Beamforming and Angle of Arrival (AoA)

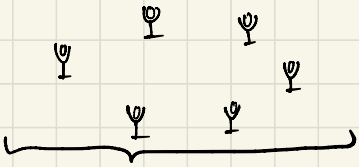
- Omnidirectional antennas: radiate signals in directions

  Directional antennas : certain directions and in others.

- creating such non-circular radiation patterns ⇒ How ?

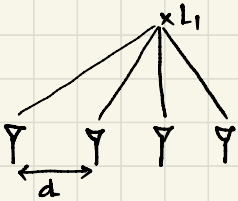
- Let's consider an of omni-directional antennas (or even)

array



- say, these antennas transmit all at the same time?
  - ↳ What signals will you receive from different locations?

- consider first :
  - ↳ The aggregate signals at these nearby locations vary based on the location.
  - ↳ No pattern is visible as you move.
  - ↳ This is called " ".



- Now, consider locations that are
  - ↳ When distance from antennas to becomes than , then the signal paths almost become
  - ↳ called " "
  - ↳ Let's analyze far field effects