

Interactive comment on “Thermal remote sensing from Airborne Hyperspectral Scanner data in the framework of the SPARC and SEN2FLEX projects: an overview” by J. A. Sobrino et al.

Anonymous Referee #1

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1- General comments:

The paper has a good scientific quality. The feasibility of retrieving LST and LSE from AHS thermal infrared data is well demonstrated. However, the choice of the thermal bands used is not explained to the basic reader (public), even if this explanation is referred in the references.

The accuracy of the LST, LSE and ET is acceptable.

The authors tried to demonstrate the usefulness of SPARC & SEN2FLEX field measurements campaigns and to show the potential of the collected data in order to es-
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estimate very important geo-biophysical parameters such as land surface temperature, emissivity and evapotranspiration. However, the algorithms used are not new, and were already tested successfully in the literature and even by the authors themselves (for sensors such as: AVHRR, MODIS, ASTER, SEVIRI, DAIS, LANDSAT, etc). That said, the added value that remains is the successful estimation of land surface temperature, emissivity and ET from AHS data, which is carried out for the first time!

The usefulness of TIR data is not only a fruit of this work, but fruit of a lot of relevant works of other authors as well. Therefore, I consider that this work even if very well written, did not produce as many conclusions or results as I wished (seen the capacity of the Authors well known in this scientific field). To my opinion, the authors tried to work out too many objectives in a rather small study analysis. In fact, this paper touched so many items, but none of them are provided with an in-depth analysis. The added value of this work is not big, but I still consider that this paper deserves to be published as it is (after taking into account the minor comments).

I am aware of the immense scientific capability of the authors, but I would liked to see more results and conclusions, may be in a future work.

2- Specific comments

I do not have many specific comments, because the paper is well structured and the methodology is well presented, and nothing relevant can be criticised regarding the formulas, the algorithms, etc (known in the literature, and with demonstrated efficiency). Few comments I afford myself to ask are as follow:

What about the angular variations on surface emissivities?

The choice of AHS bands was not well justified and therefore a little confusing in paragraphs 2.4.3 & 2.4.4

I did not see in this paper what happened with the mentioned nighttime images?

3- Technical corrections

Few corrections can be mentioned:

Page 4110, 2nd paragraph, line 7: airborne imagery (were instead of was, because we talk about many images).

Page 4110, 3rd paragraph, line 2: to observe solar induced (delete "of")

Page 4110, 3rd paragraph, line 8: the European community Water Framework Directive (WFD) should be replaced by: the EU Water Framework Directive (WFD) <http://ec.europa.eu/environment/water/water-framework/>

I would like to suggest to the authors adding the following reference: AIRBORNE HYPERSPECTRAL SCANNER (AHS) SPECTRAL EMISSIVITY RETRIEVAL IN 8-13 μm . : M. Jiménez, J. Chicao, E. de Miguela, J. A. Gómez, J. A. Sobrin, J. C. Jiménez-Muñoz, E. Prado, C. Robles http://www.commission7.isprs.org/ispmsrs07/P55_Jimenez_Airborne.pdf

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