

Interactive
comment

Interactive comment on “Energetic electron enhancements under radiation belt ($L < 1.2$) during nonstorm interval on August 1, 2008” by Alla V. Suvorova et al.

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Specific Comment 3 by Referee 1

(3) In Table 1, the authors list a series of flux enhancement events observed by POES. The author should specify the criteria used to select those events, and show some detailed electron flux profile of those events, such as how long the enhancements last, specific L shell of each event or how many data points are included in each event. The reviewer also suggests to use more commonly used names for POES satellites such as POES-15/18... instead of P2/P5...

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Reply:

In the revised Figure 2, the intensity and L-shells of enhancements are shown. In the revised manuscript, we specify the criteria more precisely:

“... the forbidden zone extends at $L < 1.2$ in the latitudinal range from -20° to $+30^\circ$ and in the longitudinal range from 0° to 260° E (or 100° W) that is beyond the South Atlantic anomaly (SAA). ... Figure 1b shows the interval 12 - 24 UT, when fluxes of >30 keV quasi-trapped electrons in the forbidden zone increased by 3 orders of magnitude above a background of $\sim 10^2$ (cm 2 s sr) $^{-1}$ and kept at the enhanced level for several hours. We have selected FEE enhancements with intensity $>10^3$ (cm 2 s sr) $^{-1}$. ”

We think that abbreviation P2, P5 etc. are more convenient for presentations in Figures and Tables.

Specific Comment 4 by Referee 1

(4) Line 210-227: the authors intend to prove that each flux enhancement event is individual and not caused by any other event, for example, F2 is not caused by F1. However, this analysis is based on the presumption that the event is really transient. The authors should show some evidence to argue such as F1 could not have been enhanced 100 min before the observation of F1. Also, please explain why this is important. The reviewer does not find it very essential to the analysis later and suggests to be more concise on this problem.

Reply:

In the original manuscript we have already clarified this important issue: “Figure 1a shows the observations of the >30 keV electrons at 0 - 12 UT, before the enhancements occurred.”

In the revised manuscript we provide an additional explanation:

“At that time, the satellites passed the same regions but they did not detect any FEE

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enhancements."

The suggestion of multiple injections is important because several injections are accompanied by several jets. We find correspondence between the jets and injections. Note that there were no substorm-associated injections in the present case.

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