

## **Response to Referee comments**

**Name of manuscript:** South Atlantic Anomaly during ascending and maximum phase of solar cycle 24

**Authors:** Khairul Afifi Nasuddin, Mardina Abdullah, Nurul Shazana Abdul Hamid

We thank Nonlinear Processes in Geophysics for an experience in improving the journal. The comment has been read and taken consideration discreetly. The following summarize the effort the author take in answering the comment.

### **Comments from Referee 2:**

#### **(1) Comments from Referee 2:**

This paper focused on the South Atlantic Anomaly during the ascending and maximum phase of solar cycle 24, the research should be meaningful to reveal the unrevealed mechanisms and features of SAA region. The paper is in good organization, some revisions should be done to improve the quality of paper and get some more solid conclusions for the topic. 1) When the impact of solar activity is considered, it is better to study the entire solar ascending phase, and also make comparison with the feature in solar descending phase. I suggest the authors to make further analysis and comparisons. 2) The geomagnetic storms selected in the present experiment are not very representative in solar cycle 24, severe geomagnetic storms happened in 2015 and 2017 in this solar cycle, the features should be considered and analyzed. 3) The radiation of SAA region during geomagnetic storm can be compared with the normal condition, if probable, the authors can use some solar radiation flux data to study the solar impacts on SAA during some specific conditions. 4) Some minor language errors should be corrected.

#### **(2) Author's response:**

The author have studied the comment given by the referee.

1) The author have studied the ascending phase and it reveal SAA region tend to be persistent during year 2011. One of the author research on the ascending phase of solar cycle 24 conduct on 11 March 2011 (active period) and 3 February 2011 (normal period) in journal " Characterization of the South Atlantic Anomaly " reveal SAA region has a tendency to be persistent ". In this journal " South Atlantic Anomaly during ascending and maximum phase of solar cycle 24 ", on 8 August 2011 (active period) and 24 July 2011 (normal period), SAA region also reveal a tendency to be persistent during the ascending phase of solar cycle 24.

2) The author hope to consider on researching on the maximum phase of solar cycle 24. In this period, the maximum phase of solar cycle occur on April 2014.

3) It is a good idea. The author take note regarding the research of SAA region but due to data availability, the component of the Earth's magnetic field is study.

4) The author have inserted a new figure to represent the periodogram previously for figure 2. The new figure concern on the station involve in the research. The author also explain more on the periodogram.