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# Reply on RC1

Victor U. J. Nwankwo et al.

Author comment on "Diagnostic study of geomagnetic storm-induced ionospheric changes over very low-frequency signal propagation paths in the mid-latitude D region" by Victor U. J. Nwankwo et al., Ann. Geophys. Discuss.,
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We (authors) thank the reviewer (Referee #1) for accepting and making time to review our manuscript. Your effort and expertise are highly appreciated. It is also encouraging that you identified with relevance of this work in the field.

In my understanding, the two important suggestions/concerns to address in the paper are (i) to at least infer or confirm the cause of the observed anomalies in the VLF characteristics (e.g., energetic magnetospheric electron precipitation) and (ii) to support the claim with relevant data in the future. You are also of the opinion that we consider the inclusion of riometer measurements in the investigation.

We have probed further into the dynamics of some of the storms investigated in this work as it affects VLF propagation (in a separate study) by including the ancillary data/information of the timing, classification and location of associated solar flares, coronal mass ejections (CMEs), solar particle events (SPEs), and the timings for the sudden storm commencements (SSCs). With the results at our disposal, I believe we now have the basis to speculate on the cause of the observed anomaly. The details will be updated/included in the revised version of this manuscript (depending on the Editor's recommendation). Authors have also noted and are now discussing the possibility of including available riometer measurements in future work in order to support the findings.

We have taken note of the typo and will correct accordingly.

Thank you very much for your valuable comments.