

Dynamic D-Region Heating Experiments at HAARP

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The University of Florida conducted a large number of D-region modification experiments at the High-frequency Active Auroral Research Program (HAARP) observatory between 2007 and 2014. The scientific focus of the research varied from improving the efficiency of ELF/VLF wave generation, developing new electrojet-independent techniques for producing ELF/VLF waves, and studying general plasma dynamics under HF-heated conditions. We have demonstrated several important implications of HF cross-modulation effects, including "Doppler Spoofing" on HF radio waves. This paper highlights the best experimental results collected between 2007 and 2014 and compares the experimental results with the predictions of an HF heating model to provide context and guidance for future HF heating experiments.