

6.452 PRINCIPLES OF WIRELESS COMMUNICATION

Project

Spring 2006

**Issued:** Wednesday, Ses #20

**Due:** Wednesday, Ses #24

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In this project, you will be writing a review of a paper in the wireless communication area, as if you had received such a request for review from an associate editor of a journal. This provides you an opportunity to apply your understanding of concepts developed in class, as well as an opportunity to begin to learn how to prepare a useful paper review.

In terms of length, you should aim for a review of approximately 2-3 pages, though there are no strict length constraints. You are welcome to structure your review in any way that seems most natural or logical to you. Your review should be critical analysis and evaluation of the strengths and weaknesses of the work, together with specific recommendations for ways the manuscript can be improved. **Note:** While the final step of a real review is to make a recommendation in the form of “accept”, “revise”, or “reject”, you can omit this step.

You will choose one paper from the list we have provided in the readings section.

Each of you will work independently and prepare an independent review, but there is no requirement that you work on different papers. Choose whichever paper seems of most interest to you; all are of approximately the same technical level. Also, while some of the papers on the list are actual preprints, some are reprints. For the purposes of this exercise, treat all these papers as if they were unpublished manuscripts from the point of view of your review. **Note:** Do not be biased by how well known the authors are or are not in preparing your review!

As the well-known mathematician Paul Halmos once wrote, the goal of the reviewer is to determine whether the work is 1) new, 2) true, and 3) interesting. A paper should meet *all* three criteria, so you should assess each of these aspects of the paper to the best of your abilities and experience. **Note:** you may find it useful to read portions of some related papers to help you in preparing your review. However, you are not being asked to do an extensive analysis of the background literature; your review should be principally based on applying what you have learned from class.

Some questions to think about on different aspects of the manuscript when writing your review:

**Problem Formulation** How important is the problem being addressed to practice? What are the assumptions made? Are the final results sensitive to these assumptions? Can

the main ideas and approach of the paper be applied to more general cases when some of the assumptions are eliminated? What are the limits of applicability?

**Technical Development** Is there an alternative way to derive these results? Are the results correct? Can you come up with illustrating examples, or even better, counter examples? Do the results warrant the level of mathematics used (i.e., does the end justify the means)? Is there an approximation that can arrive at the essentially the same results more easily or with more intuition? Is there a geometric picture one can develop to better understand the results?

**Exposition** Are the ideas and results organized in a logical order? Is it easy or hard to read, and why? How could it be better laid out? Think about how would you present the same results if you were to have developed them. **Note:** you need not to comment on the typographic or small grammatical errors.