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**Multi Station Frequency Response and Polarization of ELF/VLF Signals Generated via Ionospheric Modification** ASHANTHI MAXWORTH, MARK GOLKOWSKI, University of Colorado Denver, UNIVERSITY OF COLORADO DENVER TEAM — ELF/VLF wave generation via HF modulated ionospheric heating has been practiced for many years as a unique way to generate waves in the ELF/VLF band (3 Hz – 30 kHz). This paper presents experimental results and associated theoretical modeling from work performed at the High Frequency Active Auroral Research Program (*HAARP*) facility in Alaska, USA. An experiment was designed to investigate the modulation frequency dependence of the generated ELF/VLF signal amplitudes and polarization at multiple sites at distances of 37 km, 50 km and 99 km from the facility. While no difference is observed for X mode versus O mode modulation of the heating wave, it is found that ELF/VLF amplitude and polarization as a function of modulated ELF/VLF frequency is different for each site. An ionospheric heating code is used to determine the primary current sources leading to the observations.

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