

Interactive comment on “Ergodicity test of the eddy correlation method” by J. Chen et al.

Anonymous Referee #2

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While the main hypothesis; testing the assumption of stationarity, homogeneity and ergodicity in canopy turbulence is relevant to the field of micrometeorology and to this journal, the article needs to be thoroughly restructured. Apart from the numerous grammatical errors, the ideas expressed in the article are scattered, i.e all over the place. The authors also limit the analysis to 3 hrs and over two sites; in order to extend the validity of their results, the authors must include data from multiple sites. With all this in to consideration, in its current form, the paper is not suitable for publication.

Main Comments

- The land cover characteristics of the two sites discussed in this paper needs to explained thoroughly.
- Information on data used for the analysis, time periods, stability need to be tabulated.

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Also all the error correction and data processing need to be explained more thoroughly.

- Why are the temporal states in local time, stability parameter must be used?
- Influence of land cover needs to be tested. If possible the analysis should include data from multiple sites (forest, crop, urban, mountain etc). The two sites used in this analysis look very homogenous in terms of surface cover; many contemporary eddy flux measurements are devised over heterogeneous landscapes. It would immensely add to the article if the analysis is extended to include the influence of surface characteristics.
- The authors refer to 10 mins, 1000 m as some indices, these numbers have to be presented in a non-dimensional form so it can be compared to other experiments.
- The analysis should include fluxes: momentum, heat and humidity to the analysis.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 18207, 2014.

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