

**Homework #6 Recursive Least Squares Adaptive Filters**  
**(due Friday, Nov. 1, 2002)**

Build the RLS.M tool using the attached addendum.

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**Experiments**

1) (Adaptive Equalization) Recreate the results from Experiment 1 p. 581. Note that in order to recreate the plots exactly you need to do the following *for this homework only*:

(i) In our RLS tool, we return the a posteriori error,  $e(n)$  in order to make fair comparisons against other algorithms. However, the textbook plots are of the a priori error,  $\xi(n)$ . Therefore in order to recreate the plots, you will need to modify your RLS tool as follows. In the main loop, code

```
e(n) = xi(n); % return the a priori estimation error
```

(ii) Start the adaptation at  $n = M$  not the usual  $n = 1$ .

2) (Adaptive Equalization) Recreate the results from Experiment 2 p. 582. See note from 1).

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**Text**

Chapter 13 #3, 4