

# Phased array antennas

- **An array of antennas transmitting phase-delayed copies**
  - Main beam direction controlled by phase shift
  - Electrical phase-shifters → fast scanning
- **Applications**
  - Electrically scanned radars
  - Directed communication (5G)
  - Satellite communication

- $E_{\text{tot}}(\theta, \varphi) = E_{\text{element}}(\theta, \varphi) * AF(\theta, \varphi)$
- **AF = array factor**

