

## ***Interactive comment on* “Evaluation of an extreme-condition-inverse calibration remote sensing model for mapping energy balance fluxes in arid riparian areas” by S.-H. Hong et al.**

### **Anonymous Referee #2**

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The authors present an application and evaluation of SEBAL for the semi-arid riparian regions in the Rio Grande Basin of New Mexico. This is an interesting repetitive application and evaluation of SEBAL model in the riparian areas.

Major Comments page 13483-line 1: Unlike NLDAS and LIS, SEBAL and METRIC do not require land cover maps: Please could you discuss how you will estimate the surface roughness without land use and land cover maps. I don't see any relation of LIS and NLDAS with this paper. Author added unnecessary NLDAS and LIS in this paper. Methodology, application and science behind NLDAS and LIS is way different than SEBAL and METRIC.

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Section 3.2 closure forcing Please could you put reference or criteria for 65%-110% energy balance closure. or maybe refer this paper <http://www.sciencedirect.com/science/article/pii/S0168192302001090>

Section 3.4 page 13495-line 4-5: There are several types of footprint models. Initially, simple two-dimensional analytical footprint models for neutral atmospheric conditions were developed. developed? Have you developed or used in this study?

Therefore, the use the average H and LE values of the 25 pixels surrounding the EC tower pixel is considered to be the best option for the comparison of daily ground measurements and SEBAL estimates. Please could you discuss how you come up with exact 25 pixels surrounding the EC tower?

There are major problems in the paper. 1. Energy balance closure 2. Comparison of Energy balance parameters consistently shows underestimation and overestimation of parameters ( $R_n$ ,  $G$ ,  $H$ , and  $LE$ ) what should reader believe 65% energy balance closure or the remote sensing model (15% error)

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 13479, 2014.

**HESSD**

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