

# Course Activity

CFO & SFO correction

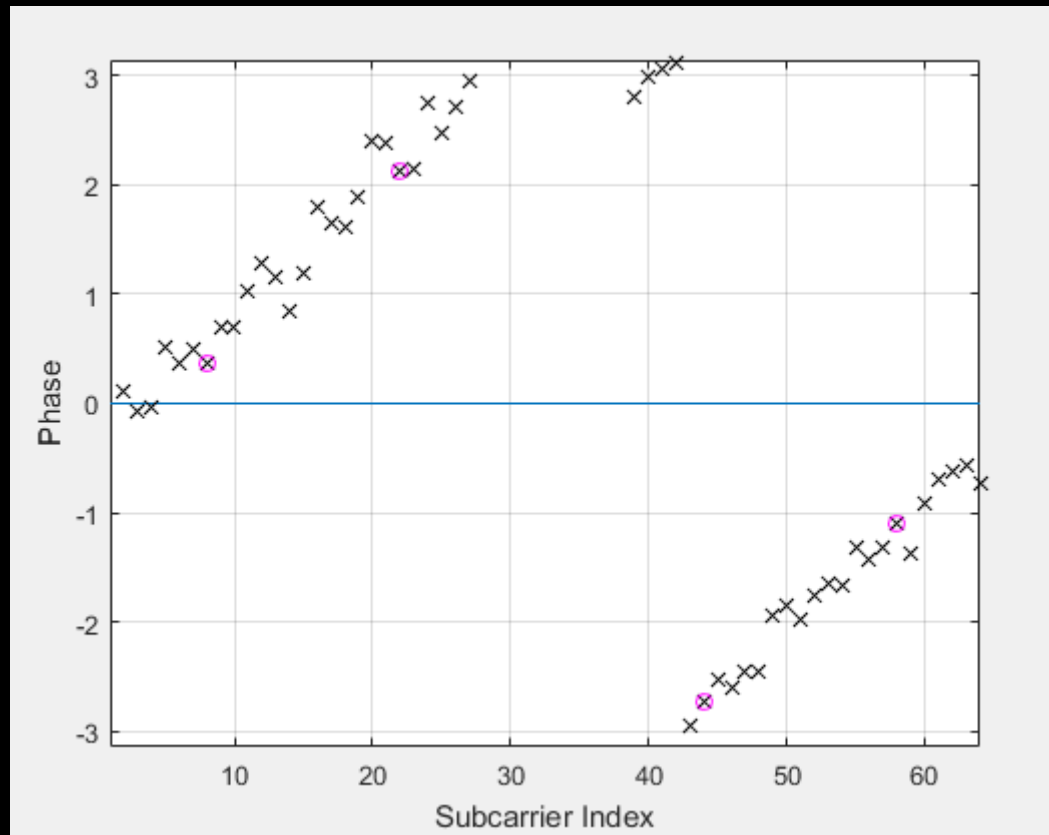
# Target

- Do Carrier Frequency Offset (CFO) and Sampling Frequency Offset (SFO) correction on OFDM

