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**Biogeosciences Discussions**

# *Interactive comment on* "A new concept for simulation of vegetated land surface dynamics – Part 1: The event driven phenology model" *by* V. Kovalskyy and G. M. Henebry

**Anonymous Referee #1**

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Dear Authors, The manuscript on A new concept for Simulation of Vegetated Land Surface Dynamics: The event driven Phenology model Part 1. – is certainly a valuable asset to phenological studies implemented in a modelling framework. The article published in BGD addresses an important aspect of our understanding of the vegetation dynamics and associated neighboring fields. The scientific discussion on the observation and understanding of Phenology, and also its delineation from climatological factors is in a lively stage. The concept of the Event driven Phenological Model (EDPM) should be supported by publication of this article. Though the work by Kovalsky and Henebry is well explained and in detail documented some major issues need to be taken into consideration to improve the manuscript. a) Yet the overall appearance



if the article is too long. If reduced by words the main information will still be carried to the reader. For example the 4 pages for the introduction part. b) Being more explicit in some parts. When you state that for irrigated fields you exclude heat and rainfall stresses for the model training, because they are not relevant for vegetation development. There is wide consensus about the effect of extreme events in their ability to shape plant development, due to direct input as well as lagged effects, and so on. To me it is quiet substantial to base such declaration on a more detailed basis. c) The model, as described, certainly has the potential to support Global Models, but this is not well documented. It rather leaves the impression that quiet a bunch of individual tuning is needed to produce feasible results, which in Global Modelling is a thing to prevent. d) Data sources: The article clearly lacks concerning included data. Beside the fact that a model which is advised to be used for global application is tested on more or less 2 agricultural spots, which might be representative for the region, it contains a too little temporal range to be analyzed for climatological/phenological shifts. In this context the Bondville site contributes only with 3 out of 12 potential years. To improve the manuscript needs to consider longer time spans and should additionally include major vegetation types to convince. Minor: 5286/12 – PAR is not explained where first mentioned 5288/04 – bsands 5304/72âĂŘ29 wording

Interactive comment on Biogeosciences Discuss., 8, 5281, 2011.