Searching for Optimal Soln.

- Energy/Latency Cost $f_\mathcal{E}$

$D$: Length (distance between A & B)

$R$: Transmission Rate

$L$: Length of packet

$t_{AB} = \frac{L}{R} \text{ (transmission time)} + \text{propagation time}$

$D$: Speed of signal in the medium (max of $c/\eta$)

In general, cannot be neglected

node processing delay
queuing delay

Speed of light

usually negligible
Energy Cost

transmission cost \[ E_A(D, \ell) = (K_1 + D^\alpha) L \quad 2 \leq \alpha \leq 5 \]

depends on the medium and other factors.

reception cost \[ E_B(L) = K_2 L \]

In reality some signalling has to be done for reliable transmission.
1. Try to acquire channel.

2. Send data

3. Rec Ack

\[ L = \text{Expt} \left( \frac{L_{RTS}}{R} + \frac{L_{CTS}}{R} \right) + \frac{L_{DATA}}{R} + \frac{L_{Ack}}{R} \]

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See paper by Biunchi (delay due to random backoff) on Performance Modeling of IEEE 802.11
Centralized versus Distributed.

Centralized process

BS - BS does all the processing

L - Full information

D - D

D - D

D - D

Distributed process

BS - BS does additional processing to compute final result.

Cannot be ignored

Can be ignored

\[ \frac{L}{R} + \text{processing at BS} \]

\[ \frac{L}{R} + \text{processing time at BS} \]
Overlaps.
Harvey's presentation:

Q: How was mobility modeled and does this mobility modeling make sense for this paper?
- Random Way Point: people wandering about in an area.

Q: Comparison with AODV - is it relevant?
Ad hoc Distance Vector

DV: proactive

Q: Metrics of Comparison
- Avg. End to End delay
- Successful % of packet delivery
- Routing overhead
- Quality of Routing
Q: Is assumption about bidirectionality a good assumption?