

Interactive comment on “From biota to chemistry and climate: towards a comprehensive description of trace gas exchange between the biosphere and atmosphere” by A. Arneth et al.

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BG-2009-175 has now been assessed by two reviewers - the first one would accept the paper as it is, the second one is more critical and feels that major revisions will be necessary before the paper becomes acceptable for publication. I concur with both reviewers that this presents a useful and comprehensive review about the role the biosphere is playing in modulating atmospheric chemistry and climate, which in fact may become a standard paper to cite when referring to this interaction. Similar to reviewer #2, I though also see problems the way the paper is structured, but feel that this can be changed fairly easily by introducing more meaningful sub-chapter headers, by chang-

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ing the order of the sub-chapters and by providing some rationale for the organisation of the paper that allows the reader to better follow. Please find my corresponding detailed comments below. When revising their paper the authors should take the reviewer and comments into account and submit a revised manuscript which includes line numbers. The revised paper should be accompanied by a point-by-point reply to the reviewer and my comments.

Detailed comments:

- p. 7721, l. 19: here it would be nice to provide some rationale of the organisation of the remaining manuscript so that the reader is prepared for what follows
- p. 7721, l. 20: this header seems a poor description of what is presented below
- p. 7721, l. 23: I'd rather use "absorbing GHGs"
- p. 7729, l. 14: logically I'd rather like to see chapter 2.3 after 2.1
- p. 7731, l. 19: "Global trace gas exchange modelling" ?;
- p. 7731-7752: in this chapter you are dealing with certain key processes (fire, land use), ecosystems (crops, wetlands) and species (NO_x, CH₄, BVOC, O₃, H₂) - is there a way to make this selection look better organised ? maybe a distinction between key ecosystems, processes and species can help to guide the organisation of this chapter
- p. 7732, l. 8: "DGVM model structure" ?
- p. 7740, l. 14: "Plot-scale" ?
- p. 7741, l. 5: reference to Jansens & Luyssaert (2009) is missing

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