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Frequency Dependence of End Corrections for a Pipe of Circular Cross Section MATTHEW KRUMM[1], SAM MATTESON[2], Department of Physics, University of North Texas — This experiment is designed to test the accuracy of current theories regarding end effects, the phenomenon that causes sound waves to appear to have traveled farther than they actually have, in cylindrical pipes. To measure this effect, a white noise generator was placed near the open end of a cylinder with a movable stop so as to allow the effective length to be changed, and the sound waves produced in the cylinder to be measured. The aforementioned waves were analyzed using SpectralPlus software in order to determine resonant frequencies of the pipe which were compared to theoretical predictions. This process revealed that end effects are indeed present and that they are frequency-dependent. The experiment was repeated with varying length and diameter of cylinders to ascertain the exact dependence of end effects on those parameters.

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