

COMPARING SYNTHESISED AND OBSERVED OBLIQUE IONOGRAMS

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ABSTRACT

This poster briefly describes a modified version of the JORN real-time ionospheric model (RTIM) that uses data from a network of vertical incidence sounders around Australia as inputs. This modified RTIM constructs not only a complete map of ionospheric electron density around Australia but also an estimate of the uncertainty in the electron density values at any place (in real time).

A fast & accurate numerical method for synthesising oblique incidence soundings (OIS's) is used (in conjunction with this RTIM) to produce synthetic OIS traces over many paths and several days. These synthetic OIS's are compared to observed OIS data in the Australian region in order to quantify how well the oblique HF propagation can be modelled.

This poster presents some results from comparing the real and synthesised OIS's. Modelling the impact of uncertainty in the RTIM on the synthetic OIS traces is demonstrated. In general the errors in the oblique maximum observed frequency are found to be within the uncertainty derived from the RTIM modelling.