

## ***Interactive comment on* “Response of carbon fluxes to water relations in a savanna ecosystem in South Africa” by W. L. Kutsch et al.**

### **Anonymous Referee #2**

Received and published: 1 July 2008

#### OVERALL:

- 1) Does the paper address relevant scientific questions within the scope of BG? - Yes
- 2) Does the paper present novel concepts, ideas, tools, or data? - Yes, data.
- 3) Are substantial conclusions reached? - Yes
- 4) Are the scientific methods and assumptions valid and clearly outlined? - Mostly (see below)
- 5) Are the results sufficient to support the interpretations and conclusions? - Yes
- 6) Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? - Mostly, but not

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- 7) Do the authors give proper credit to related work and clearly indicate their own new/original contribution? - Yes
- 8) Does the title clearly reflect the contents of the paper? - Yes
- 9) Does the abstract provide a concise and complete summary? - Yes
- 10) Is the overall presentation well structured and clear? - No, some part are too lengthy (see below)
- 11) Is the language fluent and precise? - No, need some work (see below)
- 12) Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? - Yes
- 13) Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? - Yes (see below)
- 14) Are the number and quality of references appropriate? - Yes
- 15) Is the amount and quality of supplementary material appropriate? - n/a

#### DETAILS:

- p. 2198, line 2 - replace "eddy covariance" with "eddy covariance mwthod"
- p. 2198-2202, Introduction - good, but very lengthy, consider reduction
- p. 2199, line 7 - replace "focussing" with "focusing"
- p. 2199, line 13 - no need for "("
- p. 2200, line 18 - define short-term
- p. 2202, line 1 - remove space in  $sto_{m,atal}$
- p. 2202, line 10-25 - seems too lengthy, consider reducing

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- p. 2203, line 16 - replace "prinetd" with "shown"
- p. 2203, line 20-page 2204, line 3 - seems very lengthy and some of it discussed before
- p. 2204, line 13-15 - sentence unclear
- p. 2204, line 23-25 - method unclear and need reference
- p. 2205, line 1-3 - unclear (tower to measure soil moisture and temperature?)
- p. 2205, line 9 - is nine months enough for planar fit, may want to show some statistics to confirm it
- p. 2206, eq. 3 - no Q10 for Fr?
- p. 2206, eq. 4 - TANHYP is not defined
- p. 2207, line 16-17 - not very good reason ("because we did not want to derive...")
- p. 2207, line 20 - unclear ("respectively")
- p. 2208, line 8-12 - is it just the way savanna functions, or is it a sampling issue?
- p. 2208, line 20 - need details (how canopy growth effects were removed to avoid falsely high Q10?)
- p.2209, line 19-22 - isn't it the same set of data for Q10 and model computation? p. 2210, line 26-28 - why such a statement? unclear
- p. 2211, line 7-13 - evapotranspiration is probably just larger in the dry air
- p. 2212-2215 - Discussion seems too lengthy
- p. 2212, line 13 - it may be just sampling issue
- p. 2216, line 2-3 - unclear sentence, what processes?
- p. 2228, Fig 4 - are these data segmented by weeks or by steps in green foliage area? was green foliage area stable during the whole period? If not, Q10 may be

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overestimated. Need details.

p. 2235, Fig 11 - were gc and c modeled from Fp? if yes, how do you avoid autocorrelation?

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Interactive comment on Biogeosciences Discuss., 5, 2197, 2008.

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