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Importance of Data Collected from the Earth's Ionosphere - Part 1

Wednesday 7 May 2025 15:00 (1 hour)

This discussion aims to highlight the importance of gathering data from the ionosphere, which can provide valuable information for satellite communication and understanding the impact of solar activity on earth.

An increase in solar activity has recently resulted in some beautiful northern and southern lights! However, they can also interfere with radio transmission and navigation systems, affecting aeroplanes and satellite internet such as Starlink. Solar flares can also influence the climate and to understand that, we need to collect further information from the ionosphere. Studying this data has gotten easier and more accessible nowadays with the help of cube satellites, as they are relatively faster to develop and maintain. These cube satellites are equipped with microcontrollers on board that can filter and analyse the data received from the plasma wave receivers attached to the satellite. We will delve deeper into the design and processes involved during the seminar.

This lecture will be divided into two parts. The first session will introduce the topic, setting the foundation for understanding the key concepts. The second session will explore the practical aspects, examining real-world applications where these technologies have been implemented, along with their advantages and limitations. The seminar will conclude with an interactive discussion, providing the audience an opportunity to share insights and ask questions.

The key takeaway is highlighting the increasing benefits of cube satellites in studying not only outer space but also terrestrial problems. It provides further insight into the various uses of microcontrollers in data collection and processing, which can make studying the impacts of outer space activity on Earth more efficient and interesting.

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