

Interactive comment on “Evaluation of a Dynamic Global Vegetation Model using time series of satellite vegetation indices” by F. Maignan et al.

F. Maignan et al.

maignan@lsce.ipsl.fr

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Anonymous Referee #2

Title: The model is not used as a DGVM here, so it seems strange to put DGVM in the title.

Answer: We removed the word ‘Dynamic’ from the title.

p. 912, line 10: not clear why it leads to unrealistic behavior.

Answer: We modified the sentence to “Although functionally realistic, this system generates chaotic behavior (due to non-linear onset and senescence phenological models using thresholds) and leads, for Grasses and Crops, to a seemingly erratic tendency

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of ‘grow and decay’. This results in very irregular LAI time series, with unrealistically large interannual variations compared to the observations”.

The improvement seems too minor to warrant publication.

Answer: We agree that the improvement in the model performance does not justify a publication, but the paper is foremost the description of an evaluation methodology.

Also, since the crop version of ORCHIDEE has been published, the present seems backwards relative to existing work.

Answer: The crop version of ORCHIDEE (ORCHIDEE-STICS) is for crops only and not for natural vegetation, and does not work at global scale, so this new climate driven senescence model for crops represents a real improvement for the standard ORCHIDEE version.

p. 913, line 20 versus 29: 2002 or 2008?

Answer: We added the text in square brackets to make our procedure clearer: “We performed monthly linear regressions between CRU and NCEP during the common period [(1901-2002)] of the two datasets, and used the results of these regressions to correct the NCEP data [over the whole period (1901-2008)].”

p. 922, line 12: ...but on p. 910 line 17 you didn’t talk about two maps. Or do you mean different LAI?

Answer: Same answer as for reviewer #1, question 6: We added a new paragraph “2.1.3 PFT spatial distribution” to warn that the global simulations were done independently within different contexts, using different PFT maps. Still we wanted to make use of several global simulations that were available to compare (they are not so numerous because of the heavy cost in CPU time and the large amount of occupied disk space). We added the images of the two fractional coverages as supplementary material.

p. 924, line 16: What does this mean relative to the previous conclusions about ERA-I

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and CRUncep?

Answer: They remain the same: ERA-Interim and CRU-NCEP perform similarly for the mean annual cycle and ERA-Interim performs marginally better than CRU-NCEP regarding interannual variability.

General: Easy to read despite multiple minor language mistakes. The method seems interesting. As I kept reading, I felt more favorable.

Answer: We thank the reviewer for this finally rather positive feedback. We have asked a native speaker to make editorial corrections to the final version of the manuscript.

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