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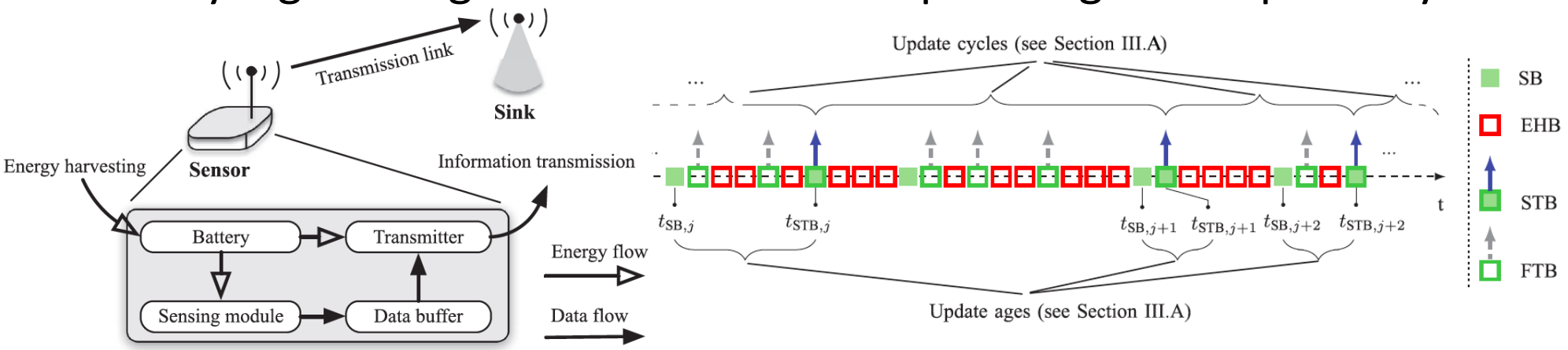
A Rate Splitting Strategy for Massive MIMO With Imperfect CSIT

- Mingbo Dai, Bruno Clerckx, David Gesbert, Giuseppe Caire
- Multiuser massive MIMO BF system with imperfect CSIT
  - Rate splitting (RS): User 1's data split into "public" and "private" parts
  - Public part: decodable at all users (treating all private msgs as noise)
  - Private part: only needs to be decodable at the respective user
  - For the private part: regularized ZF beamforming
  - For the public part: choose BF vec that max the min rate achievable at all users (closed-form solution is provided)
- Hierarchical RS: Two public parts
  - Part 1: decodable at all users; Part 2: decodable at a subset of users
  - Optimize subset selection and BF vecs for Parts 1 and 2
- Analyze the achievable rate with RS and HRS show improvement over non-splitting (conventional) systems

Energy Harvesting Wireless Sensor Networks: Delay Analysis Considering Energy Costs of Sensing and Transmission

- Wanchun Liu, Xiangyun Zhou, Salman Durrani, Hani Mehrpouyan, and Steven D. Blostein
- Periodic sensing of a random field
- Two metrics:
  - Update age: Sensing time to sink-delivery time delay
  - Update cycle: Time between two consecutive updates
- Consider both sensing energy cost and transmission energy cost
- Rayleigh fading: derive statistics of update age and update cycle

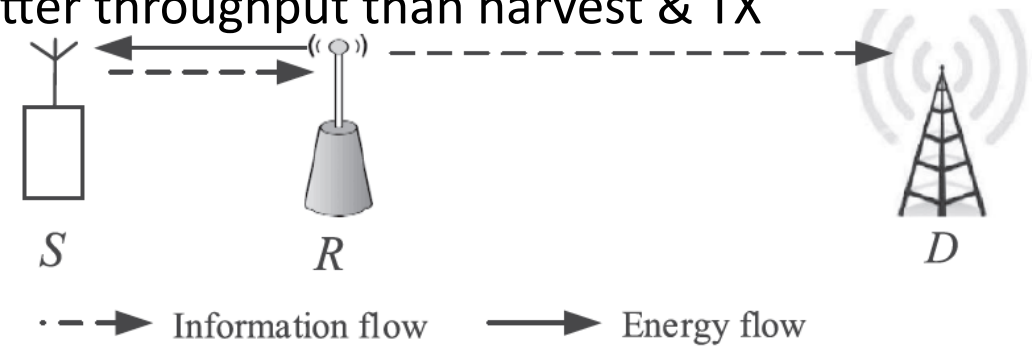


Joint Subcarrier and Power Allocation Methods in Full Duplex Wireless Powered Communication Networks for OFDM Systems

- Hanjin Kim, Hoon Lee, Minki Ahn, Han-Bae Kong, Inkyu Lee
- Wireless powered full-duplex AP: transmits energy in the downlink and receives information in the uplink
- Subcarrier scheduling and power allocation to max sum rate
- Use Lagrange duality to solve the nonconvex opt. problem
- In the presence of self-interference: iterative algorithm based on projected gradient proposed
- Simulations to empirically illustrate performance

Throughput of Wireless-Powered Relaying Systems With Buffer-Aided Hybrid Relay

- Sheng Luo, Gang Yang, and Kah Chan The
- S harvests RF energy from R before TX data
- R Txs data to D simultaneously while transferring energy to S
- R has a data buffer – can store packets
- Two protocols:
  - Harvest & TX: S Txes once enough energy is harvested
  - Mode adaptation: Based on CSI, R decides who Txes in each slot
- Throughput expressions for both protocols are derived
  - Mode adaptation provides better throughput than harvest & TX
- Simulations



Rate-Adaptive Feedback With Bayesian Compressive Sensing in Multiuser MIMO Beamforming Systems

- Xin-Lin Huang, Jun Wu, Yonggang Wen, Fei Hu, Yi Wang, and Tao Jiang

Online Power Control Optimization for Wireless Transmission With Energy Harvesting and Storage

- Fatemeh Amirnavaei and Min Dong

Pilot Decontamination in Wideband Massive MIMO Systems by Exploiting Channel Sparsity

- Zhilin Chen and Chenyang Yang