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Biogeosciences Discussions

Interactive comment on "Thermal adaptation of net ecosystem exchange" *by* W. Yuan et al.

Anonymous Referee #2

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Yuan et al.'s manuscript on "Thermal adaptation of net ecosystem exchange" is a very interesting comparison of two derived thermal properties of NEE calculated for 72 sites across a broad geographic range. The two properties are Tb, the temperature at which a given site transitions from source to sink, and To, the optimal temperature for peak NEE. The authors found significant relationships between Tb and mean annual T, and between To and mean T during the growing season. They suggest these strong relationships are due to the intrinsic connections between vegetative primary production and ecosystem respiration. Even though the basic premise is not a new one, which both the authors and other reviewers have pointed out, this is still a very valuable contribution to the literature to examine these properties across such a large gradient of flux tower sites. In addition, although the findings that the derived thermal properties are different for deciduous and evergreen sites are not new, it is still a valuable exercise to see these differences hold up so nicely using a larger grouping of sites than has

been used in previous analyses.

I do have several comments/questions. 1) I agree with one of the reviewers that Figs 3 and 4 are redundant. 2) It would be nice to see a bit more info on the criteria used to determine the 72 sites used in the analysis. There are obviously more sites in the FLUXNET database. Were all evergreen and deciduous forests available used? 3) I think the comparison between the seven adjacent boreal stands is a useful one. These sites are < 50 km from one another and do differ substantially in community composition.

Interactive comment on Biogeosciences Discuss., 8, 1109, 2011.