The paper makes a good contribution by proposing a method for relative radiometric normalization and homogenization of radiometric changes between aerial images to succeed in mosaicing processes by freely available satellite data. The methodology serve as an improved alternative to other smoothing techniques such as dodging or LUTs. However, as the methodology is raised (different data acquisition days, image resampling for calibrating DMC with MODIS, significant disparities between RSRs of sensors, etc.) rigorous quantitative remote sensing evaluations by analysing the reflectance of land covers can not be performed.

The paper has to highlight and discuss some limitations, including:

- The influence of performing the aerial campaign during 4 different days and at different times of the day
- The consequences of performing the radiometric calibration with a satellite sensor with different spectral range and bandwidths regarding the DMC camera.
- How does the fact that calibrated reference images and aerial DCM images were not taken on the same days affect the accuracy of results. On the other hand, how does this fact affect in the calibration validation with SPOT5 images? (SPOT5 images were taken on 21 January, in contrast to DMC images whose data acquisition started on 22 January)
- Discuss the partial validation of the experiment due to both facts: SPOT5 has not blue band and SPOT5 images do not completely cover the DMC mosaiced area.

For all that:

I propose to make some changes in the title so that it is more consistent with the experiment and results, for example by adding "an approach to the ..." at the beginning. Furthermore, some improvements must be made in the paper especially regarding the specification of important data that should be included and detailed in the accuracy assessment section.

On the basis of the above considerations I recommend a **major revision** of the paper. Below you can find some specific comments (I attached the paper with numbered lines to help in the review process).

Comments:
****

Abstract

Line 12: a simple yet effective technique (without comma after simple).

Line 20: The quantity of images does not have much significance. On the contrary, provide info about the percentage of overlap as well as the problems encountered (arising from the limitations of the flight itself: angles, verticality, etc.) is necessary. Maybe it is not required to specify them here at the abstract but it is necessary in 2.2 or 2.3 section.

Lines 21-24: A discussion on the fact that the SPOT 5 has no blue band (limitations on the validation process) should be made. Furthermore, the mean value of the coefficient of determination (R^2) achieved should be specified at the abstract.

Lines 24-27: Redrafting this portion. (One option: The technique allow producing seamless mosaics corrected for atmospheric and coarse-scale bidirectional reflectance distribution….).

Lines 27-28: Values that support and justify this affirmation are required.

Introduction

In general, there are repetitive references along this section. In addition, some of them are not current references. Try to update them and add some new current references as for example the following one (it can be mentioned at line 133-134):

Del Pozo, S., Rodríguez-Gonzálvez, P., Hernández-López, D., & Felipe-García, B. (2014). Vicarious radiometric calibration of a multispectral camera on board an unmanned aerial system. Remote Sensing, 6(3), 1918-1937.

Lines 58-63: Some of the limitations of the paper mentioned in the first part of the review became evident with this sentence.

Lines 69-72: To long sentence, rewrite and/or split it.

Lines 88-89: Put references in chronological order.

Lines 88-89: Put references in chronological order.

Lines 89-92: Add a reference that justify this sentence ("techniques that…source of error").

Line 101: Put references in chronological order.

Line 127: Put references in chronological order.

Line 133: I do not entirely agree with that. The vicarious calibration can be an inexpensive experiment (as it is proposed in*) by using low-cost calibrated surfaces or natural covers with homogeneous radiometric behaviour (grass, ground, etc.).

Lines 133-134: Put references in chronological order.

Lines 142-143: "…avoids the need to perform time consuming…" Ok, but there is no reference along the paper about the percentage of time saving or about in which sense there is a time saving by following the proposed methodology.

Line 146: More info is required (here or in 2.2 section). Percentage of overlapping, flying height, ground sample distance, etc.

Methods

In general, there are many assumptions and simplifications without scientific support in the research study.

Line 158: Assumption nº 1: "…can be modelled as a spatially varying linear relationship…". It is required a literature reference that check it or evidences this affirmation.

Line 168: Define DN (Digital Numbers).

Line 192: Put references in chronological order.

Line 200: The accuracy of the calibrated satellite image must be specified (it is only specify at conclusions section).

Lines 201-203: Some of the limitations of the paper mentioned in the first part of the review became evident with this sentence.

Lines 207-209: Assumption nº 2: It is required a reference to other paper that check it or evidences this affirmation.

Lines 209-212: Assumption nº 3: In this case, it is referenced.

Lines 224-226: Assumption nº 4: the camera offset is zero. Why? There are no evidences of that. Justified this assumption.

Lines 245-246: Assumption nº 5: It is assumed that the spectral responses of the MODIS bands and the DMC camera are identical. How great are the errors arising from accepting this assumption?

Line 276: Assumption nº 6: The effect of differing PSFs is negligible. A literature reference where make the same assumption or a justification of that is required.

Lines 295-299: If a previous DMC image correction has been made (with Intergraph Z/I Post-Processing Software) there should not be problems with the radiometry of boundary pixels. In this way they should not been discarded.

Lines 300-304: What you really mean with "90 percent coverage"? Is it the footprint of the MODIS images about the mosaic aerial image?

Line 309: How much overlap you consider sufficient? Specify and justify it.

Line 318: There is an error when Figure 1 is mentioned.

Figure 2: Specify the MODIS bands inside the graph by, for example, writing "b1", "b2", "b3" and "b4" in the appropriate spectral response.

Line 382: How does the fact that calibrated reference images and aerial DCM images were not taken on the same days affect the accuracy of results.

Line 382: The site ~~was~~ selected as…

Line 384: Specify what kind of corrections were performed, their magnitude, its importance and influence in the next steps of the study.

Line 386: How does the fact that the spatial resolution of the DEM (5 m) and NGI imagery (0.5 m) are different affect?

Line 392: Bands 4, 1, 3 and 2 from MODIS sensor have not a 500m resolution. Correct it because bands 1 and 2 have 250m resolution. By the way, did you make a downsampling process with these two 250m resolution images to have the four bands with the same spatial resolution (500 m)? Explain it.

Line 405: Assumption nº 7: ***C*** was ignored.

Line 406: The derived calibration coefficients (gain in this case) of the DMC camera should be specified for each DMC band in a table or written throughout the paper body, here or in the results section.

Lines 433-435: Discuss the partial validation of the experiment because SPOT 5 images do not completely cover the DMC mosaiced area.

Lines 436-437: The accuracy of the SPOT 5 calibration is required.

Line 438: Discuss the partial validation of the experiment because SPOT 5 has not blue band.

Results and discussion

Figure 4: The title of the X/Y axes should be extended. What kind of magnitude is compared between DMC and MODIS?

Table 1: Why did you specify both the RMS and SDD?

Table 2: Why RMS and SDD are so different? It is required to discuss the values of the R^2, they are quite low.

Conclusions

Somehow, reflect the observed limitations that are evidenced through this review.