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Referee report

The authors present a compact report on instrumentation for auroral imaging in Apatity, in Russia. Their imaging system consists of a unique set of five cameras with three different overlapping fields-of-view. These are a panchromatic all-sky TV camera, two colour cameras with 67 degrees and two green-filtered imagers with 18 degrees of field-of-view at two different sites four kilometres apart. Data analysis examples are given for scaling features of the aurora with the colour cameras, periodicity of the auroral pulsations with the all-sky, and altitude estimates with the narrowest field-of-view instruments.

The analysis examples give a very nice overview of the type of scientific questions that can be studied with this instrumentation but some more sentences on the motivation and reasoning for the imager selection would be very welcome.

1. The paper title refers to multi-scale auroral observations, but all the analysis examples only use one type of camera, which restricts the observations to a certain range of auroral scale sizes. A report of a new imaging system does not have to have examples of all kinds of scientific purposes, but I would expect to see at least a motivation for deploying the three different fields-of-view in the same area with accurately synchronized imaging.
2. The reasoning for selecting these particular cameras into the current setup would be very useful. Is the combination of monochromatic all-sky, color and green-filtered for the narrower fields-of-view the best combination for multi-scale studies, or the studies aimed at with this system?
3. The wavelet analysis for studying the scaling features includes a number of references to previous work but no references are given for the earlier auroral pulsation studies or altitude estimations. There must be some. Have the observed periods been reported before in similar conditions or is the example an atypical one? What kind of a method was used to estimate the altitude of the IRIDIUM satellites? Are the altitudes for auroral patches, arcs and rays typical with respect to earlier observations?

A couple of more specific comments:

1. Does pulsing aurora mean pulsating aurora? There are many studies on the latter but nothing found on the former.

2. Could the approximate coverage of the narrower fields-of-view be plotted on the top of the larger fields-of-view in Figure 3 as well as in the animations of the supplementary material?
3. One of the web archives is not responding and the other requires a password. The availability of these data may need to be clarified.