

Design and implement an active shaker control system for a variety of desired forcing functions and a variety of structural configurations. Additionally, devise a real-time, online estimation strategy to allow sine dwell at a natural frequency, even as the natural frequency decreases due to the accumulation of damage. Accelerometers and force transducers will be used as sensors. The real-time control will be designed using Matlab/Simulink and implemented using a PC running Matlab's xPC Target and equipped with a data acquisition system. This project is motivated by a desire to assess the effects of shaker dynamics in certain structural health monitoring applications.