# Estimation of Damping in Balanced Configuration

Unfiltered Data:

Filtered Plot:



Zooming in on the filtered plot, so that the first few clean peaks are visible so that the logarithmic decrement can be estimated:  
Peak 1(4.648,0.06721) , Peak 2 (4.741,0.05139) , Peak 3(4.833,0.03458) 



Use the Logarithmic Decrement:  
 and Displacement Amplitude,

Next, using:

And substituting with known values:

# Estimation of Damping Coefficient from Unbalanced Case, 6.3hz

Unfiltered Data:



Filtered Plot:  


Zoomed in on the First 3 waves:  
-Pick the 1st peak(Signal Voltage = 0.102) , and the 4th peak(Signal Voltage = 0.09)



Use the Logarithmic Decrement:  
 and Displacement Amplitude,

Next, using:

And substituting with known values:

Therefore, via the logarithmic decrement, the damping coefficient is estimated to be approximated 0.0208.