Academic Editor:

Please see the following overviews:  
  
G Pajares. Overview and current status of remote sensing applications based  
on unmanned aerial vehicles (UAVs).  
Photogrammetric Engineering & Remote Sensing 81 (4), 281-329  
  
Colomina, I., and P. Molina, 2014. Unmanned aerial systems for photogrammetry  
and remote sensing: A review, ISPRS Journal of Photogrammetry and Remote  
Sensing, 92:79–97.

Authors’ response: We have added both references and thank the Academic Editor for bringing these to our attention.

Reviewer 1:

**Comments and Suggestions for Authors**

This is an excellent paper that gives impetus to UAS flight simulation which in turn allows for optimal UAS mission planning.

The paper is very well written and care has been taken to develop the range of ideas involved in this UAS data acquistion simulations and in the consequent error assessments. This work does display the utility of UAS mission simulation, particularly in high value, high risk and/or high production environments. Camera radiometry was not considered in this experiment.

Author’ response: We thank the reviewer for the positive feedback.

The topic of modeling the image distortion due to the lens needs some clarification; on line 229 '*lens effects were simulated in post processing* ...'

How were these lens effects simulated; probably just due to spherical aberration but was chromatic aberration included ? Given that a UAS can produce a ~1 cm pixel and can have a relatively wide angle of view lens effects can be significant. For multispectral imagery chromatic aberration will need to be corrected. It will be helpful to the reader to know as to what extent these issues are addressed in the lens effects simulation.

Author’ response: We agree that lens effects are very important in SfM processing—especially with some of the types of cameras and lenses currently being operated on UAS. We have expanded the discussion around lens distortion on lines [396-402] and [615-617].

Reviewer 2:

**Comments and Suggestions for Authors**

well written paper.  I enjoyed reading it.

Author’ response: Thank you. We spent considerable time in writing and revising the manuscript to improve its clarity and appreciate this comment.

Reviewer 3

**Comments and Suggestions for Authors**

The authors have produced a very interesting paper on simulation of imagery and sfm processing workflow. The paper reads well and they have made a reasonably good job of presenting, what is, a very complex process. There are several parts to the processing work flow and whilst figure 4 shows a pictorial representation of the rendering workflow more use could have been made of some flow diagrams. One to show the overall processing structure and then perhaps a couple to show a higher level of detail for the image generation and then the processing.

Authors’ response: Given the number and the complexity of the various processing workflows described in the paper, we concur with the reviewer that additional workflow diagrams could assist the reader in understanding and visualizing the processes. After thinking carefully about the best workflow diagrams to add, we determined that the most helpful would be one depicting the procedures used to simulate blur, noise and vignetting, which are applied in MATLAB to the Blender output. This new workflow diagram has been added as Figure 7 on page \_. We deliberated on whether a flowchart depicting a higher level of detail for the computer graphics workflow would be beneficial, and ultimately decided that the increased complexity of such a figure would take away from the purpose of the paper.

The design parameters of the case study experiment to 'prove the concept' need to be justified rather than just presented particularly as there is a vast number of variables and combinations that can be used. Why choose the example presented.

Authors’ response: The guiding principle in our selection of parameter settings in the use case example was the desire to best simulate a typical real world scenario. In response to the reviewer’s comment, we added text to the manuscript describing why the specific parameters were chosen [LINES]. As already discussed, the Sony A5000 was chosen as the simulated camera, because it is a camera that the authors have personal experience with, and because it is a popular choice for UAS-based aerial mapping (e.g., <http://www2.unb.ca/gge/News/2015/STC/Choi.pdf>; <http://ir.library.oregonstate.edu/xmlui/handle/1957/60001>).

Although the paper is, in general, well written and logically structured, here are just a few typos picked up:-

line 60 'aka' - 'also known as' in full

two table 1's lines 253 and 275

line 503 start of section 4 the English needs attention

line 601 '...what that the...'? English

Authors’ response: We fixed each of these typos and wording issues and thank the reviewer for catching them. (Not sure how we missed the two Table 1’s, but we are grateful to the reviewer for catching this!)