



High-altitude Infrasound Propagation Experiment

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Experimental verification of propagation predictions and sensor performance for infrasound frequencies that propagate long distance (greater than 100 km) are difficult to perform due to the rarity of controlled sources. If the source is elevated, the lower atmospheric pressure allows an explosion of a given charge weight to expand further during the supersonic phase, resulting in a lower fundamental frequency. A 50-lb charge exploded at 40 km yields a fundamental frequency similar to a 500-ton explosion at ground level. During the fall of 2005 and the winter and summer of 2006, experiments were conducted at White Sands Missile Range, NM, where an Orion rocket lifted a 50-lb explosive charge to altitudes between 30 and 40 km. Launches occurred near 0200 and 0600 MST. Portable infrasound arrays to record events were deployed in New Mexico, Texas, Arizona, and California to complement permanent arrays. Infrasound recordings were supplemented with extensive meteorological measurements. Data analysis is in a preliminary stage. The High Altitude Infrasound Propagation Experiment resulted from collaboration between the University of Mississippi, several U. S. Army and Navy commands, Southern Methodist University, University of Hawaii, University of California at San Diego, University of Alaska at Fairbanks, BBN Technologies, SAIC, and Los Alamos National Laboratory.