Geosci. Model Dev. Discuss., 7, C633–C634, 2014
www.geosci-model-dev-discuss.net/7/C633/2014/

Geoscientific Model Development Discussions
Open Access

Interactive comment on "Coupling the high complexity land surface model ACASA to the mesoscale model WRF" *by* L. Xu et al.

Anonymous Referee #1

Received and published: 25 May 2014

This manuscripts presents the coupling of a more complex land surface model to WRF and thoroughly evaluated the performance of the new coupled modeling framework against the observations and original WRF-NOAH framework. I appreciate the amount of efforts and the compelling motivation in the introduction and can see high chance of this manuscript eventually to be published. The demonstration of the scientific value of such a new modeling framework, however, deserves more attention and extra efforts. Given the significantly increased model complexity, it is not exciting to see that "Overall, when compared to the simple single layer WRF–NOAH model, the WRF–ACASA model has greater model complexity without decreasing the quality of the output". What's more exciting is to see the model simulated carbon dioxide fluxes, and if feasible, some evaluation on that. Also, most of the model comparison essentially focuses on the local scale simulations. I am wondering whether extra spatial complex-

Full Screen / Esc
Printer-friendly Version
Interactive Discussion
Discussion Paper

ity of the atmosphere and land processes and their interactions can be revealed by the more physically based representation of the ecophysiological schemes, which is not extensively discussed in this manuscript. Lastly, the figure quality can be improved. For example, the fonts in Fig. 5-13 are too small to read. Figure 3 seems not necessary and can be easily combined with Fig. 2.

Interactive comment on Geosci. Model Dev. Discuss., 7, 2829, 2014.