

EXPERIMENT 5: Linear Predictive Analysis of Speech

```
clc;

clear;

close all;

%% Load Speech Signal

[speech, fs] = audioread('speech.wav');

%% Pre-emphasis

speech_emph = filter([1 -0.97], 1, speech);

%% Frame Selection

frame_length = round(0.025 * fs);

frame = speech_emph(1:frame_length) .* hamming(frame_length);

%% LPC Computation

p = 12;

a = lpc(frame, p);

%% Frequency Response

[H, w] = freqz(1, a, 512, fs);

plot(w, 20*log10(abs(H)));

xlabel('Frequency (Hz)'); ylabel('Magnitude (dB)');

title('LPC Spectrum');

grid on;
```