



Space Weather effects on airline communications in the high latitude regions

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Efficient air traffic management depends on reliable communications between aircraft and the air traffic control centres at all times. At high latitudes, and especially on polar routing, VHF ground infrastructure does not exist and the aircraft have to rely on HF radio for communications. HF relies on reflections from the ionosphere to achieve long distance communications. Unfortunately the high latitude ionosphere is affected by space weather events. During such events HF radio communication can be severely disrupted and aircraft are forced to use longer low latitude routes with consequent increased flight time, fuel consumption and cost.

This presentation describes a new research programme at the University of Lancaster in collaboration with the University of Leicester, Solar Metrics Ltd and Natural Resources Canada for the development of a nowcasting and forecasting HF communications tool designed for the particular needs of civilian airlines. This project funded by EPSRC will access a wide variety of solar and interplanetary measurements to derive a complete picture of space weather disturbances affecting radio absorption and reflection