Atmos. Chem. Phys. Discuss., 13, C9374–C9375, 2013
www.atmos-chem-phys-discuss.net/13/C9374/2013/
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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Surface sensible and latent heat fluxes over the Tibetan Plateau from ground measurements, reanalysis, and satellite data" *by* Q. Shi and S. Liang

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Received and published: 24 November 2013

This paper addresses the sensible and latent heat fluxes over the Tibetan Plateau, where ground-based measurements are very sparse. As the important role of the Tibetan Plateau on Asian monsoon, discussion on this issue is important and encouraging. The authors made their contribution by fusing ground-based measurements, reanalysis, and satellite data. The paper was well organized and written. The Introduction is very good.

There are many evidences showing that current estimates of sensible and latent heat fluxes over the Tibetan Plateau have huge uncertainty (i.e., Zhu et al., 2012), including those as input of this study. The author fused the input data by a linear regression.

This regression did not improve the estimates physically. However, the author obtained nice "validation" results. The major reason for this is the "cross-validation" used by the authors (Page 30359). It is not a real validation. The author used ground-based measurements to calibrate the regression method and validate the regression at same time. By this mathematical calculation, one can always obtained good validation results no matter how good the input data are. However, this does not means that the estimates of sensible and latent heat flues by this regression are good elsewhere except for the validation sites.

Zhu X Y, Liu Y M, Wu G X. An assessment of summer sensible heat flux on the Tibetan Plateau from eight data sets. Sci China Ear th Sci, 2012, doi: 10.1007/s11430-012-4379-2

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 30349, 2013.