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## **Oceanographic Research: A new Application for SuperDARN Radars**

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Large military HF over-the-horizon radars (OTHRs) can measure ocean wave heights, surface currents, and surface wind directions over vast, remote regions. This is achieved by analysing the Bragg backscatter from wind-driven surface ocean waves. This presentation will demonstrate the potential for relatively compact Super Dual Auroral Radar Network (SuperDARN) radars to acquire valuable wind-wave direction information. This study utilises the TIGER Tasmanian and New Zealand Unwin radars, key elements of the Southern Hemisphere component of SuperDARN. Detection of Bragg backscatter from the Southern Ocean was made possible by using the TMS operating system which permits the acquisition of coherent, long time series data at great ranges without range aliasing. Depending on geographic location, HF propagation conditions, and radar performance, real-time mapping of wind and wave directions at a spatial resolution  $>1500 \text{ km}^2$  and a total footprint up to  $\sim 10^6 \text{ km}^2$  per radar is readily achievable. The footprint for reliable surface current measurements is restricted by the distribution of land mass used to identify and subtract ionospheric Doppler shifts.