

Ann. Geophys. Discuss., referee comment RC2
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Comment on angeo-2021-70

Anonymous Referee #2

Referee comment on "Temporal and altitudinal variability of the Spread F observed by the VHF radar over Christmas Island" by Ricardo Yvan de La Cruz Cueva et al., Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2021-70-RC2>, 2022

General comment:

From the 10 years of data on radar echoes observed at Christmas Island, the authors studied temporal variation of occurrence of the F-layer irregularity, diurnal, seasonal and annual variations. The data and the statistical analyses are interesting and worth to publish. However, the authors did not try to explain, quantitatively or qualitatively, why it occurred. The authors mention that during the solar minimum condition the irregularity concentrates around local midnight. Readers expect further physical explanation for these observational results.

My conclusion is that the present manuscript could be considered as a short note rather than a full research paper. Minor revision would be necessary before to a final form.

Minor comments are below:

Line 69: sub-section title of 2.1: "Data measurements" to be revised as "VHF radar measurements".

Line 83, "Mach": correct to "March"

Line 87, "we had organized": correct to "we organized"

Line 91, "Is": correct to "It is"

Line 131, "The higher occurrence of echoes in altitude is compared with the density profiles provided by Digisondes": Please show the digisonde data for comparison.

Line 133, "June equinox": correct to "June solstice". In the next pages there are several phrases of "March solstice, September solstice" please correct them to March equinox and September equinox.

Line 134 "even when its occurrence was the opposite": what does it mean ?

Line 139, "The altitude distribution of echoes above 350 km also presents same behavior as below this threshold": what threshold ??

Line 156, "September solstice": to be "September equinox"

Line 315, Figure 2: If the authors plot ionospheric sunset hours in the figure, it would be useful.

Line 326, Figure 4: please plot STD error bar for each plot, so that readers could evaluate the difference between them.