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Validating The Auroral Zone Lower Ionosphere Model

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The ionosphere is known to behave predictably as a function of solar zenith angle, solar activity and season. In the past, analytical models have been developed to predict the behaviour of the ionosphere according to these parameters. This project aims to validate the IMAZ model, a recently developed empirical model for the lower ionosphere in the auroral zone to predict electron densities in the D-region as well as compare to other existing models designed for the same purpose. Rocket-bourne measurements were used as a database of reliable lower ionosphere data. A response in the lower ionosphere was analysed based on the contribution of some input parameters. The output was the electron density for a given set of inputs at a particular pressure surface as predicted by the IMAZ model. Furthermore, the ability of the IMAZ model to predict accurately within the auroral zone was established and the need for further improvements was presented.

Level (Hons, MSc,
   PhD, other)?

MSc

Consider for a student
   award (Yes / No)?

Yes

Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

Yes

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