

On the correlation between ROTI and S4

In this work the authors have carried out a study on the correlation between ROTI and S4. The authors have used the variable effective velocity and explored its role on the correlation between the amplitude scintillation index and the TEC rate of change indices. The authors have shown that under low variability conditions, a high correlation coefficient is obtained using effective velocity.

This work is a step forward in attempts to characterize irregularities and scintillation measurements based on the current used indices. The findings based on effective velocity adds a new variable that could be useful in modeling and forecast attempts on scintillation phenomenon which still remain rudimentary. I recommend the paper can be accepted but after minor corrections.

Specific Comments:

1. In line 49, delete slant TEC and change it to ROT.
2. Line 70: Then (5) was rewritten as; delete was and substitute with can.
3. The symbols like R_e , h_{ipp} are mentioned between line 76-79. The equation they are referring to is presented after line 263 in the appendix. Move lines 76-79 starting from the sentence R_e denotes..... to lines 263.
4. In line 123: the parameters μ, δ are introduced but not defined anywhere in the document. The authors have assumed that they are well known to readers. Define them for clarity.

Generally the grammar must be revised in the entire document.

Technical errors

The authors should check and ensure that the references are all cited in the document.

For example the following references are in the document but not written in the reference list

-Kintner et al., 2007

-Du et al., 2000

-Bhattacharyya et al 2007

-Rino 1978

Aruda et al., 2006

The following references are not cited in the document

-Aruda et al., 2016 in line 215

-Bhattacharyya et al., 2000 line 220

-Du et al 2001 line 234

-Kintner et al., 2006 line 236

-Li et al., 2007 line 241

-Olwendo et al., 2018 line 243.

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