

2nd round reviewer report of “Morphological Evolution and Spatial Profile Changes of Poleward Moving Auroral Form (previously entitled by “The Morphology of Poleward Moving Auroral Forms”) by Anton Goertz, Noora Partamies, Daniel Whiter, and Lisa Baddeley.

This reviewer thanks all authors for carefully replying to my questions and making major revisions along my suggestions and corrections. This reviewer seems that this paper gets close to the publication to *Annales Geophysicae* but still have the following five minor questions, suggestions, and comments on the revised manuscript.

I. Page 3, the paragraph starting with “For each PMAF event...”: the authors should re-organize this paragraph so that the two reasons to perform the analyses separately based on two event lists in this study can “parallel” and “clearly” be described.

The first reason should be “Although the 1st database contains 23 PMAFs that occurred between 2003 and 2008, PMAF took place on 10 different days, hence, some of those days had only 1 PMAF event, while on other days multiple PMAFs occurred. The second event list contains 18 PMAFs that all occurred on the same. This is unusual and thus we separate the two databases and analyze them separately.” The second reason is “the camera setups, including different cameras and present/absent narrow-band filter, used in this study, are different in the two databases”. Above information should be included in this paragraph and re-organized.

II. On the definition of “re-brightening events”; this referee can understand what “re-brightening events” are with the authors’ explanations. However, I cannot understand where this detail was described. In your reply, “This is mentioned in the manuscript on page 8 line6...” but, I cannot find these sentences there. Please re-check this.

III. Page 6, L.8: At least, this reviewer has never heard the terminology of “equatorward boundary intensification (EBI)” (but, instead, poleward boundary intensification (PBI) is frequently used and widely known). Although the authors say, “This phenomenon is commonly referred to as an EBI in the literature...”, which literature(s) is (are) EBI shown and discussed? Please show the citations.

IV. Page 7: “...the authors believe...” → “...we believe that it is ...”

“the authors” should not be used in the manuscript but should be replaced with “we”. Please check whether or not you are making this usage elsewhere in the manuscript.

V. Location of quotation: “While there have been recent advancements in the automation of detection... of auroral forms (Nanjo et al., 2022; Guo et al., 2022), there is currently no automated...”