

Interactive comment on “High resolution land surface fluxes from satellite data (HOLAPS v1.0): evaluation and uncertainty assessment” by A. Loew et al.

Anonymous Referee #2

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A new framework (HOLAPS) for the estimation of global surface energy and water fluxes at the land surface has been described and verified with flux towers. The model is designed to achieve usage of globally available satellite data. Several options for global simulation has been suggested. Since this paper is the first one on HOLAPS model, it is suggested to specify more technical details and let the readers understand the physical process included in the model. The paper is encouraged for publication. Below is some minor comments.

Θ is the thermal inertia which is estimated as function of soil moisture conditions (Murray and Verhoef, 2007).-à rs

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‘H’, ‘D’, ‘M’ Table 3 should be ‘h’, ‘d’, ‘m’ to make a consistent format as the table title. S is not found in the table. Is RG means S?

In equation B17 and B16, I am wondering how did ‘z’ is set for sensible heat flux calculation, since ERA-interim temperature and wind speed are used for sensible heat flux calculation.

Sensible heat flux is also one important output variable in HOLAPS. I did not find any evaluation of this variable. The accuracy of sensible heat could influence that of latent heat. Table B1 also list z0h and z0m for different land covers, it maybe interesting to verify these parameters by comparing calculated and observed sensible heat. Otherwise please discuss the possibilities for model accuracy improvement in future.

I did not find the meaning of α in equation B6 in the text or in the symbol table. Please specify it.

I also did not find the clues on how did HOLAPS solve runoff (Q) in equation B8? The author gives surface water balance equation, but did not tell us how did they process water balance for other soil layers. If possible, please also add water balance for each soil layer. Can they also specify how did they solve soil suction pressure head Ψ in equation B9?

Interactive comment on Geosci. Model Dev. Discuss., 8, 10783, 2015.

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