Abstract Submitted
for the TSS13 Meeting of
The American Physical Society

Absorption Properties of NASA Flight Approved Materials and other Testable Samples MATTHEW SISSON, JUSTIN MANN, WILLIAM V. SLATON, University of Central Arkansas — The purpose of this project is to analyze the acoustic absorption properties of various flight approved materials currently and potentially used by NASA in its work with the International Space Station. These materials, consisting of manufactured felts and foams, were used in an experimental procedure utilizing an impedance tube. By simultaneously measuring the forward and backward components of generated plane waves within the tube, sound absorption coefficients were obtained for over 30 specific materials. Understanding these absorption properties can lead into the discussion of how to specifically arrange and utilize the materials to both maximize efficiency based upon a material's density and minimize excess ambient noise on manned space vehicles. These possible applications not only potentially affect astronauts on current and future missions for NASA but can also be directed in situations involving the choice of materials in auditoriums, concert halls, classrooms, etc.

Matthew Sisson
University of Central Arkansas

Date submitted: 01 Mar 2013 Electronic form version 1.4