**For white noise input:**

F = 10 \* randn(length(taxis), 1);

P.kl = 2e4; P.kn = 0\*5e12;

P.cl = 50; P.cn = 1e8;

T = 200; dt = 2^-12;

The parameters give best results. Clear 2 modes of resonances for nonlinear stiffness, with coherence values at around 0.5. System too overdamped in the case for non-linear damping, still a bit too linear (coherence ~ 0.9)

Does it matter that the forced input (F) and the output displacement (x) are off by a magnitude of 10^6?

**For pink noise input:**

F = 1000\* pinknoise(length(taxis));

Parameters above give a bit too non-linear results. For the nonlinear stiffness case, the coherence drops to nearly 0.1. For non-linear damping, the simulator diverges.

Parameters:

P.kl = 2e4; P.kn = 0\*1e11;

P.cl = 50; P.cn = 1e6;

T = 200; dt = 2^-12;

Interestingly, for pink noise input, with the non-linear stiffness, the two resonance peaks are less clear.

**For white noise input with a Butterworth filter:**

fc = 50;

fs = 1/dt;

[b,a] = butter(2,fc/(fs/2),'low');

F = filter(b,a,F);

For the non-linear stiffness case, the original parameters (with stiffness) cause too much nonlinearity.

% Equation parameters

P.kl = 2e4; P.kn = 1e12;

P.cl = 50; P.cn = 1e7;

T = 200; dt = 2^-12;

Parameters in a similar range as above give the best results.