

Report #1

Submitted on 23 Apr 2014

Anonymous Referee #1

Anonymous during peer-review: Yes No

Anonymous in acknowledgements of published article: Yes No

Check-List for Reviewers

General Information (select YES or NO)

Does the paper contain new data or new ideas or both of them? **Yes** No

Are these up to international standards? Yes **No**

Is the presentation clear? **Yes** No

Does the author reach substantial conclusions? **Yes** No

Is the length of the paper adequate? **Yes** No

Is the language fluent and precise? **Yes** No

Are the title and the abstract pertinent and understandable? **Yes** No

Is the size of each figure adequate to the quantity of data it contains? Yes **No**

Does the author give proper credit to related work and does **Yes** No

he/she
indicate clearly
his/her own
contribution?

Would you cite
this paper as a
scientific
contribution?

Very important Fairly important May have potential after additional work and resubmission No potential value

Recommendation to the Editor

The manuscript is acceptable **as it is**.

The manuscript is acceptable with **some corrections**.

The manuscript will be acceptable after **minor revisions**.

The manuscript may become acceptable after major revisions and must be reviewed again:

I would be willing to review the paper again.

I would NOT be willing to review the paper again.

The manuscript is **not acceptable**.

Comments to the Author

The authors proposed a way to understand specific but repetitive features on convective ionospheric storm, also called equatorial spread F (ESF). Although repetitive, such types of events are not so frequent and the authors hypothesize that their occurrence is due to rare large meteor events. In principle the calculations performed by the authors support their hypothesis, although there is not observations supporting the connection. Nonetheless I find the paper very interesting. Below I summarize some comments that the authors should take into account.

1. Introduction. Although I'm familiar with the topic, the authors should take into account that not all the readers will be familiar, so the Introduction needs to be expanded, including proper references and more importantly providing some background information, so the reader can understand the importance of the work.
2. Figures 1 and 2 are indeed extraordinary examples of non-typical ESF echoes from 3-m irregularities. On the other hand examples in Figure 5 are not as clear. For example, why are events from 06/27/1999 and 05/26/2007 included in the list? I understand that some specific criteria were used to identify those events. I suggest the authors explain in detailed why such events were selected, particularly those shown in Figure 6.
3. Normal ESF. For helping the reader, the authors should think about including some "typical" examples, when the irregularities occur under unstable RT conditions.
4. Discussion. Besides the size of the meteor, do the authors expect other meteor parameters to play a role? For example: what about the trail direction with respect to the magnetic field? or the dip latitude of the D/E region crossing? What about the open circuit at the other side of the magnetic field line feet?
5. L95. Besides McKinley, 1961, can the authors add more recent references on meteor work?
6. Figure 3, should also include the units of V/m to help the reader put the drift and electric field values into context.
7. L160, "is positive in the figure (clockwise)" which figure?
8. Suggestions. I think it would be nice to speculate what would be needed to test the

hypothesis in terms of simulations/observations, trying to motivate other groups to get involve on this research line.