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### An Electromagnetic/Acoustic Propagation Experiment

Authors: [H. T. Banks](#); [NORTH CAROLINA STATE UNIV AT RALEIGH CENTER FOR RESEARCH IN SCIENTIFIC COMPUTATION](#)

**Abstract:** We proposed experiments to investigate electromagnetic acoustic waves interaction as part of a technology for pulsed microwave interrogation of materials. The technology involves using reflections of electromagnetic pulses from moving acoustic wavefronts to detect the presence of and determine composition (dielectric and geometric) of hidden objects. Applications of interest to DoD involve non-invasive interrogation of tissue, look-down surveillance and camouflage penetration (e.g., tanks under trees, and subsurface mines and bunkers) and environmental monitoring.

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