

The Tasman International Geospace Environment Radar (TIGER): Data Products

M. L. Parkinson¹, P. L. Dyson², J. C. Devlin³, and H. Ye⁴

1Department of Physics, La Trobe University, Victoria 3086, Australia

m.parkinson@latrobe.edu.au

2As (1) above, but E-mail: p.dyson@latrobe.edu.au

3Department of Electronic Engineering, La Trobe University, Victoria 3086, Australia

j.devlin@ee.latrobe.edu.au

4As (3) above, but E-mail: h.ye@ee.latrobe.edu.au

Abstract

The Tasman International Geospace Environment Radar (TIGER) consists of two over-the-horizon HF backscatter radars, one located on Bruny Island, Tasmania (147.2°E, 43.4°S; 55.0°L), and the other near Invercargill, New Zealand (167.7°E, 46.2°S; 54.5°L). The TIGER radars are key, low latitude elements of the Super Dual Auroral Radar Network (SuperDARN) (<http://superdarn.jhuapl.edu/>). The pulse transmission sequence and signal processing of echoes is optimised for measuring the Doppler characteristics of fast moving, short-lived irregularities of scale size ~10 metres in the auroral ionosphere. The field of views of the two radars look south towards the austral auroral oval where they overlap. This facilitates measurement of the 2-D vector motion of ionospheric plasma. The TIGER radars are connected to the internet and they have the capability to provide numerous real-time data products, not limited to the Doppler characteristics of the ionosphere. As basic research progresses, many more data products will become possible.