Atmospheric Measurement Techniques Discussions

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Comment on amt-2022-214

Anonymous Referee #1

Referee comment on "Long-distance propagation of 162□MHz shipping information links associated with sporadic E" by Alex T. Chartier et al., Atmos. Meas. Tech. Discuss., https://doi.org/10.5194/amt-2022-214-RC1, 2022

This paper investigates the cause of long-distance Automatic Identification System (AIS) links (>1000 km) observed in the western Atlantic region during 13-14 July 2021. It is hypothesized that the long-distance links are enabled by skywave propagation due to sporadic-E layers. Digisonde data and COSMIC-2 radio occultation measurements support this hypothesis. It is suggested that AIS data could be a new tool to study intense sporadic layers.

The paper is written well and contains an interesting case study. My overall opinion is that there is a merit of publishing this paper, as it is the first report on the potential use of AIS data for global sporadic E studies.

Nonetheless, I have a comment, which the authors might want to take into account for improvement of the paper. It feels that the discussion of the sporadic-E maps in Figure 5 is incomplete. The maps are presented only for two selected intervals on 13 and 14 July, and it is unclear how they look, for example, on 15 July or nighttime on 13 and 14 July when long-distance links were not detected. It would be informative if the authors could demonstrate the absence of intense sporadic E. In case there is no sufficient data for constructing maps for other times, the authors could simply state so.