



EGUsphere, community comment CC1
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Comment on egusphere-2022-331

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Community comment on "Auroral alert version 1.0: two-step automatic detection of sudden aurora intensification from all-sky JPEG images" by Masatoshi Yamauchi and Urban Brändström, EGU Sphere, <https://doi.org/10.5194/egusphere-2022-331-CC1>, 2022

I thank the authors for the interesting manuscript. The manuscript details a simple method to classify images in an ASC aurora image collection according to the presented ASC index. The method is computationally lightweight, which is important for the goal of nowcasting local arc breaking of auroras in all-sky camera images. The single ASC index indicator makes the classification outcome easily interpretable by experts and novices in the field.

That said, next to the line-by-line review attached, there are some general comments that need addressing in a potential revision.

- The manuscript makes the data appear as very complex, multi-dimensional and challenging. Sadly, this only appears so due to ambiguous writing. In the end, after careful review, it appears the images are rather small (150,00 pixel) 3-band images, which is hidden behind confusing writing and misleading illustrations (fig. 1). This needs fixing.
- The manuscript makes the developed method appear as intricate-yet-powerful, which is related to how the data is presented. In the end, the presented method is a multi-level, double-bound thresholding with 5 different thresholding levels (i.e. categories). This method is indeed simple, but introduces a considerable amount of fine-tuned parameters due to the lack of in-depth prior image processing. This also makes the formulation ambiguous and the method very difficult to replicate for other observatories.
- The manuscript requires more context information to make it accessible and comprehensible to researchers outside the expert aurora observation community. Special terms and phenomena such as the N2 red line or local arc breaking are neither explained in-text or referenced in literature. It is very hard to understand the message and research objectives of the manuscript for a common EGU audience. There is still more than sufficient space available for some added references to give the reader information on where to find further details on the assumption baseline of the manuscript.
- The manuscript lacks references to make some context information understandable and to make certain design decisions of the method easier to reason and comprehend.
- The manuscript lacks a details discussion of the imaging parameters (camera resolution, quantisation, etc.). The authors use JPEG images with small resolutions, dynamic exposure times from the camera, hence automatic white balancing, and an

ingrained 3-band 8-bit pixel quantisation. The paper lacks any in-depth discussion of the actual influence of those instrumentation parameters. The paper lacks any comparison and impact assessment of the image compression error from JPEG. Overall, the manuscript treats the actual imaging influences superficially.

- The manuscript lacks a comparison with alternative, more up-to-date methods of image pattern recognition.
- The manuscript needs considerable language revision, as minor and intermediate grammar mistakes are frequent.
- The actual presentation of the ASC images needs revision as the displayed metrics within the image are not indicative and certain features in the images require expert explanation. Furthermore, fewer-but-larger images would support reader comprehension.

I would appreciate a careful revision of the mentioned points, as well as the marked points in-text.

Please also note the supplement to this comment:

<https://egusphere.copernicus.org/preprints/2022/egusphere-2022-331/egusphere-2022-331-CC1-supplement.pdf>