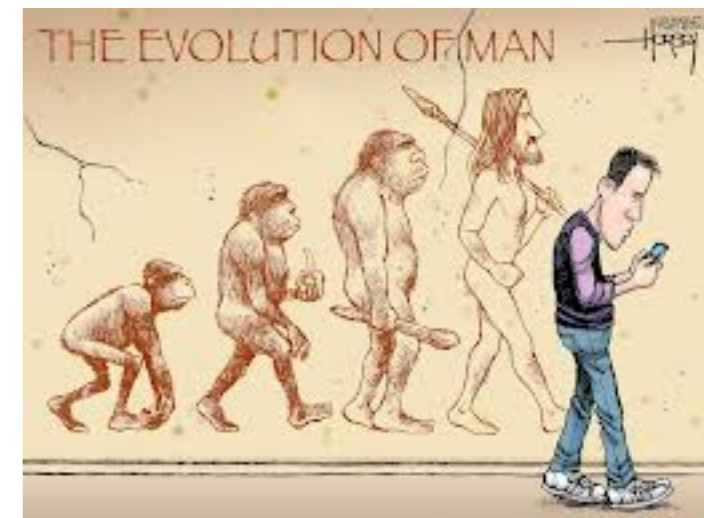


# Interference management in wireless networks

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Elza Erkip  
Electrical and Computer Engineering  
NYU Poly

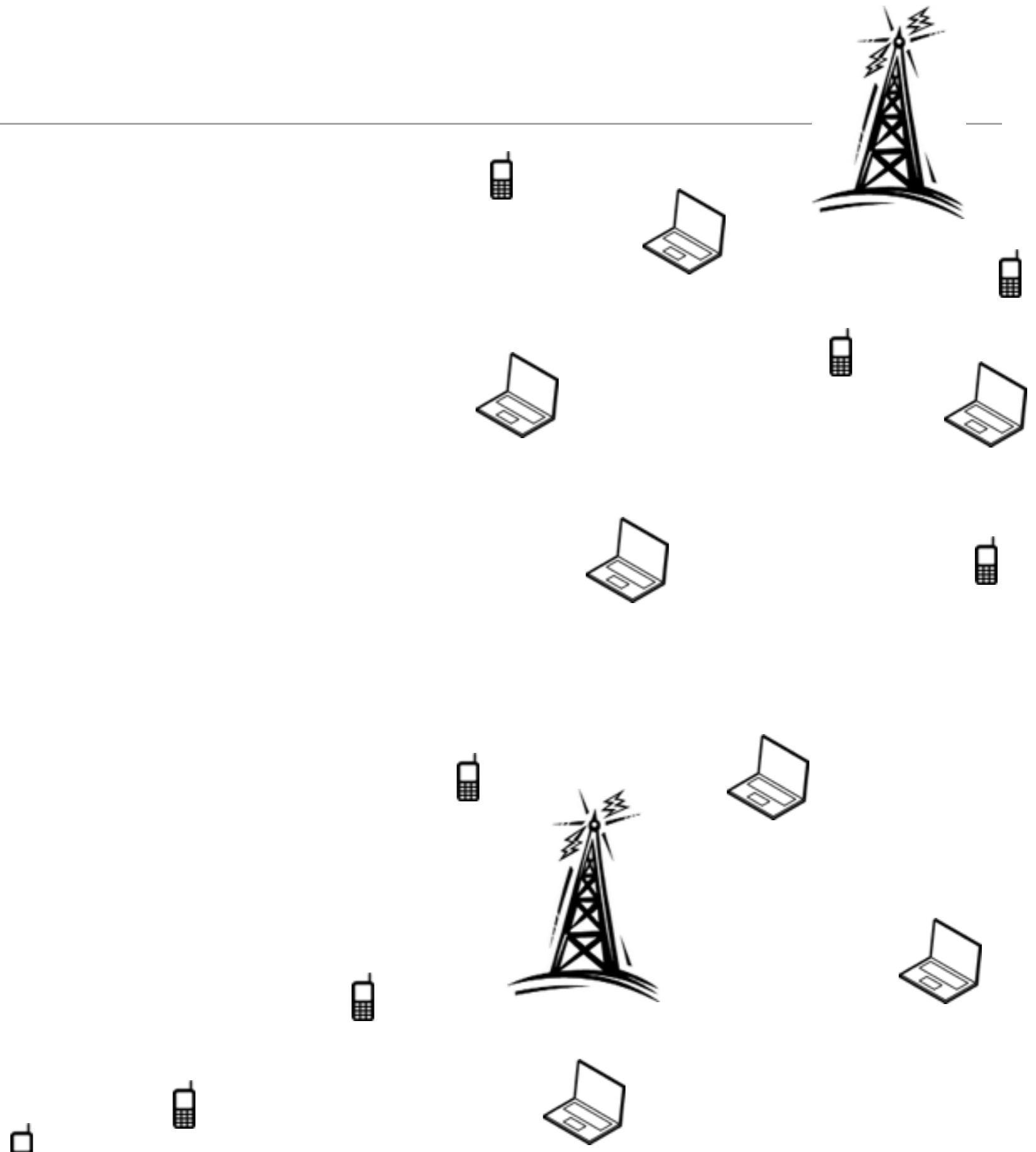
Behnaam Aazhang  
Electrical and Computer Engineering  
Rice University



