Biogeosciences Discuss., 3, S266–S268, 2006
www.biogeosciences-discuss.net/3/S266/2006/

Biogeosciences Discussions

Interactive comment on "Water use strategies and ecosystem-atmosphere exchange of CO_2 in two highly seasonal environments" *by* A. Arneth et al.

A. Arneth et al.

Received and published: 20 June 2006

We thank the reviewer for the very thorough reading of our manuscript and the comprehensive editorial suggestions. These will be included into the revised version of the manuscript and will improve the readability of the text.

A paper that seeks to compare ecosystem response to environmental constraints can be structured in two different ways: The first option is to arrange the text 'grouped by site' = to report and discuss all observations and their analysis for one site, followed by the observations & analysis at a second, third, etc. site. The alternative option is 'grouped by functional response' = to report and discuss a number of distinct environmental responses (e.g., A vs. Q, R vs. T, G vs. A/[D(Ca - Γ)/1.6]0.5, etc.) observed at all sites. We rejected the first option, since in our eyes this potentially results in a paper that is fairly boring to read. The drawback of the second option is in-

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

deed that the text has to skip back and forth between sites several times, which poses a certain challenge to the reader. Our manuscript's Figures had been drawn with the objective to aid with this 'skipping', and it is somewhat unfortunate that the bgd format does not allow for the required space to display complex Figures; however this will be improved in the final print version, and the suggested changes to the symbols in Figs. 1 & 2 will be included in the revisions.

In response to some of the specific questions that were raised: (1) Instrumentation and canopy height: At the Mopane site the instrumentation was placed at a height of 13m in a patch of the woodland with maximum canopy height of c. 8m; at the Siberian pine forest, measurements were made at a height 25.2 m, c. 5m above average canopy height whereas at the birch forest the instrumentation was placed at 22m, c. 7m above average canopy height. The tower at the wetland was approximately 4m above the mire's ridges. These values will be included in the revised version of the paper. (2) The u* thresholds were between 0.1 and 0.2 ms-1 and will be specified in the revised manuscript. (3) LAI: It is unfortunate that methods to estimate LAI, and its seasonal changes, differed between the sites. This is to a certain degree the result of performing measurements in very remote locations, which sometime renders the observation of even seemingly basic parameters to be very challenging. However, since we use LAI in this manuscript largely as a site-descriptive parameter, and do not attempt to relate measured fluxes in a quantitative way to it we did not seek to compare the different methods that have been used. Trends in LAI at the Maun site (p359): we clarified this sentence to "This procedure differs from the one used to produce the global MODIS LAI-products (Myneni et al., 2002) but comparison revealed date of the onset of leaf growth to be similar. Since spatial as well as temporal resolution is considerably higher than when using the standard products the within season-variation was higher, potentially leading to improved monitoring of pulse-like responses." (4) missing references: Arneth et al (1998) is cited on p. 359, l. 18; Orr is part of the authorlist of the Friedlingstein et al. paper (citation begins at the previous page).

BGD

3, S266–S268, 2006

Interactive comment on Biogeosciences Discuss., 3, 345, 2006.