

# ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

School of Computer and Communication Sciences

**Handout 5**  
Homework 7

Modern Coding Theory  
April 16, 2008

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PROBLEM 1. Implement the basic parallel flipping algorithm for the  $(4, 5)$ -regular ensemble of length  $n = 1000$  and the BSC with parameter  $\epsilon$ . Please hand in, (i) a printout of the code, (ii) a plot of the error probability as a function of the channel parameter.

Bonus: Estimate the threshold of this combination by looking at large blocklengths and determining the largest channel parameter for which the decoder succeeds with “high probability.”