

Digital Stereo Enhancement to the TIGER Radar System

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Abstract

The Tasman International Geospace Environment Radar (TIGER), which is part of the global SuperDARN network, is a dual HF radar system with overlapping footprints designed to map ionospheric motions by detecting ionospheric scatter. The stereo SuperDARN radar concept is an interesting new innovation that effectively enables two radars to operate from the one site, sharing expensive infrastructure items, such as antennas and RF transmitters. Although improvements continue to be made to the SuperDARN radar concept, its operation remains centered around 20 year old analogue technology. The opportunity to provide enhanced operations through the implementation of a digital SuperDARN radar system has been identified. This paper presents current state of work being undertaken on the development of a Digital SuperDARN Radar and explains the proposal to firstly implement the digital radar as a digital channel in a hybrid analogue/digital stereo radar system, with the ultimate aim being the construction of fully a digital stereo radar.