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Solution Number: 36350

Date Last Modified: 2004-01-09

Product: Signal Processing Toolbox 6.1 ==> Current Version

Platform: All Builds

Problem Description

Why does LPC return a different prediction error than ARYULE in Signal Processing Toolbox 6.1 (R13SP1)?

The prediction error and the polynomial should be the same. But in some cases, such as in the example below, they are not.

```
b = remez(13, [0 0.5 0.6 1], [1 1 0 0]);
[a,e]= aryule(b,7);
[d,po] = lpc(b,7);
```

Solution:

This has been verified as a bug in Signal Processing Toolbox 6.1 (R13SP1) in the way that it handles prediction error.

Currently, you can download a revised version of an M-file that fixes the problem. Here are the required steps:

1. Quit MATLAB
2. Rename the following M-file:

$MATLAB\toolbox\signal\signal\lpc.m
(where $MATLAB = MATLAB's root directory on your machine)

Rename the file to lpc.m.old

3. Download the following file from our anonymous FTP server:

ftp://ftp.mathworks.com/pub/tech-support/solutions/s36350/lpc.m

and place it in the same directory mentioned in step 2.

To login to our FTP server use ' anonymous ' as your username and use your e-mail address when prompted for a password.

4. Restart MATLAB
5. After restarting MATLAB, issue the following command at the MATLAB prompt :

```
rehash toolboxcache
```

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