# wireless network

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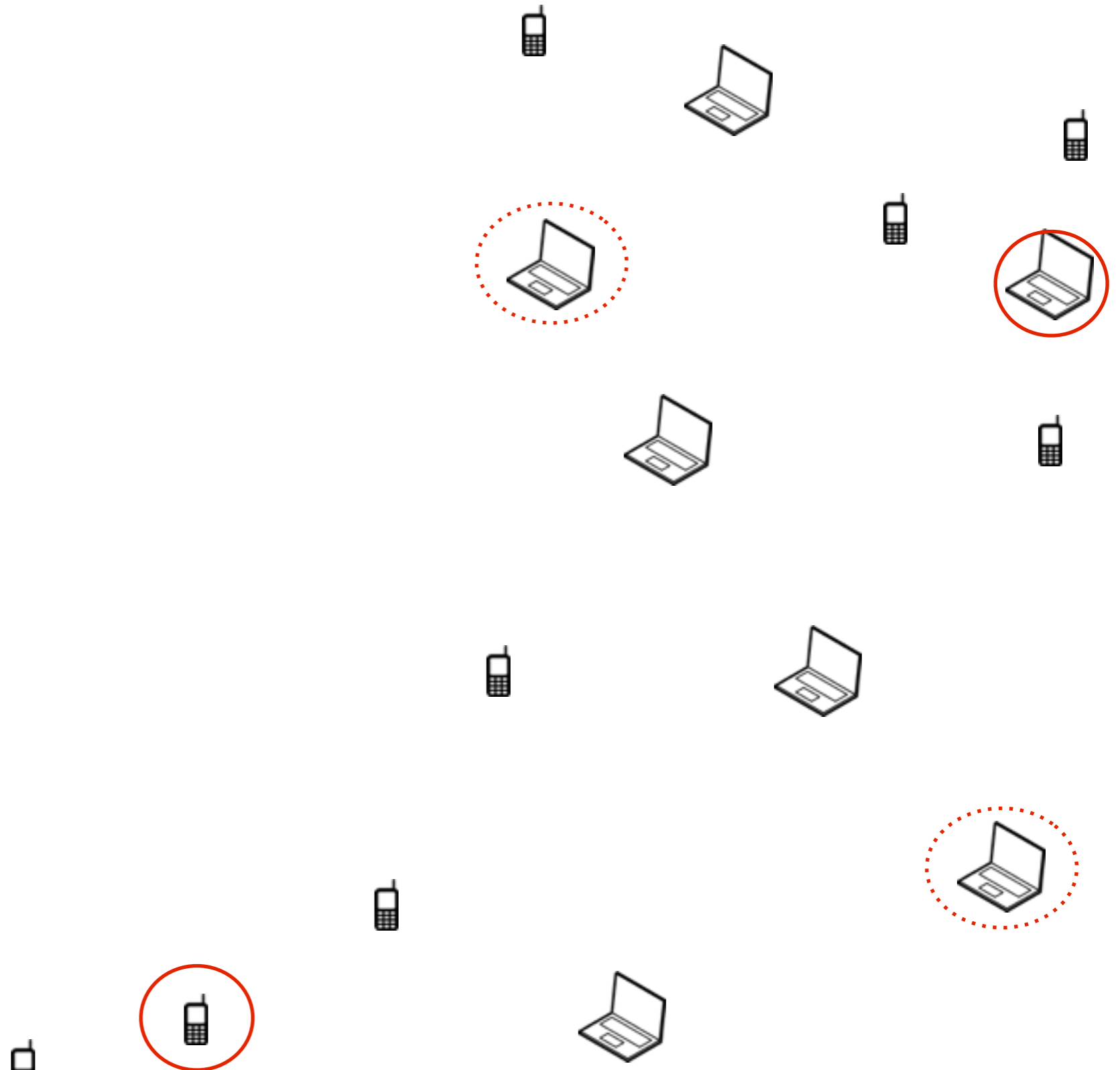
- with infrastructure