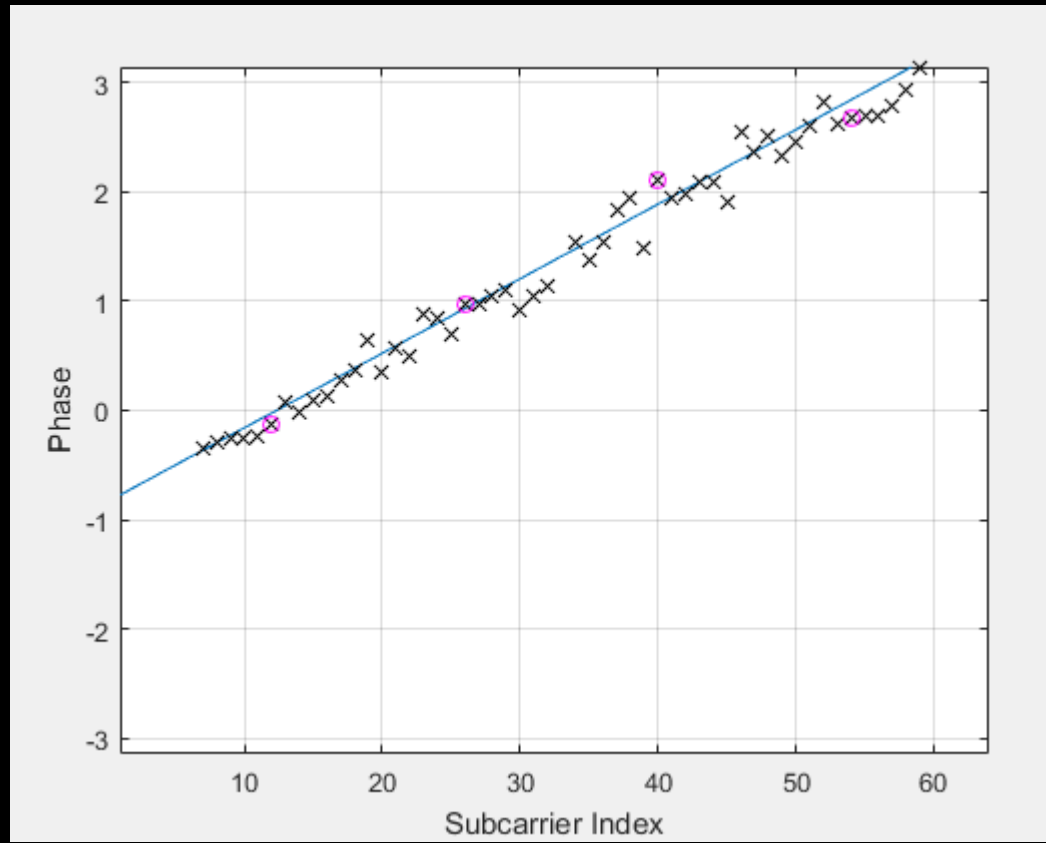
# Sample code

- [https://drive.google.com/open?id=17Ou1gbR7FQJmWyvK3MkEkAjjUnZIS\\_jO](https://drive.google.com/open?id=17Ou1gbR7FQJmWyvK3MkEkAjjUnZIS_jO)
- Run matlab/decode.m
- TODOs in
  - cfo\_correction.m (CFO)
  - phaseTrack.m (SFO)

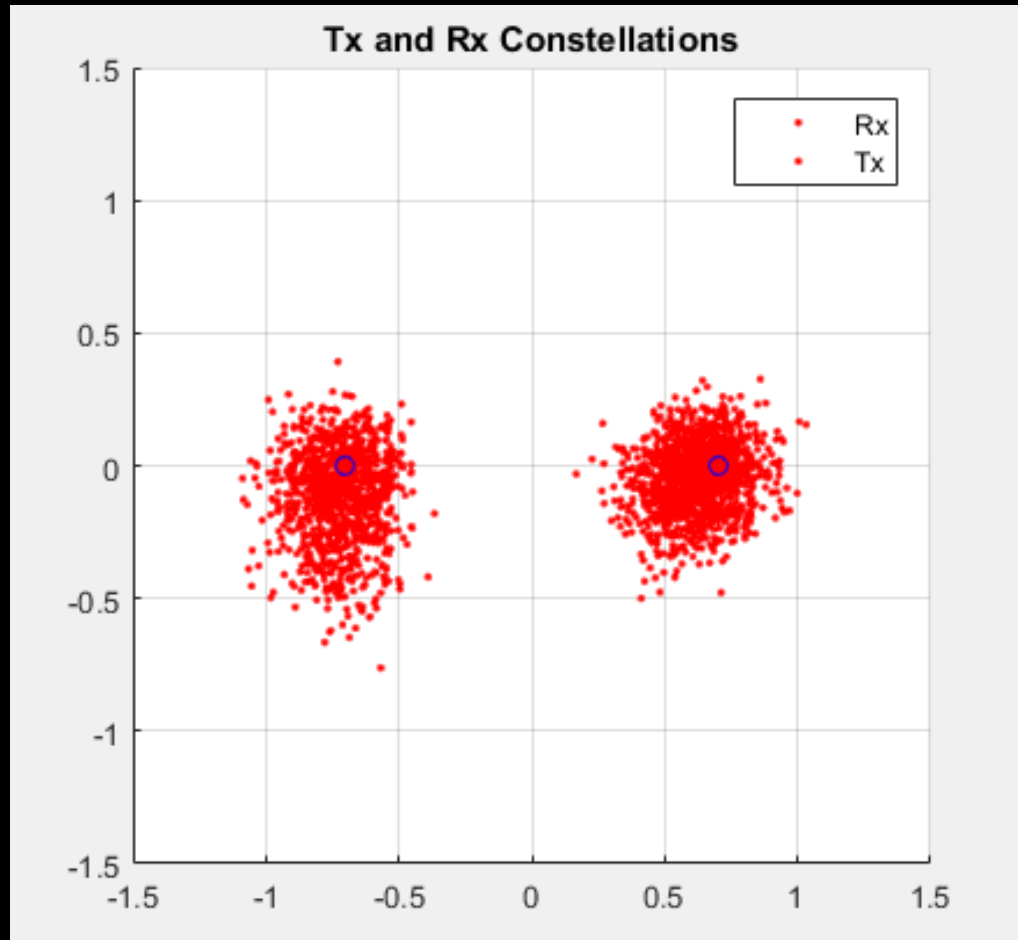
# Original plot ( w/ CFO & SFO)



# Requirement – phase correction



# Requirement – signal constellation



# Submit

- [courses.dlc.ntu.edu.tw](http://courses.dlc.ntu.edu.tw)
  - Exercise > CFO\_SFO
  - .zip containing
    - cfo\_correction.m
      - 40% for correct code
    - phaseTrack.m
      - 40% for correct code
      - 10% for correct Fig. 3 ( phase )
    - 10% for correct Fig. 4 ( constellation )

# Appendix

- $e^{i\theta} = \cos\theta + i\sin\theta$
- $e^{i\theta}$  : `exp(1i*theta)` in matlab