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HESSD

6, C1695–C1696, 2009

Interactive
Comment

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.

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As is mentioned in the title, the objective of this paper is to provide an overview of the work carried out during SPARC and SEN2FLEX campaigns using AHS thermal remote sensing data (as a response to a call for a HESS special issue about these campaigns). Since it is an overview paper, new algorithms or methods are not provided, but a re-compilation of algorithms, methods and results obtained in both campaigns.

RESPONSES TO SPECIFIC COMMENTS:

Angular variations on emissivity: AHS FOV is 45°. Angular effects are significant for C1695

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angles higher than approximately 30° . Since AHS borders are not considered in the analysis, it is expected that angular effects are not significant. Anyway, the angular behaviour of emissivity is still an open issue, and different models have been published in the last years to address this issue (BRDF models, SAIL in the TIR, 3D DART, etc.). The authors have been worked with some of these models, and they are still working, also making angular measurements with goniometric systems. However, angular effects are not the main objective of this paper, so discussion on those issues have not been included.

Choice of AHS bands: it is justified in Sections 2.4.3 and 2.4.4. Since the choice has been discussed previously in other two published papers by the same authors, the reader is referred to those references, and we only provide a summury of the discussion in this paper. Basically, AHS has 10 TIR band (from 71 to 80). Only bands 72,73,75,76,77,78 and 79 are located in non-absorption regions, so a priori these are the optimal bands. In 2004 bands 72 and 73 were affected by a technical problem of the sensor (son only bands from 75 to 79) were considered, but this problem was solved in 2005.

Nighttime images: Since ET retrievals employ VNIR data for albedo computations, nighttime images are not useful ET retrievals, unless same albedo during night and day is assumed (which is a typical assumption). One of the main interesting aspects of nighttime images is the exploitation of MIR bands for LST retrievas, since during night the reflective part of the spectrum has not a contribution, but this is another issue.

TECHNICAL CORRECTIONS: all the technical modifications suggested by the reviewer will be incorporated in the revised version of the manuscript.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 6, 4107, 2009.

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