Work in the area of Cluster 2 at Royal Institute of Technology (KTH)

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Our Background in the Area

• Optimal Downlink beamforming
  – MISO, Multiple cells.
  – Based on exact CSI or covariance feedback.
  – Minimize total TX power given SINR constraints.
  – Mainly for use as benchmark in system simulations.

• Extensions:
  – Optimal allocation of terminals to base stations.
  – Robustness to channel uncertainties.
  – Additional constraints.
  – MIMO beamforming/spatial multiplexing
  – Admission control and scheduling
Our Background, cont.

- Opportunistic Beamforming for OFDMA:
  - Dumb Antennas
  - Schemes to minimize feedback. Investigate trade-off, feedback rate $\Leftrightarrow$ performance.
  - Fairness issues in the scheduler.

- System comparisons Smart $\Leftrightarrow$ Dumb antennas

- Combining covariance information and low-rate short-term feedback.
SELECTED REFERENCES