# wireless network

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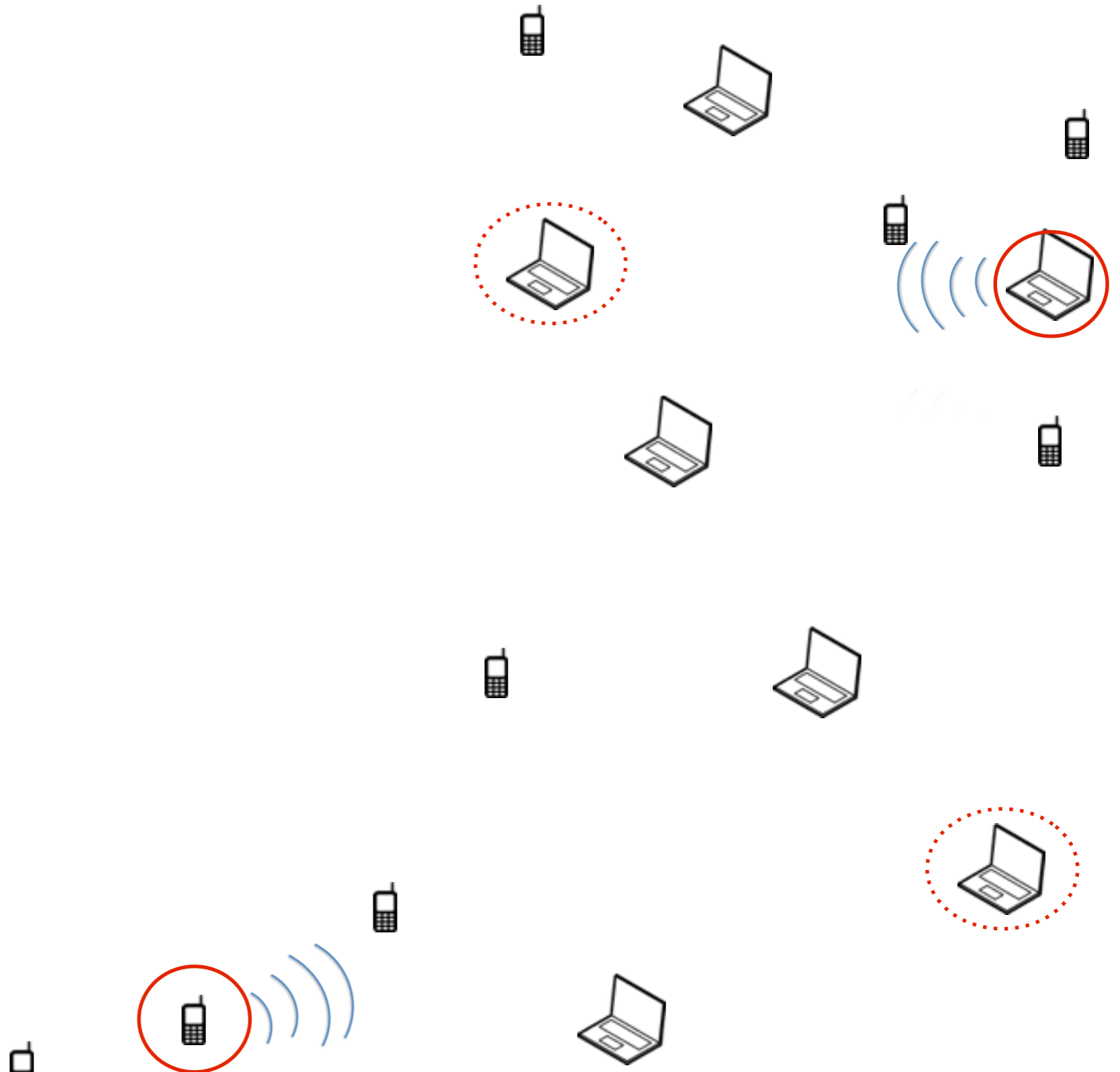
- no infrastructure
  - ad hoc
  - wireless multihop



