



Testing the DRM digital radio broadcast emissions as a tool for ionospheric investigation

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New standard of digital radio broadcasting, the DRM (Digital Radio Mondiale), has been designed to overcome typical short wave radio channel difficulties. These are the multipath propagation, leading to strong selective fading, and fast temporal changes of the received signal level, both related to the properties of the ionosphere along the path of propagation.

In particular, some of the carriers in the COFDM transmission, called reference pilots, are used by the receiver to estimate the current state of the radio channel in order to be able to demodulate properly the received signal. Thus they can provide some information on the ionosphere along the propagation path with a relatively high frequency (tenths of symbols in a second) during the time of the emission.

We have started observations of such carriers in selected frequency channels (standard broadcast emissions), using a few DRM receivers. We test the ability of such observations to provide a useful information about the current state of the ionosphere in its lower part. We compare such information to the standard data obtained from the usual ionosondes.