Abstract Submitted
for the 4CF12 Meeting of
The American Physical Society

Radiation of Sawtooth Waves from the End of an Open Pipe RACHAEL BAKAITIS, JOSH BODON, KENT GEE, DEREK THOMAS, Brigham Young University — It is known, that because of nonlinear propagation distortion, a sinusoidal wave is transformed into a sawtooth-like wave as it travels through a pipe. It has been observed that the sawtooth wave, when measured immediately after it exits a pipe, has a form similar to a delta function. Currently this behavior is not understood, but has potential application to radiation of sound from brass instruments and rocket motors. Building on previous work in the 1970s by Blackstock and Wright, the purpose of the current research is to better understand the radiation of sawtooth waves from the open end of a circular pipe. Nonlinear propagation theory, the experimental apparatus and considerations, and some preliminary results are described.

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Date submitted: 21 Sep 2012 Electronic form version 1.4