# context

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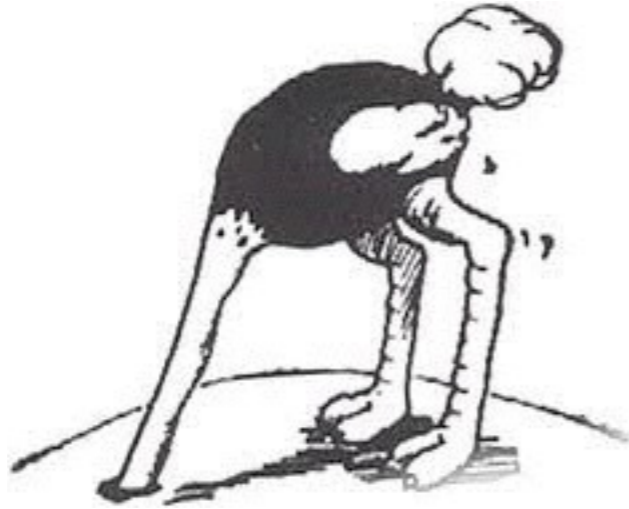
- network
  - fixed spectrum
  - tremendous growth
- applications
- users



# interference

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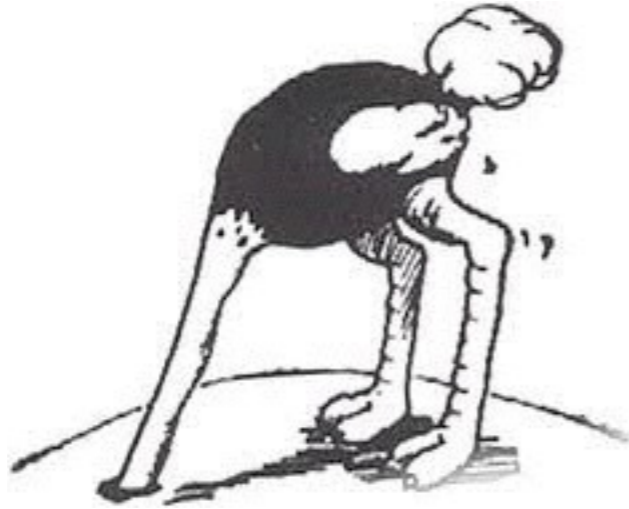
- avoiding



# interference

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- avoiding
- coexisting

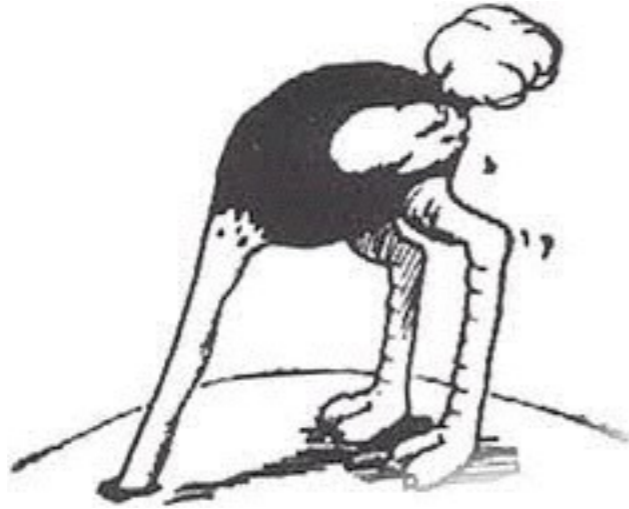


C☉e♂♂i☯†

# interference

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- avoiding
- coexisting
- harnessing



Coe∃ist



# challenges

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- complexity
- overhead
- performance gains



# exaggerated

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- network
  - fixed spectrum
  - tremendous growth
- applications
- users



# interference

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- Bobak Nazer, Boston
  - information theoretic view
  - compute and forward
  - integer forcing

# interference

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- Krishna Narayanan, Texas A&M
- coding view
  - compute and forward
  - constellation and code design

# interference

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- Dongning Guo, Northwestern
- coexistence
  - LTE deployed in unlicensed band
    - game theoretic
    - control interference

# interference

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- Osvaldo Simeone, NJIT
- cloud radio access network—LTE
  - interference mitigation onto the cloud
    - multiterminal compression
    - compute and forward