Dan Baima

Continuation of Free Hanging Rod Tests on 11/21/14. –Notes-

**Disclaimer: This is from memory (I did not take many notes this night) and should be double checked with Dylan**

* Retains similar hanging setup as before, with the arms of chairs being used now instead of lab seats.
* Loose (not tied) rubber bands hold rod as to minimize nodal effects.
* Repeated all axial button piezo tests to achieve non-clipped results for proper Fourier Analysis results: (PZT was taped on end (butt) of steel rod and soft strikes on other end of rod as well as midpoint were conducted, making sure no clipping occurred)
* Moved PZT to be perpendicular with the length of rod (not on butt of steel rod) but rather pressed against round exterior. Repeated axial and transverse tapping
* A brief trial was conducted attempting to use the PVDF (strip) to impart a signal onto the rod through the use of a signal generator set at Sin wave of ~ 425 Hz (from previous calculated best frequency) No audible sound was heard, most likely due to small amplitude because of inappropriate sound card & PVDF specifications (not optimized for this sort of signal driving)
* Tested PZT taped on end of rod, being driven by signal generator, the same as before. A slight audible buzz may have been heard. PVDF strip was positioned at other end of rod (taped lengthwise along rod) and used to listen for vibrations. Unexpected and unknown recordings occurred. (alien noises)

Procedure for free hanging tests:

1. Hang rod from 4 isolated simple supports, using loose rubber bands to evenly support rod ensuring it has enough room to freely sway slightly.

2. Attach PZT sensor to the (butt) endpoint of the hanging rod using firm pressure from electrical tape.

4. Strike rod longitudily (from other endpoint) with a metal hammer and record incident vibrations in Audacity from contact microphone feeding laptop computer signal through headphone jack.

5. Repeat above process, this time striking the rod with a rubber mallet.

6. Repeat striking process for a transverse wave (strike the side of the rod) near the endpoint of the rod opposite the PZT sensor.