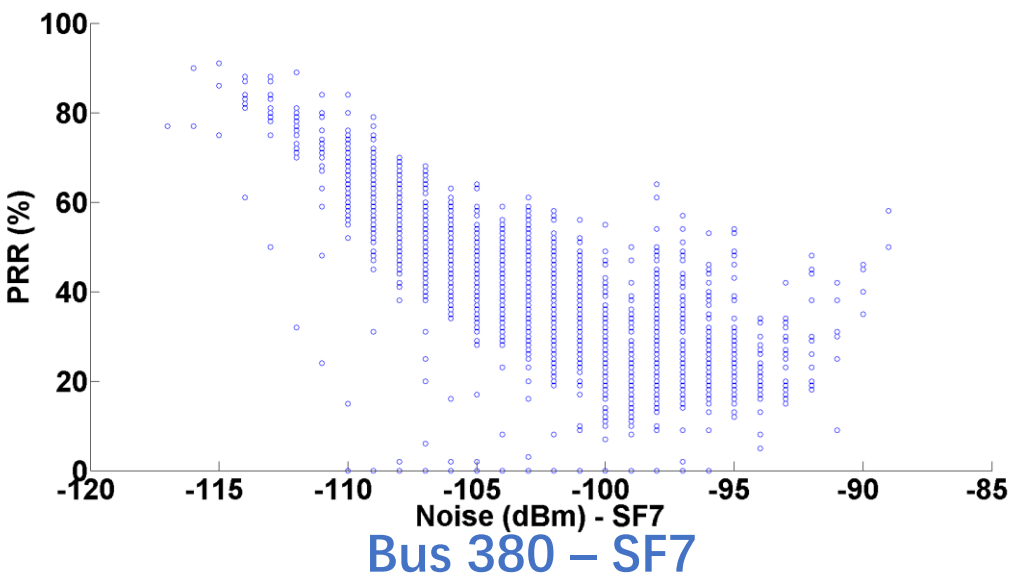
Bus 380 – SF12



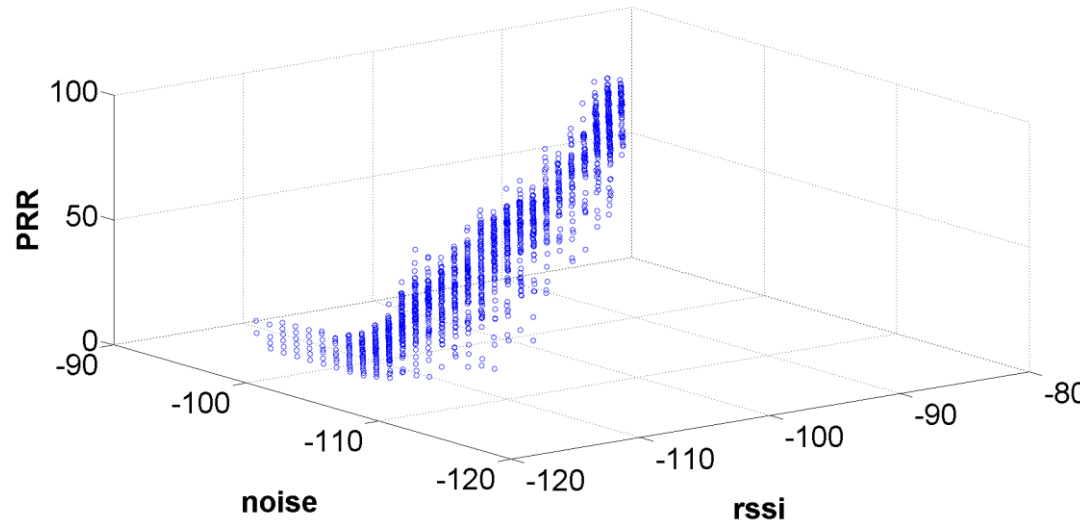
Bus 381 – SF12

1. By right or left shift, we can get the PRR-RSSI model from bus A -> bus B

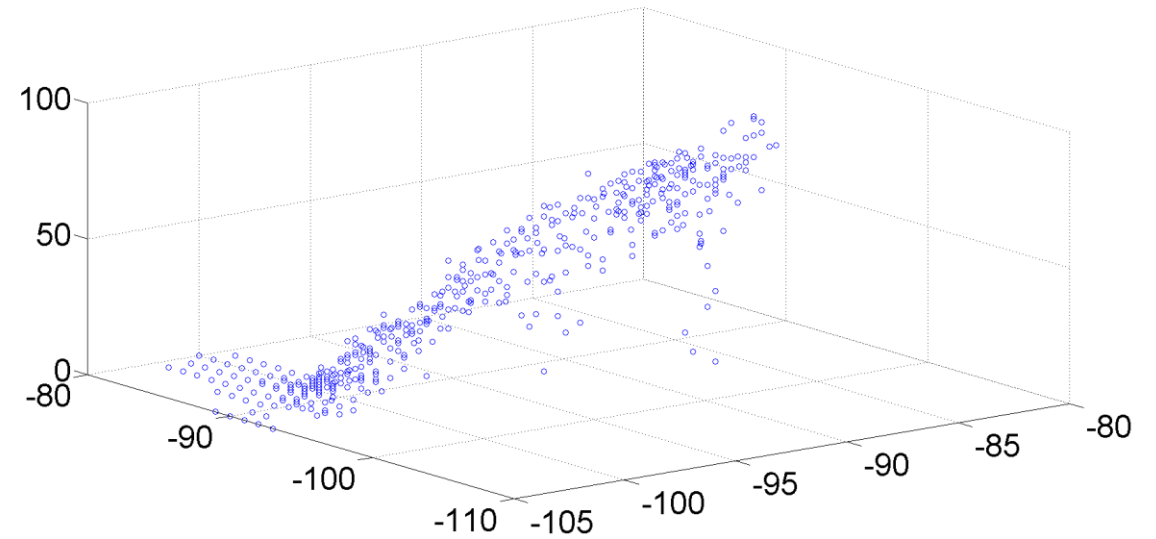
# 4. PRR-Noise model



## 5. PRR-RSSI and Noise model



Bus 380 – SF7- bus380



Bus 380 – SF7- bus381

1. BusA -> BusB, their models follow the same pattern