

# Weekly Report (2010-11-14)

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- 1) Read several seminal papers on cooperative communication. The original objective of cooperative communication is to increase the quality of received signal by combating the multi-path fading with space-diversity. In full-duplex cases, the spectral efficiency, which is defined as the reliable transmission rate, is usually increased without extra power. However, in half-duplex scenarios, more power consumption may be required to maintain the same spectral efficiency. The reason is that, due to half-duplex, half of the freedom in time dimension is wasted. As a result, the analytical focus is on the outage probability for a fixed reliable transmission rate VS. the order of power instead of the maximum achievable capacity.
- 2) Since the analysis on cooperative communication involves sophisticated mathematics, I read some literature on probability.
- 3) Help Prof. Lau to prepare part of the project proposal, e.g. distributed solution to minimum-latency aggregation problem.
- 4) Design the assignment 3 for C9602. I am working on the sample solution and marking scheme now.