

Two referees have now sent their reports on the paper, and the open discussion on the manuscript has been closed. The authors have been given until October 15 to submit their response. I will then have to take my decision as editor.

In order to speed somewhat the whole process, I give here my comments and recommendations, based on the referees' reports and on my own opinion.

Referee 1 is an experienced specialist of land surface modelling, while Referee 2 is an expert on estimation theory. Both write that the paper contains new and significant results, but both also consider that a major revision is necessary before the paper can be accepted for publication. They make a fairly large number of comments and requests, which bear on the presentation of the work done by the authors, and on the conclusions to be drawn from the results they obtain. My understanding is that none of the referees' requests would require a significant change in the substance of the paper.

I follow the referees' advice, and suggest that the authors (if they have not already started doing so) prepare a revised version of their paper along the comments and requests of the referees.

The first request of Referee 1 is that the authors explain more precisely what is new and original in their paper. He/she also asks for a comparison of the model JSBACH with other ecosystem models, and questions the classification of the parameters in Table 1. He/she adds a number of specific comments.

Referee 2's comments bear more on the methodological aspects of the paper, and in particular on the use of the Adaptive Metropolis algorithm and the mathematical analysis of the results it produces. He/she also asks for a more detailed description of the JSBACH model (incidentally, it might be useful for some readers to specify clearly, as requested by the referee in his/her major comment 4, that JSBACH is a dynamical model which simulates the temporal evolution of an ecosystem). The referee adds a number of minor comments.

If, as I suggest them to do, the authors decide to prepare a revised version of their paper, they must do it in strict agreement with the instructions they have received from the Editorial Office of *Nonlinear Processes in Geophysics*. In particular, they must give a point-by-point response to all of both referees' comments and requests. Should they disagree with one particular comment, or decide not to follow one particular request, they must state precisely their reasons for that.

Concerning the last of Referee 2's requests (that the English be checked), I mention that, if the paper is accepted, it will in any case be checked for the English without additional cost for the authors.

The revised version will be submitted to further review by (normally) two referees who may, or may not, be the referees of the first version.

The authors must submit a response to the referees' reports by October 15. That response does not have to be their full revised version, which may come later if the authors need more time.