Redes Sem Fio

Programa

- Introdução: Visão Geral, Aplicações, Camadas de Redes e Arquiteturas de Redes
- Background: Unidades de Medidas, SNR, SINR, Capacidade da Rede.
- Propagação de Sinal: espaço livre, dois raios, multi-caminhos, sombreamento, descrição estatística do canal sem fio.
- Modelos de Conectividade: Modelo Protocolo, Modelo Físico, Modelo de Disco, UDG, QUDG, modelos de interferência.
- Algoritmos de Grafos aplicados a Redes Sem Fio: Cobertura de Vértices, Conjunto Dominante, Conjunto Independente, Coloração de Grafos.
- Métricas de Roteamento: número de saltos, ETX, PER, ETT, BG-ETT, WCETT.
- Simuladores: COOJA, TOSSIM, Sinalgo, OMNET, SUMO, Veins.
- Modelos de Mobilidade:
    - Modelos de Mobilidade de Entidades: Random Walk, Random Waypoint, Random Direction Model, Probability Random Walk, Boundless Simulation Area, Gauss-Markov, City Section
    - Modelos de Mobilidade de Grupos: Exponential Correlated Random Mobility Model, Column Mobility Model, Nomadic Community Mobility Model, Pursue Mobility Model, Reference Point Group Mobility Model
    - Urban Mobility Models
    - Meandering Mobility Model
- Protocolos de Roteamento:
    - Distance Vector, Link State
    - Mobile IP
    - Pro átivos: DSDV, OLSR
    - Reativos Protocols: DSR, AODV
    - Híbridos: ZRP
    - Geograficos: GPSR
    - Roteamento Beacon Vector
- Network Coding: vantagens, aplicabilidade, Fluxo máximo menor corte, capacidade multicast, codificação linear, codificação aleatória linear, problema da coleta de cupons, protocolos.
- Padrões: 802.11, Zigbee, 6LoWPAN
- Redes de Sensores Sem Fio
- Redes de Sensores Aquáticas

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