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Biogeosciences Discussions

Interactive comment on "Local ecosystem feedbacks and critical transitions in the climate" *by* M. Rietkerk et al.

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I had trouble reviewing this manuscript. I interpreted it as more of an EOS-type editorial that a straight scientific piece and mentioned that in my pre-screening review. If such a thing is acceptable in this journal and is identified as such then it should be accepted albeit with a few more caveats and less excessive language. There are no new scientific results presented and I don't think the work stands up as a traditional review paper as there is clearly a strong point of view, no balance of opposing pieces of evidence and no new conclusions based upon a different examination of previous evidence which would I would expect from a traditional review.

Stylistically, there is a tendency for the authors to build a case with a lot of speculative language and then reach an overwhelmingly strong conclusion. For example in section

4, The conclusion: "Research so far leaves *no doubt*" is buttressed by several sentences proceeding it in which "may" and "possibly" are used. This kind of thing needs to be cleaned up. Of course there are doubts which are made clear in the previous sentences. In fact doubt is the underlying idea of this field. For example, in the recent Pitman et al. LUCID paper it was clearly demonstrated how much in doubt even the basics in this field are. The surface fluxes simulated in that paper were all over the place (see Figure 2 in Pitman et al.) indicating there is not even basic agreement among the various models as to the fundamental transfer of energy from the land-surface to the atmosphere in magnitude or sign. Everything happening after that, of course, is suspect.

I look at this paper as a plea to improve land surface modeling, something that is sorely needed and I agree mostly with the overall conclusions of the piece. If such a thing is appropriate here and it is identified a such I recommend publication though personally I think the land surface community needs to go back and get the basics right before adding on all these complexities.

- Tom Chase

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