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*Totally Tubular: Calculating the End Correction to Find the Wavelength of a Wave in an Open Tube*

My experiment is based around a lab done where you calculate the speed of sound in an air column. My goal was to find out what the end correction need to be in order to find the anti-node that occurs just outside the tube. I did some research and found two commonly used end corrections, one being 1.6 and the other being 1.2. For my experiment, I created five expandable tubes with different diameters. I then put the tubes through a box and played a frequency through one end of the tube. I found the length of tube that produced the loudest sound and kept the tube at that length. I then played frequencies of 200Hz, 400Hz, 600Hz, 800Hz, and 1000Hz each five times through the tube. I used the sound level meter to see when the level of sound stopped going down and began to increase again, which is where the anti-node occurred. After averaging out all of my results, I took my average distance for each diameter and divided it by the diameter with which it correlated. Once I averaged all of those out, I came up with a final end correction of 1.27. This experiment allowed me to take an interesting turn on a common experiment. If I were to continue with it, I would want to test more extreme diameters and less common frequencies just to see how the results differed.