**First Successful Application of Dynasonde Data Analysis Methods with the Data from Canadian Advanced Digital Ionosonde (CADI)**

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The 'Canadian Advanced Digital Ionosonde' (CADI) developed at the University of Western Ontario can transmit any desired pattern of radio frequencies through its use of a simple list; its use of an array of spaced antennas into 4 parallel receivers, and output data files of signal quadrature components at small (20 microsecond) intervals throughout its listening window (0 – 1020 km of range delay) are features in common with the NOAA-Boulder 'Dynasonde' of 1980 and its contemporary version, the HF Radar designed and manufactured by Scion Associates Inc. Thus the advanced data analysis system developed for the latter instruments (the Dynasonde 21 Software Suite) should be applicable to data from the CADI.

We report here several successful experiments of this kind. Initially, with a 1-receiver CADI located at London, Ontario; we fully demonstrate the Dynasonde's use of an 8-pulse frequency set employing offsets of [+1, -3, +3 and -1] kHz at the pulse repetition frequency 40 Hz, with which to obtain high-precision (~ 0.1 km) Stationary Group Range (commonly called 'virtual height') while estimating Doppler over that $\frac{8}{40}$-second time interval. This is accomplished by autonomous data-processing on each echo of the 896 pulse sets. We demonstrate that many Dynasonde-specific data analysis routines (PRETEC echo recognition; noise level and impulsive noise rejection; echo classification into traces; trace selection; plasma density inversion NeXtYz) can operate autonomously on the CADI data. Later experiments will be reported with data from a 4-receiver CADI at the Delaware, Ontario field site.