ECE511/PSY511 PSYCHOPHYSICS

A Joint Offering by the School of Electrical and Computer Engineering

And the Department of Psychological Sciences

Purdue University

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HW #6

Topic: Adaptive Procedures

(1) Start "OfflineExperiments.jar" and find "Part III. Adaptive Methods → Line-Length Discrimination (3IFC)." Please read through the rest of this problem before starting the experiment.

    a. Complete the experiment and attach a screenshot of the results screen.

    b. As an experimenter, what instructions would you have given to the participant prior to starting the experiment?

    c. What up-down rules were implemented and how do you know?

    d. Given the experimental results, would you say that your data converged and why?

    e. How long did it take you to run the experiment? Are there steps in the experiment that could have been eliminated to speed up the experiment without affecting its results?

(2) Describe how to estimate DL using one-interval adaptive psychophysical methods (e.g., simple and transformed up-down methods). In your discussion, clearly state the rules for transition in each adaptive method that you propose to use, and the corresponding percentile points to be estimated from each method. Explain how PSE and DL can be obtained from the results of your proposed adaptive experiments.

(3) What are the differences between a simple up-down adaptive procedure and a double-random staircase procedure? In general, what are the benefits of interleaved adaptive methods?